

**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 Number 001 – 32205

**CBRE
CBRE GROUP, INC.**

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation or organization)
400 South Hope Street, 25th Floor
Los Angeles, California
(Address of principal executive offices)

94-3391143
(I.R.S. Employer Identification Number)

90071
(Zip Code)

(213) 613-3333

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of Each Class</u>	<u>Name of Each Exchange on Which Registered</u>
Class A Common Stock, \$0.01 par value	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:

N.A.

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 whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) 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 the Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer 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 Class A Common Stock held by non-affiliates of the registrant was \$16.2 billion based upon the last sales price on June 29, 2018 on the New York Stock Exchange of \$47.74 for the registrant's Class A Common Stock.

As of February 14, 2019, the number of shares of Class A Common Stock outstanding was 335,834,731.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the proxy statement for the registrant's 2019 Annual Meeting of Stockholders to be held May 17, 2019 are incorporated by reference in Part III of this Annual Report on Form 10-K.

CBRE GROUP, INC.
ANNUAL REPORT ON FORM 10-K
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PART I

Item 1. Business

Company Overview

CBRE Group, Inc. is a Delaware corporation. References to “CBRE,” “the company,” “we,” “us” and “our” refer to CBRE Group, Inc. and include all of its consolidated subsidiaries, unless otherwise indicated or the context requires otherwise.

We are the world’s largest commercial real estate services and investment firm, based on 2018 revenue, with leading global market positions in our leasing, property sales, occupier outsourcing and valuation businesses. As of December 31, 2018, we operated in more than 480 offices worldwide with over 90,000 employees, excluding independent affiliates. We serve clients in more than 100 countries.

Our business is focused on providing services to both occupiers of and investors in real estate. For occupiers, we provide facilities management, project management, transaction (both property sales and leasing) and consulting services, among others. For investors, we provide capital markets (property sales, commercial mortgage brokerage, loan origination and servicing), property leasing, investment management, property management, valuation and development services, among others. We provide commercial real estate services under the “CBRE” brand name, investment management services under the “CBRE Global Investors” brand name and development services under the “Trammell Crow Company” brand name.

We generate revenue from both management fees (large multi-year portfolio and per-project contracts) and commissions on transactions. Our contractual, fee-for-services businesses generally involve occupier outsourcing (including facilities and project management), property management, investment management, appraisal/valuation and loan servicing. Occupiers and investors increasingly prefer to purchase integrated, account-based services, and CBRE has been well-positioned to capture this business. As a result, we have generated significantly more contractual revenue over the past decade.

In 2018, we generated revenue from a highly diversified base of clients, including more than 90 of the *Fortune* 100 companies. We have been an *S&P* 500 company since 2006 and in 2018 we were ranked #207 on the *Fortune* 500. We have been voted the most recognized commercial real estate brand in the *Lipsey Company* survey for 18 consecutive years (including 2019). We have also been rated a World’s Most Ethical Company by the *Ethisphere Institute* for six consecutive years.

CBRE History

We will mark our 113th year of continuous operations in 2019, tracing our origins to a company founded in San Francisco in the aftermath of the 1906 earthquake. Since then, we have grown into the largest global commercial real estate services and investment firm (in terms of 2018 revenue) through organic growth and a series of strategic acquisitions. Among these are the following acquisitions: FacilitySource (June 2018); Global Workplace Solutions (September 2015); Norland Managed Services Ltd (December 2013); ING Group N.V.’s Real Estate Investment Management (REIM) operations in Europe and Asia (October 2011) and its U.S.-based global real estate listed securities business (July 2011); and Trammell Crow Company (December 2006).

Our Regions of Operation and Principal Services

CBRE Group, Inc. is a holding company that conducts all of its operations through its indirect subsidiaries. CBRE Group, Inc. does not have any independent operations or employees. CBRE Services, Inc., our direct wholly-owned subsidiary, is also a holding company and is the primary obligor or issuer with respect to most of our long-term indebtedness.

On August 17, 2018, we announced a new organization structure that became effective on January 1, 2019. Under the new structure, we will organize our operations around, and will publicly report our financial results on, three global business segments: (1) Advisory Services, (2) Global Workplace Solutions and (3) Real Estate Investments. For 2018, we continued to report our financial results through the following segments: (1) Americas, (2) Europe, Middle East and Africa, or EMEA, (3) Asia Pacific, (4) Global Investment Management and (5) Development Services.

The Americas

The Americas is our largest reporting segment, comprised of operations throughout the United States and Canada as well as key markets in Latin America.

Most of our operations are conducted through our indirect wholly-owned subsidiary CBRE, Inc. Our mortgage loan origination, sales and servicing operations are conducted exclusively through our indirect wholly-owned subsidiary operating under the name CBRE Capital Markets, Inc., or CBRE Capital Markets, and its subsidiaries. Our operations in Canada are conducted through our indirect wholly-owned subsidiary CBRE Limited and our operations in Latin America are operated through various indirect wholly-owned subsidiaries.

Our operations also include independent affiliates to whom we license the “CBRE” name in their local markets in return for payments of annual or quarterly royalty fees to us and an agreement to cross-refer business between us and the affiliate. Revenue from affiliates totaled less than 1% of total revenue in our Americas segment in 2018.

Within our Americas segment, we organize our services into several business lines, as further described below.

Leasing Services

We provide strategic advice and execution for owners, investors, and occupiers of real estate in connection with the leasing of office, industrial and retail space. We generate significant repeat business from existing clients, which, for example, accounted for approximately 66% of our U.S. leasing activity in 2018, including referrals from other parts of our business. We believe we are a market leader for the provision of these services in most top U.S. metropolitan statistical areas (as defined by the U.S. Census Bureau), including Atlanta, Austin, Chicago, Dallas, Denver, Houston, Los Angeles, Miami/South Florida, New York, Philadelphia, Phoenix, San Francisco and Seattle.

Capital Markets

We offer clients property sales and mortgage and structured financing services. The tight integration of these services helps to meet marketplace demand for comprehensive solutions. During 2018, we closed approximately \$147.5 billion of capital markets transactions in the Americas, including \$100.1 billion of property sales transactions and \$47.5 billion of mortgage originations and loan sales.

We are the leading property sales advisor in the United States, accounting for approximately 16% of investment sales transactions greater than \$2.5 million across office, industrial, retail, multifamily and hotel properties in 2018, according to Real Capital Analytics. Our mortgage brokerage business brokers, originate and service commercial mortgage loans primarily through relationships established with investment banking firms, national and regional banks, credit companies, insurance companies and pension funds. In the Americas, our mortgage loan origination volume in 2018 was \$46.9 billion, including approximately \$21.1 billion for U.S. Government Sponsored Enterprises (GSEs). Most of the GSE loans were financed through revolving warehouse credit lines through a CBRE subsidiary that is dedicated exclusively for this purpose and were substantially risk mitigated by either obtaining a contractual purchase commitment from the GSE or confirming a forward-trade commitment for the issuance and purchase of a mortgage-backed security that will be secured by the loan. We advised on the sale of approximately \$0.6 billion of mortgages on behalf of financial institutions in 2018. We also oversee a loan servicing portfolio, which totaled approximately \$162 billion in the Americas (approximately \$201 billion globally) at year-end 2018.

Our real estate services professionals (both leasing and capital markets) are compensated primarily through commissions, which are payable upon completion of an assignment. This mitigates the effect of compensation, our largest expense, on our operating margins during difficult market conditions. We strive to retain top professionals through an attractive compensation program tied to productivity as well as investments in support resources, including professional development and training, market research and information, technology, branding and marketing.

We further strengthen our relationships with our real estate services clients by offering proprietary research to them through CBRE Research and CBRE Econometric Advisors, our commercial real estate market information and forecasting groups, respectively.

Valuation Services

We provide valuation services that include market-value appraisals, litigation support, discounted cash flow analyses, feasibility studies as well as consulting services such as property condition reports, hotel advisory and environmental consulting. Our valuation business has developed proprietary systems for data management, analysis and valuation report preparation, which we believe provide us with an advantage over our competitors. We believe that our valuation business is one of the largest in the commercial real estate industry. During 2018, we completed over 78,000 valuation, appraisal and advisory assignments in the Americas.

Occupier Outsourcing Services

We provide a broad suite of services to occupiers of real estate, including facilities management, project management, transaction management and management consulting. We report facilities and project management as well as management consulting activities in our occupier outsourcing revenue line and transaction management in our lease and sales revenue lines.

We believe the outsourcing of commercial real estate services is a long-term trend in our industry, with occupiers, such as corporations, health care providers and others, achieving better execution and improved efficiency by relying on the expertise of third-party real estate specialists.

We typically enter into multi-year, often multi-service, outsourcing contracts with our clients and also provide services on a one-off assignment or a short-term contract basis. Facilities management involves the day-to-day management of client-occupied space and includes headquarter buildings, regional offices, administrative offices, data centers and other critical facilities, manufacturing and laboratory facilities, distribution facilities and retail space. Contracts for facilities management services are often structured so that we are reimbursed for client-dedicated personnel costs and subcontracted vendor costs as well as associated overhead expenses plus a monthly fee, and in some cases, annual incentives tied to agreed-upon performance targets, with any penalties typically capped. In addition, we have contracts for facilities management services based on fixed fees or guaranteed maximum prices. Fixed fee contracts are typically structured where an agreed upon scope of work is delivered for a fixed price while guaranteed maximum price contracts are structured with an agreed upon scope of work that will be provided to the client for a not to exceed price. Project management services are typically provided on a portfolio-wide or programmatic basis. Revenues from project management services generally include fixed management fees, variable fees and incentive fees if certain agreed-upon performance targets are met. Revenues from project management may also include reimbursement of payroll and related costs for personnel providing the services and subcontracted vendor costs.

Property Management Services

We provide property management services on a contractual basis for owners of and investors in office, industrial and retail properties. These services include construction management, marketing, building engineering, accounting and financial services.

We are compensated for our services through a monthly management fee earned based on either a specified percentage of the monthly rental income, rental receipts generated from the property under management or a fixed fee. We are also often reimbursed for our administrative and payroll costs directly attributable to the properties under management. Our management agreements with our property management services clients may be terminated by either party with notice generally ranging between 30 to 90 days; however, we have developed long-term relationships with many of these clients and the typical contract continues for multiple years. We believe our contractual relationships with these clients put us in an advantageous position to provide other services to them, including leasing, refinancing, disposition and appraisal.

Europe, Middle East and Africa (EMEA)

Our Europe, Middle East and Africa, or EMEA, reporting segment serves clients in over 70 countries. The largest operations are located in Belgium, France, Germany, Ireland, Italy, The Netherlands, Spain, Switzerland and the United Kingdom. We generally provide a full range of services concentrated on the commercial property sector in this segment. Within EMEA, our services are organized along similar lines as in the Americas, including leasing, property sales, valuation services, asset management services and occupier outsourcing, among others.

In several countries in EMEA, we have contractual relationships with independent affiliates that provide commercial real estate services under our brand name. Our agreements include licenses that allow these independent affiliates to use the “CBRE” name in the relevant territory in return for payments of annual or quarterly royalty fees to us. In addition, these agreements typically provide for the cross-referral of business between us and our affiliates. Revenue from affiliates totaled less than 1% of total revenue in our EMEA segment in 2018.

Asia Pacific

Our Asia Pacific reporting segment serves clients in over 20 countries. Our largest operations in Asia are located in Greater China, India, Japan, Singapore and Thailand. The Pacific region includes Australia and New Zealand. We generally provide a full range of commercial real estate services in this segment, similar to the services provided by our Americas and EMEA segments. We also provide services to the residential property sector, primarily in the Pacific region.

In several countries in Asia, we have contractual agreements with independent affiliates that generate royalty fees and support cross-referral arrangements similar to our EMEA segment. Revenue from affiliates totaled less than 1% of total revenue in our Asia Pacific segment in 2018.

Global Investment Management

Operations in our Global Investment Management reporting segment are conducted through our indirect wholly-owned subsidiary CBRE Global Investors, LLC and its global affiliates, which we also refer to as CBRE Global Investors. CBRE Global Investors provides investment management services to pension funds, insurance companies, sovereign wealth funds, foundations, endowments and other institutional investors seeking to generate returns and diversification through investment in real estate. We sponsor investment programs that span the risk/return spectrum in: North America, Europe, Asia and Australia. In some strategies, CBRE Global Investors and its investment teams co-invest with its limited partners.

CBRE Global Investors’ offerings are organized into four primary categories: (1) direct real estate investments through sponsored funds; (2) direct real estate investments through separate accounts; (3) indirect real estate and infrastructure investments through listed securities; and (4) indirect real estate, infrastructure and private equity investments through multi-manager investment programs.

Assets under management, or AUM, totaled \$105.5 billion at December 31, 2018 as compared to \$103.2 billion at December 31, 2017. In local currency, AUM for 2018 was up \$5.1 billion, but this increase was reduced by \$2.8 billion of unfavorable foreign currency movement.

Development Services

Operations in our Development Services reporting segment are conducted through our indirect wholly-owned subsidiary Trammell Crow Company, LLC, which we also refer to as Trammell Crow Company, and certain of its subsidiaries, providing development services in the United States to users of and investors in commercial real estate, as well as for its own account. Trammell Crow Company pursues opportunistic, risk-mitigated development and investment in commercial real estate across a wide spectrum of property types, including: industrial, office and retail properties; healthcare facilities of all types (medical office buildings, hospitals and ambulatory surgery centers); and residential/mixed-use projects.

Trammell Crow Company pursues development and investment activity on behalf of its clients on a fee basis with no, or limited, ownership interest in a property, in partnership with its clients through co-investment – either on an individual project basis or through programs with certain strategic capital partners or for its own account with 100% ownership. Development services activity in which Trammell Crow Company has an ownership interest is conducted through subsidiaries that are consolidated or unconsolidated for financial reporting purposes, depending primarily on the extent and nature of our ownership interest.

At December 31, 2018, Trammell Crow Company had \$9.0 billion of development projects in process. Additionally, the inventory of pipeline deals (prospective projects we believe have a greater than 50% chance of closing or where land has been acquired and the projected construction start date is more than twelve months out) totaled \$3.7 billion at December 31, 2018.

Competition

We compete across a variety of business lines within the commercial real estate industry, including property management, facilities management, project and transaction management, tenant and landlord leasing, capital markets solutions (property sales, commercial mortgage origination and structured finance) real estate investment management, valuation, loan servicing, development services and proprietary research. Each business line is highly competitive on an international, national, regional and local level. Although we are the largest commercial real estate services firm in the world in terms of 2018 revenue, our relative competitive position varies significantly across geographic markets, property types and services. We face competition from other commercial real estate service providers that compete with us on a global, national, regional or local basis or within a market segment; companies that traditionally competed in limited portions of our facilities management business and have expanded their outsourcing offerings from time to time; in-house corporate real estate departments and property owners/developers that self-perform real estate services; investment banking firms, investment managers and developers that compete with us to raise and place investment capital; and accounting/consulting firms that advise on real estate strategies. Some of these firms may have greater financial resources than we do.

Despite recent consolidation, the commercial real estate services industry remains highly fragmented and competitive. Although many of our competitors are substantially smaller than we are, some of them are larger on a regional or local basis or have a stronger position in a specific market segment or service offering. Among our primary competitors are other large national and global firms, such as Jones Lang LaSalle Incorporated, or JLL, Cushman & Wakefield, Colliers International Group, Inc., Savills plc and Newmark Group, Inc.; market-segment specialists, such as Eastdil Secured, HFF, L.P., Marcus & Millichap, Inc. and Walker & Dunlop; and firms with business lines that compete with our occupier outsourcing business, such as ISS, and Sodexo. In addition, in recent years, providers of co-working space, such as WeWork, IWG/Regus, Industrious and Knotel, have offered services directly to occupiers, providing competition, particularly for smaller space requirements. These co-working providers also compete with our new flex-space subsidiary, CBRE Hana, which we announced in late 2018.

Seasonality

A significant portion of our revenue is seasonal, which an investor should keep in mind when comparing our financial condition and results of operations on a quarter-by-quarter basis. Historically, our revenue, operating income, net income and cash flow from operating activities tend to be lowest in the first quarter, and highest in the fourth quarter of each year. Revenue, earnings and cash flow have generally been concentrated in the fourth calendar quarter due to the focus on completing sales, financing and leasing transactions prior to year-end.

Employees

At December 31, 2018, excluding our independent affiliates, we had more than 90,000 employees worldwide, approximately 37% of whose costs are fully reimbursed by clients and are mostly in our Occupier Outsourcing and Property Management lines of business. At December 31, 2018, approximately 9% of our employees worldwide were subject to collective bargaining agreements.

Intellectual Property

We regard our intellectual property as an important part of our business. We hold various trademarks and trade names worldwide, which include the “CBRE” name. Although we believe our intellectual property plays a role in maintaining our competitive position in a number of the markets that we serve, we do not believe we would be materially, adversely affected by the expiration or termination of our trademarks or trade names or the loss of any of our other intellectual property rights other than the “CBRE” and “Trammell Crow Company” names. We maintain trademark registrations for the CBRE service mark in jurisdictions where we conduct significant business.

We hold a license to use the “Trammell Crow Company” trade name pursuant to a license agreement with CF98, L.P., an affiliate of Crow Realty Investors, L.P., d/b/a Crow Holdings, which may be revoked if we fail to satisfy usage and quality control covenants under the license agreement.

In addition to trademarks and trade names, we have acquired and developed proprietary technologies for the provision of complex services and analysis. We have a number of pending patent applications relating to these proprietary technologies. We will continue to file additional patent applications on new inventions, as appropriate, demonstrating our commitment to technology and innovation. We also offer proprietary research to clients through our CBRE Research and CBRE Econometric Advisors commercial real estate market information and forecasting groups and we offer proprietary investment analysis and structures through our CBRE Global Investors business.

Environmental Matters

Federal, state and local laws and regulations in the countries in which we do business impose environmental liabilities, controls, disclosure rules and zoning restrictions that affect the ownership, management, development, use or sale of commercial real estate. Certain of these laws and regulations may impose liability on current or previous real property owners or operators for the cost of investigating, cleaning up or removing contamination caused by hazardous or toxic substances at a property, including contamination resulting from above-ground or underground storage tanks or the presence of asbestos or lead at a property. If contamination occurs or is present during our role as a property or facility manager or developer, we could be held liable for such costs as a current “operator” of a property, regardless of the legality of the acts or omissions that caused the contamination and without regard to whether we knew of, or were responsible for, the presence of such hazardous or toxic substances. The operator of a site also may be liable under common law to third parties for damages and injuries resulting from exposure to hazardous substances or environmental contamination at a site, including liabilities arising from exposure to asbestos-containing materials. Under certain laws and common law principles, any failure by us to disclose environmental contamination at a property could subject us to liability to a buyer or lessee of the property. Further, federal, state and local governments in the countries in which we do business have enacted various laws, regulations and treaties governing environmental and climate change, particularly for “greenhouse gases,” which seek to tax, penalize or limit their release. Such regulations could lead to increased operational or compliance costs over time.

While we are aware of the presence or the potential presence of regulated substances in the soil or groundwater at or near several properties owned, operated or managed by us that may have resulted from historical or ongoing activities on those properties, we are not aware of any material noncompliance with the environmental laws or regulations currently applicable to us, and we are not the subject of any material claim for liability with respect to contamination at any location. However, these laws and regulations may discourage sales and leasing activities and mortgage lending with respect to some properties, which may adversely affect both the commercial real estate services industry in general and us. Environmental contamination or other environmental liabilities may also negatively affect the value of commercial real estate assets held by entities that are managed by our Global Investment Management and Development Services businesses, which could adversely affect the results of operations of these business lines.

Available Information

Our website is www.cbre.com. We use our website as a channel of distribution for company information, and financial and other material information regarding our company is routinely posted and accessible on our website.

On the Investor Relations section of our website, we post the following filings as soon as reasonably practicable after they are electronically filed with or furnished to the Securities and Exchange Commission, or the SEC: our Annual Report on Form 10-K, or Annual Report, our Proxy Statement on Schedule 14A, our Quarterly Reports on Form 10-Q, our Current Reports on Form 8-K and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act. We also make available through our website other reports filed with or furnished to the SEC under the Exchange Act, including reports filed by our officers and directors under Section 16(a) of the Exchange Act.

All of the information on our Investor Relations web page is available to be viewed free of charge. Information contained on our website is not part of this Annual Report or our other filings with the SEC. We assume no obligation to update or revise any forward-looking statements in this Annual Report whether as a result of new information, future events or otherwise, unless we are required to do so by law.

The SEC also maintains a website (www.sec.gov) that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

Item 1A. Risk Factors

Set forth below and elsewhere in this report and in other documents we file with the SEC are risks and uncertainties that could cause our actual results to differ materially from the results contemplated by the forward-looking statements contained in this report and other public statements we make. Based on the information currently known to us, we believe that the matters discussed below identify the material risk factors affecting our business. However, the risks and uncertainties we face are not limited to those described below. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial (but that later become material) may also adversely affect our business.

The success of our business is significantly related to general economic conditions and, accordingly, our business, operations and financial condition could be adversely affected by economic slowdowns, liquidity pressure, fiscal or political uncertainty and possible subsequent declines in commercial real estate asset values, property sales and leasing activities in one or more of the geographies or industry sectors that we or our clients serve.

Periods of economic weakness or recession, significantly rising interest rates, fiscal or political uncertainty, market volatility, declining employment levels, declining demand for commercial real estate, falling real estate values, disruption to the global capital or credit markets or the public perception that any of these events may occur, may negatively affect the performance of some or all of our business lines.

Our business is significantly affected by generally prevailing economic conditions in the markets where we principally operate, which can result in a general decline in real estate acquisition, disposition and leasing activity, as well as a general decline in the value of commercial real estate and in rents, which in turn reduces revenue from property management fees and commissions derived from property sales, leasing, valuation and financing, as well as revenues associated with development or investment management activities. Our businesses could also suffer from political or economic disruptions (or the perception that such disruptions may occur) that affect interest rates or liquidity or create financial, market or regulatory uncertainty. For example, uncertainty with respect to the political and economic impact of the United Kingdom's announced departure from the European Union and the continued negotiations related thereto has caused and may continue to cause market volatility and currency fluctuations and adversely impact our clients' and consumers' confidence, which may result in a deterioration in our U.K. and other European businesses if leasing and investing activity slows down. Furthermore, if such withdrawal from the European Union has an adverse economic impact on the United Kingdom, our U.K. operations may experience a prolonged period of decreased sales and leasing activity.

Adverse economic conditions or political or regulatory uncertainty could also lead to a decline in property sales prices as well as a decline in funds invested in existing commercial real estate assets and properties planned for development, which in turn could reduce the commissions and fees that we earn. In particular, the performance of commercial real estate assets located in the United Kingdom and access to funds from investors located in the United Kingdom may be adversely impacted by any weakness in the British economy following withdrawal from the European Union or the perception that such weakness may occur. In addition, our development and investment strategy often entails making co-investments alongside our investor clients. During an economic downturn, capital for our investment activities is usually constrained and it may take longer for us to dispose of real estate investments or selling prices may be lower than originally anticipated. As a result, the value of our commercial real estate investments may be reduced, and we could realize losses or diminished profitability. In addition, economic downturns may reduce the amount of loan originations and related servicing by our Capital Markets business.

The performance of our Property Management business depends upon how well the properties we manage perform. This is because our fees are generally based on a percentage of rent collections from these properties. Rent collections may be affected by many factors, including: (1) real estate and financial market conditions prevailing generally and locally; (2) our ability to attract and retain creditworthy tenants, particularly during economic downturns; and (3) the magnitude of defaults by tenants under their respective leases, which may increase during distressed economic conditions.

In continental Europe and Asia Pacific, the economies in certain countries where we operate can be fragile, which may adversely affect our financial performance.

Economic, political and regulatory uncertainty as well as significant changes and volatility in the financial markets and business environment, and in the global landscape, make it increasingly difficult for us to predict our financial performance into the future. As a result, any guidance or outlook that we provide on our performance is based on then-current conditions, and there is a risk that such guidance may turn out to be inaccurate.

Adverse developments in the credit markets may harm our business, results of operations and financial condition.

Our Global Investment Management, Development Services and Capital Markets (including property sales and mortgage and structured financing services) businesses are sensitive to credit cost and availability as well as marketplace liquidity. Additionally, the revenues in all of our businesses are dependent to some extent on the overall volume of activity (and pricing) in the commercial real estate market.

Disruptions in the credit markets may adversely affect our business of providing advisory services to owners, investors and occupiers of real estate in connection with the leasing, disposition and acquisition of property. If our clients are unable to procure credit on favorable terms, there may be fewer completed leasing transactions, dispositions and acquisitions of property. In addition, if purchasers of commercial real estate are not able to procure favorable financing, resulting in the lack of disposition and acquisition opportunities for our funds and projects, our Global Investment Management and Development Services businesses may be unable to generate incentive fees, and we may also experience losses of co-invested equity capital if the disruption causes a permanent decline in the value of investments made.

Our operations are subject to social, political and economic risks in foreign countries as well as foreign currency volatility.

We conduct a significant portion of our business and employ a substantial number of people outside of the United States and as a result, we are subject to risks associated with doing business globally. During 2018, approximately 43% of our revenue was transacted in foreign currencies, the majority of which included the Australian dollar, Brazilian real, British pound sterling, Canadian dollar, Chinese yuan, Czech koruna, Danish krone, euro, Hong Kong dollar, Indian rupee, Israeli shekel, Japanese yen, Korean won, Mexican peso, New Zealand dollar, Polish zloty, Singapore dollar, Swedish krona, Swiss franc and Thai baht. Fluctuations in foreign currency exchange rates may result in corresponding fluctuations in our assets under management for our Global Investment Management business, revenue and earnings. Over time, fluctuations in the value of the U.S. dollar relative to the other currencies in which we may generate earnings could adversely affect our business, financial condition and operating results. Due to the constantly changing currency exposures to which we are subject and the volatility of

currency exchange rates, we cannot predict the effect of exchange rate fluctuations upon future operating results. For example, uncertainty with respect to the political and economic impact of the United Kingdom's announced withdrawal from the European Union has caused and may continue to cause additional volatility in international currency markets and any long-term adverse economic consequences of such withdrawal may create additional volatility in the international currency markets. In addition, fluctuations in currencies relative to the U.S. dollar may make it more difficult to perform period-to-period comparisons of our reported results of operations.

In addition to exposure to foreign currency fluctuations, our international operations expose us to international economic trends as well as foreign governmental policy measures. Additional circumstances and developments related to international operations that could negatively affect our business, financial condition or results of operations include, but are not limited to, the following factors:

- difficulties and costs of staffing and managing international operations among diverse geographies, languages and cultures;
- currency restrictions, transfer pricing regulations and adverse tax consequences, which may affect our ability to transfer capital and profits;
- adverse changes in regulatory or tax requirements and regimes or uncertainty about the application of or the future of such regulatory or tax requirements and regimes;
- the responsibility of complying with numerous, potentially conflicting and frequently complex and changing laws in multiple jurisdictions, *e.g.*, with respect to data protection, privacy regulations, corrupt practices, embargoes, trade sanctions, employment and licensing;
- the impact of regional or country-specific business cycles and economic instability;
- greater difficulty in collecting accounts receivable in some geographic regions such as Asia, where many countries have underdeveloped insolvency laws;
- a tendency for clients to delay payments in some European and Asian countries;
- political and economic instability in certain countries;
- foreign ownership restrictions with respect to operations in certain countries, particularly in Asia Pacific and the Middle East, or the risk that such restrictions will be adopted in the future; and
- changes in laws or policies governing foreign trade or investment and use of foreign operations or workers, and any negative sentiments towards multinational companies as a result of any such changes to laws or policies or due to trends such as political populism and economic nationalism.

We maintain anti-corruption and anti-money-laundering compliance programs and programs designed to enable us to comply with applicable government economic sanctions, embargoes and other import/export controls throughout the company. However, coordinating our activities to deal with the broad range of complex legal and regulatory environments in which we operate presents significant challenges. We may not be successful in complying with regulations in all situations and violations may result in criminal or civil sanctions, including material monetary fines, penalties, equitable remedies (including disgorgement), and other costs against us or our employees, and may have a material adverse effect on our reputation and business.

We have committed additional resources to expand our worldwide sales and marketing activities, to globalize our service offerings and products in select markets and to develop local sales and support channels. If we are unable to successfully implement these plans, maintain adequate long-term strategies that successfully manage the risks associated with our global business or adequately manage operational fluctuations, our business, financial condition or results of operations could be harmed. In addition, we have penetrated, and seek to continue to enter into, emerging markets to further expand our global platform. However, we may not be successful in effectively evaluating and monitoring the key business, operational, legal and compliance risks specific to those markets. The political and cultural risks present in emerging countries could also harm our ability to successfully execute our operations or manage our businesses there.

Our success depends upon the retention of our senior management, as well as our ability to attract and retain qualified and experienced employees.

Our continued success is highly dependent upon the efforts of our executive officers and other key employees, including Robert E. Sulentic, our President and Chief Executive Officer. While certain of our executive officers and key employees are subject to long-term compensatory arrangements from time to time, which include retention incentives and various restrictive covenants, there can be no assurance that we will be able to retain all key members of our senior management. We also are highly dependent upon the retention of our property sales and leasing professionals, who generate a significant amount of our revenues, as well as other revenue producing professionals. The departure of any of our key employees, or the loss of a significant number of key revenue producers, if we are unable to quickly hire and integrate qualified replacements, could cause our business, financial condition and results of operations to suffer. Competition for these personnel is significant and we may not be able to successfully recruit, integrate or retain sufficiently qualified personnel. In addition, the growth of our business is largely dependent upon our ability to attract and retain qualified support personnel in all areas of our business. We use equity incentives and sign-on and retention bonuses to help attract, retain and incentivize key personnel. As competition is significant for the services of such personnel, the expense of such incentives and bonuses may increase and we may be unable to attract or retain such personnel to the same extent that we have in the past. Any significant decline in, or failure to grow, our stock price may result in an increased risk of loss of these key personnel. Furthermore, stockholder influence on our compensation practices, including our ability to issue equity compensation, may decrease our ability to offer attractive compensation to key personnel and make recruiting, retaining and incentivizing such personnel more difficult. If we are unable to attract and retain these qualified personnel, our growth may be limited and our business and operating results could suffer.

We have numerous local, regional and global competitors across all of our business lines and the geographies that we serve, and further industry consolidation, fragmentation or innovation could lead to significant future competition.

We compete across a variety of business disciplines within the commercial real estate services and investment industry, including property management, facilities management, project and transaction management, tenant and landlord leasing, capital markets solutions (property sales, commercial mortgage origination and structured finance), flexible space solutions, real estate investment management, valuation, loan servicing, development services and proprietary research. Although we are the largest commercial real estate services firm in the world in terms of 2018 revenue, our relative competitive position varies significantly across geographies, property types and services and business lines.

Depending on the geography, property type or service or business line, we face competition from other commercial real estate services providers and investment firms, including outsourcing companies that traditionally competed in limited portions of our facilities management business and have expanded their offerings from time to time, in-house corporate real estate departments, developers, flexible space providers, institutional lenders, insurance companies, investment banking firms, investment managers and accounting and consulting firms. Some of these firms may have greater financial resources allocated to a particular geography, property type or service or business line than we have allocated to that geography, property type, service or business line. In addition, future changes in laws could lead to the entry of other new competitors, such as financial institutions.

Although many of our existing competitors are local or regional firms that are smaller than we are, some of these competitors are larger on a local or regional basis. We are further subject to competition from large national and multi-national firms that have similar service and investment competencies to ours, and it is possible that further industry consolidation could lead to much larger and more formidable competitors globally or in the particular geographies, property types, service or business lines that we serve. In addition, disruptive innovation by existing or new competitors could alter the competitive landscape in the future and require us to accurately identify and assess such changes and make timely and effective changes to our strategies and business model to compete effectively. Furthermore, we are substantially dependent on long-term client relationships and on revenue received for services under various service agreements. Many of these agreements may be canceled by the client for any reason with as little as 30 to 60 days' notice, as is typical in the industry.

In this competitive market, if we are unable to maintain long-term client relationships or are otherwise unable to retain existing clients and develop new clients, our business, results of operations and/or financial condition may be materially adversely affected. There is no assurance that we will be able to compete effectively, to maintain current fee levels or margins, or maintain or increase our market share.

Our growth has benefited significantly from acquisitions, which may not perform as expected and similar opportunities may not be available in the future.

A significant component of our growth over time has been generated by acquisitions. Any future growth through acquisitions will depend in part upon the continued availability of suitable acquisition candidates at favorable prices and upon advantageous terms and conditions, which may not be available to us, as well as sufficient liquidity and credit to fund these acquisitions. We may incur significant additional debt from time to time to finance any such acquisitions, subject to the restrictions contained in the documents governing our then-existing indebtedness. If we incur additional debt, the risks associated with our leverage, including our ability to service our then-existing debt, would increase. Acquisitions involve risks that business judgments concerning the value, strengths and weaknesses of businesses acquired may prove incorrect. Future acquisitions and any necessary related financings also may involve significant transaction-related expenses, which include severance, lease termination, transaction and deferred financing costs, among others.

We have had, and may continue to experience, challenges in integrating operations and information technology systems acquired from other companies. This could result in the diversion of management's attention from other business concerns and the potential loss of our key employees or clients or those of the acquired operations. The integration process itself may be disruptive to our business and the acquired company's businesses as it requires coordination of geographically diverse organizations and implementation of new accounting and information technology systems. We believe that most acquisitions will initially have an adverse impact on operating and net income. Acquisitions also frequently involve significant costs related to integrating information technology and accounting and management services.

We complete acquisitions with the expectation that they will result in various benefits, including enhanced or more stable revenues, a strengthened market position, cross-selling opportunities, cost synergies, tax benefits and accretion to our adjusted net income per share. Achieving the anticipated benefits of these acquisitions is subject to a number of uncertainties, including the realization of accretive benefits in the timeframe anticipated, whether we will experience greater-than-expected attrition from professionals licensed or associated with the acquired companies and whether we can successfully integrate the acquired business. Failure to achieve these anticipated benefits could result in increased costs, decreases in the amount of expected revenues and diversion of management's time and energy, which could in turn materially and adversely affect our overall business, financial condition and operating results.

If we are unable to manage the organizational challenges associated with our size, we might be unable to achieve our business objectives.

Our size and scale present significant management and organizational challenges. It might become increasingly difficult to maintain effective standards across a large enterprise and effectively institutionalize our knowledge. It might also become more difficult to maintain our culture, effectively manage and monitor our personnel and operations and effectively communicate our core values, policies and procedures, strategies and goals, particularly given our world-wide operations. The size and scope of our operations increase the possibility that we will have employees who engage in unlawful or fraudulent activity, or otherwise expose us to business or reputational risks, despite our efforts to train them and maintain controls to prevent such instances. For example, employee misconduct could involve inappropriate behavior directed at an individual's gender, appearance, ethnicity or religious beliefs, asking for a personal payment in exchange for awarding a company contract, accepting or giving inappropriate or excessive gifts, or misappropriating property or confidential or proprietary information or technology belonging to the company, our clients or third parties. If we are not successful in continuing to develop and implement the processes and tools designed to manage our enterprise and instill our culture and core values into all of our employees, our reputation and ability to compete successfully and achieve our business objectives could be impaired. In addition, from time to time, we have made, and may continue to make, changes to our operating model, including how we are organized, as the needs and size of our business change. If we do not successfully implement any such changes, our business and results of operation may be negatively impacted.

Our brand and reputation are key assets of our company, and our business may be affected by how we are perceived in the marketplace.

Our brand and reputation are key assets of our business, and we believe our continued success depends on our ability to preserve, grow and leverage the value of our brand. Our ability to attract and retain clients is highly dependent upon the external perceptions of our level of service, trustworthiness, business practices, management, workplace culture, financial condition, our response to unexpected events and other subjective qualities. Negative perceptions or publicity regarding these matters, even if related to seemingly isolated incidents and whether or not factually correct, could erode trust and confidence and damage our reputation among existing and potential clients, which could make it difficult for us to attract new clients and maintain existing ones. Negative public opinion could result from actual or alleged conduct in any number of activities or circumstances, including handling of client or employee complaints, regulatory compliance, such as compliance with applicable sanctions, the Foreign Corrupt Practices Act (FCPA), the U.K. Bribery Act and other antibribery, anti-money laundering and corruption laws, the use and protection of client and other sensitive information and from actions taken by regulators, the media, activists, competitors or others in response to such conduct. Negative publicity or claims about us on social media channels can also cause rapid, widespread reputational harm to our brand.

Our brand and reputation may also be harmed by actions taken by third parties that are outside our control. For example, any shortcoming or controversy related to a third-party vendor may be attributed to us, thus damaging our reputation and brand value and increasing the attractiveness of our competitors' services. Also, business decisions or other actions or omissions of our joint venture partners may adversely affect the value of our investments, result in litigation or regulatory action against us and otherwise damage our reputation and brand. Adverse developments with respect to our industry may also, by association, negatively impact our reputation, or result in greater regulatory or legislative scrutiny or litigation against us. Furthermore, as a company with headquarters and operations located in the United States, a negative perception of the United States arising from its political or other positions could harm the perception of our company and our brand. Although we monitor developments for areas of potential risk to our reputation and brand, negative perceptions or publicity would materially and adversely affect our revenues and profitability.

The protection of our brand, including related trademarks, may require the expenditure of significant financial and operational resources. Moreover, the steps we take to protect our brand may not adequately protect our rights or prevent third parties from infringing or misappropriating our trademarks. Even when we detect infringement or misappropriation of our trademarks, we may not be able to enforce all such trademarks. Any unauthorized use by third parties of our brand may adversely affect our brand. Furthermore, as we continue to expand our business, especially internationally, there is a risk we may face claims of infringement or other alleged violations of third-party intellectual property rights, which may restrict us from leveraging our brand in a manner consistent with our business goals.

Our joint venture activities and affiliate program involve unique risks that are often outside of our control and that, if realized, could harm our business.

We have utilized joint ventures for commercial investments, select local brokerage and other affiliations both in the United States and internationally, and we may acquire interests in other joint ventures in the future. Under our affiliate program, we enter into contractual relationships with local brokerage, property management or other operations pursuant to which we license to that operation our name and make available certain of our resources, in exchange for a royalty or economic participation in that operation's revenue, profits or transactional activity. In many of these joint ventures and affiliations, we may not have the right or power to direct the management and policies of the joint ventures or affiliates, and other participants or operators of affiliates may take action contrary to our instructions or requests and against our policies and objectives. In addition, the other participants and operators may become bankrupt or have economic or other business interests or goals that are inconsistent with ours. If a joint venture participant or affiliate acts contrary to our interest, it could harm our brand, business, results of operations and financial condition.

Our real estate investment and co-investment activities in our Global Investment Management as well as Development Services businesses subject us to real estate investment risks which could cause fluctuations in our earnings and cash flow.

An important part of the strategy for our Global Investment Management business involves co-investing our capital in certain real estate investments with our clients, and there is an inherent risk of loss of our investments. As of December 31, 2018, we had committed \$53.7 million to fund future co-investments in our Global Investment Management business, approximately \$24.3 million of which is expected to be funded during 2019. In addition to required future capital contributions, some of the co-investment entities may request additional capital from us and our subsidiaries holding investments in those assets. The failure to provide these contributions could have adverse consequences to our interests in these investments, including damage to our reputation with our co-investment partners and clients, as well as the necessity of obtaining alternative funding from other sources that may be on disadvantageous terms for us and the other co-investors. Participating as a co-investor is an important part of our Global Investment Management business, which might suffer if we were unable to make these investments.

Selective investment in real estate projects is an important part of our Development Services business strategy, and there is an inherent risk of loss of our investments. As of December 31, 2018, we had seven real estate projects consolidated in our financial statements. In addition, as of December 31, 2018, we were involved as a principal (in most cases, co-investing with our clients) in approximately 65 unconsolidated real estate subsidiaries with invested equity of \$93.3 million and had committed additional capital to these unconsolidated subsidiaries of \$34.7 million. As of December 31, 2018, we also guaranteed outstanding notes payable of these unconsolidated subsidiaries with outstanding balances of \$8.4 million.

During the ordinary course of our Development Services business, we provide numerous completion and budget guarantees requiring us to complete the relevant project within a specified timeframe and/or within a specified budget, with us potentially being liable for costs to complete in excess of such timeframe or budget. While we generally have “guaranteed maximum price” contracts with reputable general contractors with respect to projects for which we provide these guarantees (which are intended to pass most of the risk to such contractors), there can be no assurance that we will not have to perform under any such guarantees. If we are required to perform under a significant number of such guarantees, it could harm our business, results of operations and financial condition.

Because the disposition of a single significant investment can affect our financial performance in any period, our real estate investment activities could cause fluctuations in our net earnings and cash flow. In many cases, we have limited control over the timing of the disposition of these investments and the recognition of any related gain or loss, or incentive participation fee.

Poor performance of the investment programs that our Global Investment Management business manages would cause a decline in our revenue, net income and cash flow and could adversely affect our ability to raise capital for future programs.

The revenue, net income and cash flow generated by our Global Investment Management business can be volatile period over period, primarily due to the fact that management, transaction and incentive fees can vary as a result of market movements from one period to another. In the event that any of the investment programs that our Global Investment Management business manages were to perform poorly, our revenue, net income and cash flow could decline because the value of the assets we manage would decrease, which would result in a reduction in some of our management fees, and our investment returns would decrease, resulting in a reduction in the incentive compensation we earn. Moreover, we could experience losses on co-investments of our own capital in such programs as a result of poor performance. Investors and potential investors in our programs continually assess our performance, and our ability to raise capital for existing and future programs and maintaining our current fee structure will depend on our continued satisfactory performance.

Our debt instruments impose operating and financial restrictions on us, and in the event of a default, all of our borrowings would become immediately due and payable.

We have debt and related debt service obligations. As of December 31, 2018, our total debt, excluding notes payable on real estate (which are generally nonrecourse to us) and warehouse lines of credit (which are recourse only to our wholly-owned subsidiary, CBRE Capital Markets, and are secured by our related warehouse receivables), was \$1.8 billion. For the year ended December 31, 2018, our interest expense was \$107.3 million.

Our debt instruments impose, and the terms of any future debt may impose, operating and other restrictions on us and many of our subsidiaries. These restrictions affect, and in many respects limit or prohibit, our ability to:

- plan for or react to market conditions;
- meet capital needs or otherwise restrict our activities or business plans; and
- finance ongoing operations, strategic acquisitions, investments or other capital needs or to engage in other business activities that would be in our interest, including:
 - incurring or guaranteeing additional indebtedness;
 - entering into consolidations and mergers;
 - creating liens; and
 - entering into sale/leaseback transactions.

Our credit agreement requires us to maintain a minimum interest coverage ratio of consolidated EBITDA (as defined in the credit agreement) to consolidated interest expense (as defined in the credit agreement) of 2.00x and a maximum leverage ratio of total debt (as defined in the credit agreement) less available cash (as defined in the credit agreement) to consolidated EBITDA of 4.25x (and, in the case of the first four full fiscal quarters following the consummation of a qualified acquisition (as defined in the credit agreement), 4.75x) as of the end of each fiscal quarter. On this basis, our coverage ratio of consolidated EBITDA to consolidated interest expense was 20.61x for the year ended December 31, 2018, and our leverage ratio of total debt less available cash to consolidated EBITDA was 0.61x as of December 31, 2018. Our ability to meet these financial ratios can be affected by events beyond our control, and we cannot give assurance that we will be able to meet those ratios when required. We continue to monitor our projected compliance with these financial ratios and other terms of our credit agreement.

A breach of any of these restrictive covenants or the inability to comply with the required financial ratios could result in a default under our debt instruments. If any such default occurs, the lenders under our credit agreement may elect to declare all outstanding borrowings, together with accrued interest and other fees, to be immediately due and payable. The lenders under our credit agreement also have the right in these circumstances to terminate any commitments they have to provide further borrowings. In addition, a default under our credit agreement could trigger a cross default or cross acceleration under our other debt instruments.

In July 2017, the Financial Conduct Authority (the authority that regulates LIBOR) announced it intends to stop compelling banks to submit rates for calculation of LIBOR after 2021. The Alternative Reference Rates Committee (ARRC) has proposed that the Secured Overnight Financing Rate (SOFR) is the rate that represents best practice as the alternative to USD-LIBOR for use in derivatives and other financial contracts that are currently indexed to USD-LIBOR. The ARRC has proposed a paced market transition plan to SOFR from USD-LIBOR and organizations are currently working on industry wide and company specific transition plans as it relates to derivatives and cash markets exposed to USD-LIBOR. We have debt instruments (including our credit agreement) that are indexed to USD-LIBOR and are monitoring this activity and evaluating the related risks.

We have limited restrictions on the amount of additional recourse debt we are able to incur, which may intensify the risks associated with our leverage, including our ability to service our indebtedness. In addition, in the event of a credit-ratings downgrade, our ability to borrow and the costs of such borrowings could be adversely affected.

Subject to the maximum amounts of indebtedness permitted by our credit agreement covenants, we are not restricted in the amount of additional recourse debt we are able to incur, and so we may in the future incur such indebtedness in order to finance our operations and investments. In addition, Moody's Investors Service, Inc. and Standard & Poor's Ratings Services, rate our significant outstanding debt. These ratings, and any downgrades of them, may affect our ability to borrow as well as the costs of our current and future borrowings.

A significant portion of our revenue is seasonal, which could cause our financial results to fluctuate significantly.

A significant portion of our revenue is seasonal. Historically, our revenue, operating income, net income and cash flow from operating activities tend to be lowest in the first calendar quarter, and highest in the fourth calendar quarter of each year. Earnings and cash flow have generally been concentrated in the fourth calendar quarter due to the focus on completing sales, financing and leasing transactions prior to calendar year-end. This variance among periods makes it difficult to compare our financial condition and results of operations on a quarter-by-quarter basis. In addition, as a result of the seasonal nature of our business, political, economic or other unforeseen disruptions occurring in the fourth quarter that impact our ability to close large transactions may have a disproportionate effect on our financial condition and results of operations.

We are subject to various litigation and regulatory risks and may face financial liabilities and/or damage to our reputation as a result of litigation or regulatory proceedings.

Our businesses are exposed to various litigation and regulatory risks. Although we maintain insurance coverage for most of this risk, insurance coverage is unavailable at commercially reasonable pricing for certain types of exposures. Additionally, our insurance policies may not cover us in the event of grossly negligent or intentionally wrongful conduct. Accordingly, an adverse result in a litigation against us, or a lawsuit that results in a substantial legal liability for us (and particularly a lawsuit that is not insured), could have a disproportionate and material adverse effect on our business, financial condition and results of operations. Furthermore, an adverse result in regulatory proceedings, if applicable, could result in fines or other liabilities or adversely impact our operations. In addition, we depend on our business relationships and our reputation for high-caliber professional services to attract and retain clients. As a result, allegations against us, or the announcement of a regulatory investigation involving us, irrespective of the ultimate outcome of that allegation or investigation, may harm our professional reputation and as such materially damage our business and its prospects.

The concentration of business with corporate clients can increase business risk, and our business can be adversely affected due to the loss of certain of these clients.

We value the expansion of business relationships with individual corporate clients because of the increased efficiency and economics that can result from developing recurring business from performing an increasingly broad range of services for the same client. Although our client portfolio is highly diversified, as we grow our business, relationships with certain corporate clients may increase, and our client portfolio may become increasingly concentrated. For example, part of our strategy is to increase our revenues from existing clients which may lead to an increase in corporate clients and therefore greater concentration of revenues. Having increasingly large and concentrated clients also can lead to greater or more concentrated risks if, among other possibilities, any such client (1) experiences its own financial problems; (2) becomes bankrupt or insolvent, which can lead to our failure to be paid for services we have previously provided or funds we have previously advanced; (3) decides to reduce its operations or its real estate facilities; (4) makes a change in its real estate strategy, such as no longer outsourcing its real estate operations; (5) decides to change its providers of real estate services; or (6) mergers with another corporation or otherwise undergoes a change in control, which may result in new management taking over with a different real estate philosophy or in different relationships with other real estate providers.

Additionally, competitive conditions, particularly in connection with increasingly large clients may require us to compromise on certain contract terms with respect to the payment of fees, the extent of risk transfer, acting as principal rather than agent in connection with supplier relationships, liability limitations, credit terms, and other contractual terms, or in connection with disputes or potential litigation. Where competitive pressures result in higher levels of potential liability under our contracts, the cost of operational errors and other activities for which we have indemnified our clients will be greater and may not be fully insured. Where we provide real estate services to firms in the financial services industry, including banks and investment banks, we are experiencing indirectly the increasing extent of the regulatory environment to which they are subject in the aftermath of the global financial crisis. This increases the cost of doing business with them, which we are not always able to pass on, as a result of the additional resources and processes we are required to provide as a critical supplier.

We may be subject to actual or perceived conflicts of interest.

Similar to other global services companies with different business lines and a broad client base, we may be subject to potential actual or perceived conflicts of interests in the provision of our services. For example, conflicts may arise from our position as broker to both owners and tenants in commercial real estate lease transactions. In certain cases, we are also subject to fiduciary obligations to our clients. In such situations, our policies are designed to give full disclosure and transparency to all parties as well as implement appropriate barriers on information-sharing and other activities to ensure each party's interests are protected; however, there can be no assurance that our policies will be successful in every case. If we fail, or appear to fail, to identify, disclose and appropriately address potential conflicts of interest or fiduciary obligations, there could be an adverse effect on our business or reputation regardless of whether any such claims have merit. In addition, it is possible that in some jurisdictions, regulations could be changed to limit our ability to act for certain parties where potential conflicts may exist even with informed consent, which could limit our market share in those markets. There can be no assurance that potential conflicts of interest will not adversely affect us.

Failure to maintain and execute information technology strategies and ensure that our employees adapt to changes in technology could materially and adversely affect our ability to remain competitive in the market.

Our business relies significantly on information technology, including solutions provided by third parties, to deliver services that meet the needs of our clients. If we are unable to effectively execute or maintain our information technology strategies or adopt new technologies and processes relevant to our service platform, our ability to deliver high-quality services may be materially impaired. In addition, we make significant investments in new systems and tools to achieve competitive advantages and efficiencies. Implementation of such investments in information technology could exceed estimated budgets and we may experience challenges that prevent new strategies or technologies from being realized according to anticipated schedules. If we are unable to maintain current information technology and processes or encounter delays, or fail to exploit new technologies, then the execution of our business plans may be disrupted. Similarly, our employees require effective tools and techniques to perform functions integral to our business. Failure to successfully provide such tools and systems, or ensure that employees have properly adopted them, could materially and adversely impact our ability to achieve positive business outcomes.

Failure to maintain the security of our information and technology networks, including personally identifiable and client information, intellectual property and proprietary business information could significantly adversely affect us.

Security breaches and other disruptions of our information and technology networks could compromise our information and intellectual property and expose us to liability, reputational harm and significant remediation costs, which could cause material harm to our business and financial results. In the ordinary course of our business, we collect and store sensitive data, including our proprietary business information and intellectual property, and that of our clients and personally identifiable information of our employees, contractors and vendors, in our data centers and on our networks. The secure processing, maintenance and transmission of this information is critical to our operations.

Although we continue to implement new security measures and regularly conduct employee training, our information technology and infrastructure may nevertheless be vulnerable to cyberattacks by third parties or breached due to employee error, malfeasance or other disruptions. An increasing number of companies that rely on information and technology networks have disclosed breaches of their security, some of which have involved sophisticated and highly targeted attacks on portions of their websites or infrastructure. The techniques used to obtain unauthorized access, disable, or degrade service, or sabotage systems, change frequently, may be difficult to detect, and often are not recognized until launched against a target. To date, we have not yet experienced any cybersecurity breaches that have been material, either individually or in the aggregate. However, there can be no assurance that we will be able to prevent any material events from occurring in the future.

We are subject to numerous laws and regulations designed to protect sensitive information, such as the European Union's General Data Protection Regulation (GDPR), which became effective in May 2018, various U.S. federal and state laws governing the protection of health or other personally identifiable information and data privacy and cybersecurity laws in other regions. These laws and regulations are increasing in complexity and number, change frequently and increasingly conflict among the various countries in which we operate, which has resulted in greater compliance risk and cost for us. The GDPR imposes new compliance obligations regarding the handling of personal data and has significantly increased financial penalties for noncompliance. For example, failure to comply with the GDPR may lead to regulatory enforcement actions, which can result in monetary penalties of up to 4% of worldwide revenues, orders to discontinue certain data processing operations, private lawsuits or reputational damage.

A significant actual or potential theft, loss, corruption, exposure, fraudulent use or misuse of client, employee or other personally identifiable or proprietary business data, whether by third parties or as a result of employee malfeasance or otherwise, non-compliance with our contractual or other legal obligations regarding such data or intellectual property or a violation of our privacy and security policies with respect to such data could result in significant remediation and other costs, fines, litigation or regulatory actions against us. Such an event could additionally disrupt our operations and the services we provide to clients, harm our relationships with contractors and vendors, damage our reputation, result in the loss of a competitive advantage, impact our ability to provide timely and accurate financial data and cause a loss of confidence in our services and financial reporting, which could adversely affect our business, revenues, competitive position and investor confidence. Additionally, we rely on third parties to support our information and technology networks, including cloud storage solution providers, and as a result have less direct control over our data and information technology systems. Such third parties are also vulnerable to security breaches and compromised security systems, for which we may not be indemnified and which could materially adversely affect us and our reputation.

Interruption or failure of our information technology, communications systems or data services could impair our ability to provide our services effectively, which could damage our reputation and materially harm our operating results.

Our business requires the continued operation of information technology and communication systems and network infrastructure. Our ability to conduct our global business may be materially adversely affected by disruptions to these systems or our infrastructure. Our information technology and communications systems are vulnerable to damage or disruption from fire, power loss, telecommunications failure, system malfunctions, computer viruses, cyberattacks, natural disasters such as hurricanes, earthquakes and floods, acts of war or terrorism, employee errors or malfeasance, or other events which are beyond our control. With respect to cyberattacks and viruses, these pose growing threats to many companies, and we have been a target and may continue to be a target of such threats, which could expose us to liability, reputational harm and significant remediation costs and cause material harm to our business and financial results. In addition, the operation and maintenance of these systems and networks is in some cases dependent on third-party technologies, systems and service providers for which there is no certainty of uninterrupted availability. Any of these events could cause system interruption, delays and loss, corruption or exposure of critical data or intellectual property and may also disrupt our ability to provide services to or interact with our clients, contractors and vendors, and we may not be able to successfully implement contingency plans that depend on communication or travel. Furthermore, while we have certain business interruption insurance coverage and various contractual arrangements that can serve to mitigate costs, damages and liabilities, any such event could result in substantial recovery and remediation costs and liability to customers, business partners and other third parties. We have business continuity and disaster recovery plans and backup systems to reduce the potentially adverse effect of such events, but our disaster recovery planning may not be sufficient and cannot account for all eventualities, and a catastrophic event that results in the destruction or disruption of any of our data centers or our critical business or information technology systems could severely affect our ability to conduct normal business operations, and as a result, our future operating results could be materially adversely affected.

Our business relies heavily on the use of commercial real estate data. A portion of this data is purchased or licensed from third-party providers for which there is no certainty of uninterrupted availability. A disruption of our ability to provide data to our professionals and/or our clients or an inadvertent exposure of proprietary data could damage our reputation and competitive position, and our operating results could be adversely affected.

Infrastructure disruptions may disrupt our ability to manage real estate for clients or may adversely affect the value of real estate investments we make on behalf of clients.

The buildings we manage for clients, which include some of the world's largest office properties and retail centers, are used by numerous people daily. As a result, fires, earthquakes, floods, other natural disasters, defects and terrorist attacks can result in significant loss of life, and, to the extent we are held to have been negligent in connection with our management of the affected properties, we could incur significant financial liabilities and reputational harm.

Our results of operations could be adversely affected if we are unable to maintain effective internal controls.

The accuracy of our financial reporting is dependent on the effectiveness of our internal controls. We are required to provide a report from management to our stockholders on the internal controls over financial reporting that includes an assessment of the effectiveness of these controls. Internal controls over financial reporting has inherent limitations, including human error, the possibility that controls could be circumvented or become inadequate because of changed conditions, and fraud. Because of these inherent limitations, internal controls over financial reporting might not prevent or detect all misstatements or fraud. If we cannot maintain and execute adequate internal control over financial reporting or implement required new or improved controls that provide reasonable assurance of the reliability of the financial reporting and preparation of our financial statements for external use, we could suffer harm to our reputation, incur incremental compliance costs, fail to meet our public reporting requirements on a timely basis, be unable to properly report on our business and our results of operations, or be required to restate our financial statements, and our results of operations, our stock price and our ability to obtain new business could be materially adversely affected.

Our goodwill and other intangible assets could become impaired, which may require us to take significant non-cash charges against earnings.

Under current accounting guidelines, we must assess, at least annually and potentially more frequently, whether the value of our goodwill and other intangible assets has been impaired. Any impairment of goodwill or other intangible assets as a result of such analysis would result in a non-cash charge against earnings, and such charge could materially adversely affect our reported results of operations, stockholders' equity and our stock price. A significant and sustained decline in our future cash flows, a significant adverse change in the economic environment, slower growth rates or if our stock price falls below our net book value per share for a sustained period, could result in the need to perform additional impairment analysis in future periods. If we were to conclude that a future write-down of goodwill or other intangible assets is necessary, then we would record such additional charges, which could materially adversely affect our results of operations.

Our businesses, financial condition, results of operations and prospects could be adversely affected by new laws or regulations or by changes in existing laws or regulations or the application thereof. If we fail to comply with laws and regulations applicable to us, or make incorrect determinations in complex tax regimes, we may incur significant financial penalties.

We are subject to numerous federal, state, local and non-U.S. laws and regulations specific to the services we perform in our business. Brokerage of real estate sales and leasing transactions and the provision of property management and valuation services require us and our employees to maintain applicable licenses in each U.S. state and certain non-U.S. jurisdictions in which we perform these services. If we and our employees fail to maintain our licenses or conduct these activities without a license, or violate any of the regulations covering our licenses, we may be required to pay fines (including treble damages in certain states) or return commissions received or have our licenses suspended or revoked. A number of our services, including the services provided by our indirect wholly-owned subsidiaries, CBRE Capital Markets and CBRE Global Investors, are subject to regulation by the SEC, Financial Industry Regulatory Authority, or FINRA, or other self-regulatory organizations and state securities regulators and compliance failures or regulatory action could adversely affect our business. We could be subject to disciplinary or other actions in the future due to claimed noncompliance with these regulations, which could have a material adverse effect on our operations and profitability. We are also subject to laws of broader applicability, such as tax, securities, environmental, employment laws and anti-bribery, anti-money laundering and corruption laws, including the Fair Labor Standards Act, occupational health and safety regulations, U.S. state wage-and-hour laws, the U.S. FCPA and the U.K. Bribery Act. Failure to comply with these requirements could result in the imposition of significant fines by governmental authorities, awards of damages to private litigants and significant amounts paid in legal fees or settlements of these matters.

As the size and scope of our business has increased significantly, both the difficulty of ensuring compliance with numerous licensing and other regulatory requirements and the possible loss resulting from non-compliance have increased. The global economic crisis has resulted in increased government and legislative activities, including the introduction of new legislation and changes to rules and regulations, which we expect will continue into the future. New or revised legislation or regulations applicable to our business, both within and outside of the United States, as well as changes in administrations or enforcement priorities may have an adverse effect on our business, including increasing the costs of regulatory compliance or preventing us from providing certain types of services in certain jurisdictions or in connection with certain transactions or clients. We are unable to predict how any of these new laws, rules, regulations and proposals will be implemented or in what form, or whether any additional or similar changes to laws or regulations, including the interpretation or implementation thereof, will occur in the future. Any such action could affect us in substantial and unpredictable ways and could have an adverse effect on our businesses, financial condition, results of operations and prospects.

We also operate in many jurisdictions with complex and varied tax regimes, and are subject to different forms of taxation resulting in a variable effective tax rate. A number of countries where we do business, including the United States and many countries in the European Union, have implemented, and are considering implementing, changes in relevant tax, accounting and other laws, regulations and interpretations. For example, on December 22, 2017, President Trump signed into law the “Tax Cuts and Jobs Act,” or Tax Act, that significantly reforms the Internal Revenue Code of 1986, as amended. The Tax Act’s “base erosion and anti-abuse tax” provisions, or regulations issued thereunder, could adversely impact our ongoing effective tax rate by imposing taxes on our intercompany transactions and limiting our ability to deduct certain expenses. Our future effective tax rate could also be adversely affected by earnings being lower than anticipated in countries that have lower statutory rates and higher than anticipated in countries that have higher statutory rates, changes in the valuation of our deferred tax assets or liabilities, or changes in tax laws, regulations or accounting principles, as well as certain discrete items. In addition, from time to time we engage in transactions across different tax jurisdictions. Due to the different tax laws in the many jurisdictions where we operate, we are often required to make subjective determinations. The tax authorities in the various jurisdictions where we carry on business may not agree with the determinations that are made by us with respect to the application of tax law. Such disagreements could result in disputes and, ultimately, in the payment of additional funds to the government authorities in the jurisdictions where we carry on business, which could have an adverse effect on our results of operations. In addition, changes in tax rules or the outcome of tax assessments and audits could have an adverse effect on our results in any particular quarter.

We may be subject to environmental liability as a result of our role as a property or facility manager or developer of real estate.

Various laws and regulations impose liability on real property owners or operators for the cost of investigating, cleaning up or removing contamination caused by hazardous or toxic substances at a property. In our role as a property or facility manager or developer, we could be held liable as an operator for such costs. This liability may be imposed without regard to the legality of the original actions and without regard to whether we knew of, or were responsible for, the presence of the hazardous or toxic substances. If we fail to disclose environmental issues, we could also be liable to a buyer or lessee of a property. If we incur any such liability, our business could suffer significantly as it could be difficult for us to develop or sell such properties, or borrow funds using such properties as collateral. In the event of a substantial liability, our insurance coverage might be insufficient to pay the full damages, or the scope of available coverage may not cover certain of these liabilities. Additionally, liabilities incurred to comply with more stringent future environmental requirements could adversely affect any or all of our lines of business.

Cautionary Note on Forward-Looking Statements

This Annual Report on Form 10-K, or Annual Report, includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. The words “anticipate,” “believe,” “could,” “should,” “propose,” “continue,” “estimate,” “expect,” “intend,” “may,” “plan,” “predict,” “project,” “will” and similar terms and phrases are used in this Annual Report to identify forward-looking statements. Except for historical information contained herein, the matters addressed in this Annual Report are forward-looking statements. These statements relate to analyses and other information based on forecasts of future results and estimates of amounts not yet determinable. These statements also relate to our future prospects, developments and business strategies.

These forward-looking statements are made based on our management's expectations and beliefs concerning future events affecting us and are subject to uncertainties and factors relating to our operations and business environment, all of which are difficult to predict and many of which are beyond our control. These uncertainties and factors could cause our actual results to differ materially from those matters expressed in or implied by these forward-looking statements.

The following factors are among those, but are not only those, that may cause actual results to differ materially from the forward-looking statements:

- disruptions in general economic and business conditions, particularly in geographies where our business may be concentrated;
- volatility and disruption of the securities, capital and credit markets, interest rate increases, the cost and availability of capital for investment in real estate, clients' willingness to make real estate or long-term contractual commitments and other factors affecting the value of real estate assets, inside and outside the United States;
- increases in unemployment and general slowdowns in commercial activity;
- trends in pricing and risk assumption for commercial real estate services;
- the effect of significant movements in average cap rates across different property types;
- a reduction by companies in their reliance on outsourcing for their commercial real estate needs, which would affect our revenues and operating performance;
- client actions to restrain project spending and reduce outsourced staffing levels;
- declines in lending activity of U.S. Government Sponsored Enterprises, regulatory oversight of such activity and our mortgage servicing revenue from the commercial real estate mortgage market;
- our ability to diversify our revenue model to offset cyclical economic trends in the commercial real estate industry;
- our ability to attract new user and investor clients;
- our ability to retain major clients and renew related contracts;
- our ability to leverage our global services platform to maximize and sustain long-term cash flow;
- our ability to maintain EBITDA and adjusted EBITDA margins that enable us to continue investing in our platform and client service offerings;
- our ability to control costs relative to revenue growth;
- economic volatility and market uncertainty globally related to the United Kingdom's withdrawal from the European Union, including concerns relating to the economic impact of such withdrawal on businesses within the United Kingdom and Europe;
- foreign currency fluctuations;
- our ability to retain and incentivize key personnel;
- our ability to compete globally, or in specific geographic markets or business segments that are material to us;
- the emergence of disruptive business models and technologies;
- our ability to identify, acquire and integrate synergistic and accretive businesses;
- costs and potential future capital requirements relating to businesses we may acquire;
- integration challenges arising out of companies we may acquire;

- the ability of our Global Investment Management business to maintain and grow assets under management and achieve desired investment returns for our investors, and any potential related litigation, liabilities or reputational harm possible if we fail to do so;
- our ability to manage fluctuations in net earnings and cash flow, which could result from poor performance in our investment programs, including our participation as a principal in real estate investments;
- our leverage under our debt instruments as well as the limited restrictions therein on our ability to incur additional debt, and the potential increased borrowing costs to us from a credit-ratings downgrade;
- the ability of CBRE Capital Markets to periodically amend, or replace, on satisfactory terms, the agreements for its warehouse lines of credit;
- variations in historically customary seasonal patterns that cause our business not to perform as expected;
- litigation and its financial and reputational risks to us;
- our exposure to liabilities in connection with real estate advisory and property management activities and our ability to procure sufficient insurance coverage on acceptable terms;
- liabilities under guarantees, or for construction defects, that we incur in our Development Services business;
- our and our employees' ability to execute on, and adapt to, information technology strategies and trends;
- cybersecurity threats, including the potential misappropriation of assets or sensitive information, corruption of data or operational disruption;
- changes in domestic and international law and regulatory environments (including relating to anti-corruption, anti-money laundering, trade sanctions, tariffs, currency controls and other trade control laws), particularly in Russia, Eastern Europe and the Middle East, due to the level of political instability in those regions;
- our ability to comply with laws and regulations related to our global operations, including real estate licensure, tax, labor and employment laws and regulations, as well as the anti-corruption laws and trade sanctions of the U.S. and other countries;
- negative publicity or actions by our employees, regulators, media, activists, competitors or others that harm our reputation or brand;
- changes in applicable tax or accounting requirements, including the impact of any subsequent additional regulation or guidance associated with the Tax Act (which was enacted into law on December 22, 2017);
- the effect of implementation of new accounting rules and standards (including new lease accounting guidance which became effective in the first quarter of 2019); and
- the other factors described elsewhere in this Annual Report, included under the headings "Risk Factors", "Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies," "Quantitative and Qualitative Disclosures About Market Risk" or as described in the other documents and reports we file with the SEC.

Forward-looking statements speak only as of the date the statements are made. You should not put undue reliance on any forward-looking statements. We assume no obligation to update forward-looking statements to reflect actual results, changes in assumptions or changes in other factors affecting forward-looking information, except to the extent required by applicable securities laws. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements. Additional information concerning these and other risks and uncertainties is contained in our other periodic filings with the SEC.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We occupied the following offices, excluding affiliates, as of December 31, 2018:

	Sales Offices	Corporate Offices	Total
Americas	243	3	246
Europe, Middle East and Africa (EMEA)	153	1	154
Asia Pacific	88	1	89
Total	<u>484</u>	<u>5</u>	<u>489</u>

Some of our offices house employees from our Global Investment Management and Development Services segments as well as employees from our other business segments. We have provided above office totals by geographic region rather than by business segment in order to avoid double counting our Global Investment Management and Development Services offices.

In general, these leased offices are fully utilized. The most significant terms of the leasing arrangements for our offices are the length of the lease and the rent. Our leases have terms varying in duration. The rent payable under our office leases varies significantly from location to location as a result of differences in prevailing commercial real estate rates in different geographic locations. Our management believes that no single office lease is material to our business, results of operations or financial condition. In addition, we believe there is adequate alternative office space available at acceptable rental rates to meet our needs, although adverse movements in rental rates in some markets may negatively affect our profits in those markets when we enter into new leases.

We do not own any of these offices.

Item 3. Legal Proceedings

We are a party to a number of pending or threatened lawsuits arising out of, or incident to, our ordinary course of business. We believe that any losses in excess of the amounts accrued therefor as liabilities on our financial statements are unlikely to be significant, but litigation is inherently uncertain and there is the potential for a material adverse effect on our financial statements if one or more matters are resolved in a particular period in an amount materially in excess of what we anticipated.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Stock Price Information

Our Class A common stock has traded on the New York Stock Exchange under the symbol “CBG” from June 10, 2004 until the change to our new symbol of “CBRE” on March 19, 2018.

As of February 14, 2019, there were 55 stockholders of record of our Class A common stock.

Dividend Policy

We have not declared or paid any cash dividends on any class of our common stock since our inception on February 20, 2001, and we do not anticipate declaring or paying any cash dividends on our common stock in the foreseeable future. We currently intend to retain any future earnings to finance future growth and possibly reduce debt or repurchase common stock. Any future determination to pay cash dividends will be at the discretion of our board of directors and will depend on our financial condition, acquisition or other opportunities to invest capital, results of operations, capital requirements and other factors that the board of directors deems relevant.

Recent Sales of Unregistered Securities

As permitted by our director compensation policy, certain of our non-employee directors elected to receive shares of our Class A common stock as consideration for their service as directors in lieu of cash payments during 2018. Director fees are allocated in quarterly installments, and the non-employee directors participating in the “stock in lieu of cash” program were issued 45 shares on February 13, 2018 in lieu of \$2,000 in accrued director fees, 64 shares on May 7, 2018 in lieu of \$3,000 in accrued director fees and 4,072 shares on August 7, 2018 in lieu of \$202,000 in accrued director fees. The number of shares issued was based on the closing price on the NYSE of our Class A common stock on the date of issuance. The issuance of these securities qualified for an exemption from registration under the Securities Act of 1933, as amended, or the Securities Act, pursuant to Section 4(a)(2) of the Securities Act because the issuance did not involve a public offering.

Issuer Purchases of Equity Securities

Open market share repurchase activity during the three months ended December 31, 2018 was as follows (dollars in thousands, except per share amounts):

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs (1)
October 1, 2018 - October 31, 2018	—	\$ —	—	—
November 1, 2018 - November 30, 2018	932,613	\$ 42.89	932,613	
December 1, 2018 - December 31, 2018	3,048,043	\$ 39.68	3,048,043	
Total	3,980,656	\$ 40.43	3,980,656	\$ 89,046

(1) On October 27, 2016, we announced that our board of directors had authorized the company to repurchase up to an aggregate of \$250.0 million of our Class A common stock over three years, of which \$161.0 million had been utilized as of December 31, 2018. No shares were repurchased prior to October 1, 2018. The remaining \$89.0 million in the table represents the amount available to repurchase shares under the authorized repurchase program as of December 31, 2018.

During January 2019, we repurchased an additional 1,144,449 shares of our Class A common stock in open market transactions at an average price of \$39.38 per share. Additionally, on February 28, 2019, our board of directors authorized a new program for the company to repurchase up to \$300.0 million of our Class A common stock over three years, effective March 11, 2019. The existing program will terminate upon the effectiveness of the new program.

Our repurchase programs do not obligate us to acquire any specific number of shares. Under these programs, shares may be repurchased in privately negotiated and/or open market transactions, including under plans complying with Rule 10b5-1 under the Exchange Act. The timing of any future repurchases and the actual amounts repurchased will depend on a variety of factors, including the market price of our common stock, general market and economic conditions and other factors.

Equity Compensation Plan Information

The following table summarizes information about our equity compensation plans as of December 31, 2018. All outstanding awards relate to our Class A common stock.

	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted-average Exercise Price of Outstanding Options, Warrants and Rights (b)	Number of Securities Remaining Available for Future Issuance under Equity Compensation Plans (Excluding Securities Reflected in Column (a)) (c)
Equity compensation plans approved by security holders (1)	9,535,878	\$ —	3,632,717
Equity compensation plans not approved by security holders	—	—	—
Total	9,535,878	\$ —	3,632,717

(1) Consists of restricted stock units (“RSUs”) issued under our 2017 Equity Incentive Plan (the “2017 Plan”) and our 2012 Equity Incentive Plan (the “2012 Plan”). Our 2012 Plan terminated in May 2017 in connection with the adoption of the 2017 Plan. We cannot issue any further awards under the 2012 Plan.

In addition:

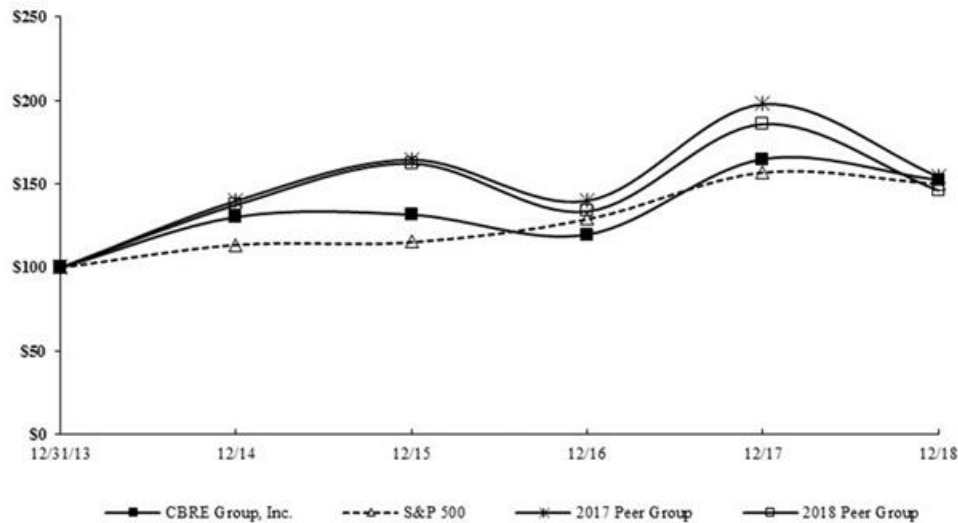
- The figures in the foregoing table include:
 - 5,542,706 RSUs that are performance vesting in nature, with the figures in the table reflecting the maximum number of RSUs that may be issued if all performance-based targets are satisfied and
 - 3,993,172 RSUs that are time vesting in nature.

Stock Performance Graph

The following graph shows our cumulative total stockholder return for the period beginning December 31, 2013 and ending on December 31, 2018. The graph also shows the cumulative total returns of the Standard & Poor’s 500 Stock Index, or S&P 500 Index, in which we are included, and two industry peer groups.

The comparison below assumes \$100 was invested on December 31, 2013 in our Class A common stock and in each of the indices shown and assumes that all dividends were reinvested. Our stock price performance shown in the following graph is not necessarily indicative of future stock price performance. The 2018 industry peer group is comprised of JLL, a global commercial real estate services company publicly traded in the United States, as well as the following companies that have significant commercial real estate or real estate capital markets businesses within the United States or globally, that in each case are publicly traded in the United States or abroad: Colliers International Group Inc. (CIGI), Cushman & Wakefield, Inc. (CWK), HFF, L.P. (HF), ISS A/S (ISS), Marcus & Millichap, Inc. (MMI), Newmark Group Inc. (NMRK), Savills plc (SVS.L, traded on the London Stock Exchange) and Walker & Dunlop, Inc. (WD). These companies are or include divisions with business lines reasonably comparable to some or all of ours, and which represent our current primary competitors. The 2017 peer group did not include CWK, which was added to our peer group in 2018. In addition, the 2017 peer group included BGC Partners (BGCP), which is the publicly traded parent of Newmark Grubb Knight Frank. In 2018, we elected to remove BGCP from our peer group and replace it with NMRK.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN ⁽¹⁾
 AMONG CBRE GROUP, INC., THE S&P 500 INDEX⁽²⁾,
 A 2017 PEER GROUP AND A 2018 PEER GROUP



Indices	12/31/13	12/14	12/15	12/16	12/17	12/18
CBRE Group, Inc.	100.00	130.23	131.48	119.73	164.68	152.24
S&P 500	100.00	113.69	115.26	129.05	157.22	150.33
2017 Peer Group	100.00	140.03	164.66	140.11	198.02	154.72
2018 Peer Group	100.00	137.61	162.31	133.66	185.92	146.27

(1) \$100 invested on 12/31/13 in stock or index-including reinvestment of dividends. Fiscal year ending December 31.

(2) Copyright© 2019 Standard & Poor's, a division of S&P Global. All rights reserved.

This graph shall not be deemed incorporated by reference by any general statement incorporating by reference this Annual Report on Form 10-K into any filing under the Securities Act or under the Exchange Act, except to the extent that we specifically incorporate this information by reference therein, and shall not otherwise be deemed filed under the Securities Act or under the Exchange Act.

Item 6. Selected Financial Data

The following table sets forth our selected historical consolidated financial information for each of the five years in the period ended December 31, 2018. The statement of operations data, the statement of cash flows data and the other data for the years ended December 31, 2018, 2017 and 2016 and the balance sheet data as of December 31, 2018 and 2017 were derived from our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K (Annual Report). The statement of operations data, the statement of cash flows data and the other data for the years ended December 31, 2015 and 2014, and the balance sheet data as of December 31, 2016, 2015 and 2014 were derived from our audited consolidated financial statements that are not included in this Annual Report.

The selected financial data presented below is not necessarily indicative of results of future operations and should be read in conjunction with our consolidated financial statements and the information included under the headings “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included elsewhere in this Annual Report (dollars in thousands, except share data).

	Year Ended December 31,				
	2018	2017 (1)	2016 (1)	2015 (2)	2014
		(As Adjusted)	(As Adjusted)		
STATEMENTS OF OPERATIONS DATA:					
Revenue	\$ 21,340,088	\$ 18,628,787	\$ 17,369,108	\$ 10,855,810	\$ 9,049,918
Operating income	1,087,989	1,078,682	816,831	835,944	792,254
Interest income	8,585	9,853	8,051	6,311	6,233
Interest expense	107,270	136,814	144,851	118,880	112,035
Write-off of financing costs on extinguished debt	27,982	—	—	2,685	23,087
Net income	1,065,948	703,576	585,170	558,877	513,503
Net income attributable to non-controlling interests	2,729	6,467	12,091	11,745	29,000
Net income attributable to CBRE Group, Inc.	1,063,219	697,109	573,079	547,132	484,503
Income per share attributable to CBRE Group, Inc. (3):					
Basic income per share	\$ 3.13	\$ 2.06	\$ 1.71	\$ 1.64	\$ 1.47
Diluted income per share	3.10	2.05	1.69	1.63	1.45
Weighted average shares:					
Basic	339,321,056	337,658,017	335,414,831	332,616,301	330,620,206
Diluted	343,122,741	340,783,556	338,424,563	336,414,856	334,171,509
STATEMENTS OF CASH FLOWS DATA (4):					
Net cash provided by operating activities	\$ 1,131,249	\$ 894,411	\$ 616,985	\$ 651,897	\$ 661,780
Net cash used in investing activities	(560,684)	(302,600)	(150,524)	(1,618,959)	(151,556)
Net cash (used in) provided by financing activities	(506,600)	(627,742)	(220,677)	789,548	(232,069)
OTHER DATA:					
EBITDA (5)	\$ 1,954,932	\$ 1,697,941	\$ 1,373,706	\$ 1,297,335	\$ 1,142,252
Adjusted EBITDA (5)	1,905,168	1,716,774	1,562,347	1,412,724	1,166,125
BALANCE SHEET DATA:					
Cash and cash equivalents	\$ 777,219	\$ 751,774	\$ 762,576	\$ 540,403	\$ 740,884
Total assets (6)	13,456,793	11,718,396	10,994,338	11,017,943	7,568,010
Long-term debt, including current portion, net (6)	1,770,406	1,999,611	2,548,137	2,679,539	1,851,012
Notes payable on real estate, net (6)	6,304	17,872	25,969	38,258	41,445
Total liabilities (6)	8,446,891	7,543,782	7,848,438	8,258,873	5,266,612
Total CBRE Group, Inc. stockholders' equity	4,938,797	4,114,496	3,103,142	2,712,652	2,259,830

Note: We have not declared any cash dividends on common stock for the periods shown.

- (1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 of our Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report. Amounts for the years ended December 31, 2015 and 2014 have not been restated to conform with the presentation for the years ended December 31, 2018, 2017 and 2016.
- (2) On September 1, 2015, CBRE, Inc., our wholly-owned subsidiary, closed on a Stock and Asset Purchase Agreement with Johnson Controls, Inc. (JCI) to acquire JCI's Global Workplace Solutions (JCI-GWS) business (which we refer to as the GWS Acquisition). The results for the year ended December 31, 2015 include the operations of JCI-GWS from September 1, 2015, the date such business was acquired.
- (3) See Income Per Share information in Note 16 of our Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

(4) In the first quarter of 2018, we adopted Accounting Standards Updated (ASU) 2016-15, “*Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments.*” Certain reclassifications have been made to the 2017 and 2016 statements of cash flows to conform with the 2018 presentation. Amounts for the years ended December 31, 2015 and 2014 have not been reclassified to conform with the presentation for the years ended December 31, 2018, 2017 and 2016.

(5) EBITDA and adjusted EBITDA are not recognized measurements under accounting principles generally accepted in the United States, or GAAP. When analyzing our operating performance, investors should use these measures in addition to, and not as an alternative for, their most directly comparable financial measure calculated and presented in accordance with GAAP. We generally use these non-GAAP financial measures to evaluate operating performance and for other discretionary purposes. We believe these measures provide a more complete understanding of ongoing operations, enhance comparability of current results to prior periods and may be useful for investors to analyze our financial performance because they eliminate the impact of selected charges that may obscure trends in the underlying performance of our business. Because not all companies use identical calculations, our presentation of EBITDA and adjusted EBITDA may not be comparable to similarly titled measures of other companies.

EBITDA represents earnings before net interest expense, write-off of financing costs on extinguished debt, income taxes, depreciation and amortization. Amounts shown for adjusted EBITDA further remove (from EBITDA) the impact of certain cash and non-cash items related to acquisitions, costs associated with our reorganization, including cost-savings initiatives, cost-elimination expenses, certain carried interest incentive compensation (reversal) expense to align with the timing of associated revenue and other non-recurring costs. We believe that investors may find these measures useful in evaluating our operating performance compared to that of other companies in our industry because their calculations generally eliminate the effects of acquisitions, which would include impairment charges of goodwill and intangibles created from acquisitions, the effects of financings and income taxes and the accounting effects of capital spending.

EBITDA and adjusted EBITDA are not intended to be measures of free cash flow for our discretionary use because they do not consider certain cash requirements such as tax and debt service payments. These measures may also differ from the amounts calculated under similarly titled definitions in our debt instruments, which amounts are further adjusted to reflect certain other cash and non-cash charges and are used by us to determine compliance with financial covenants therein and our ability to engage in certain activities, such as incurring additional debt and making certain restricted payments. We also use adjusted EBITDA as a significant component when measuring our operating performance under our employee incentive compensation programs.

EBITDA and adjusted EBITDA are calculated as follows (dollars in thousands):

	Year Ended December 31,				
	2018	2017	2016	2015	2014
		(As Adjusted) (1)	(As Adjusted) (1)		
Net income attributable to CBRE Group, Inc.	\$ 1,063,219	\$ 697,109	\$ 573,079	\$ 547,132	\$ 484,503
Add:					
Depreciation and amortization	451,988	406,114	366,927	314,096	265,101
Interest expense	107,270	136,814	144,851	118,880	112,035
Write-off of financing costs on extinguished debt	27,982	—	—	2,685	23,087
Provision for income taxes	313,058	467,757	296,900	320,853	263,759
Less:					
Interest income	8,585	9,853	8,051	6,311	6,233
EBITDA	1,954,932	1,697,941	1,373,706	1,297,335	1,142,252
Adjustments:					
Costs associated with our reorganization, including cost-savings initiatives (i)	37,925	—	—	—	—
Integration and other costs related to acquisitions	9,124	27,351	125,743	48,865	—
Costs incurred in connection with litigation settlement	8,868	—	—	—	—
Carried interest incentive compensation (reversal) expense to align with the timing of associated revenue	(5,261)	(8,518)	(15,558)	26,085	23,873
One-time gain associated with remeasuring an investment in an unconsolidated subsidiary to fair value as of the date the remaining controlling interest was acquired	(100,420)	—	—	—	—
Cost-elimination expenses	—	—	78,456	40,439	—
Adjusted EBITDA	<u>\$ 1,905,168</u>	<u>\$ 1,716,774</u>	<u>\$ 1,562,347</u>	<u>\$ 1,412,724</u>	<u>\$ 1,166,125</u>

(i) Primarily represents severance costs related to headcount reductions in connection with our reorganization announced in the third quarter of 2018 that became effective January 1, 2019.

(6) In the third quarter of 2015, we elected to early adopt the provisions of ASU 2015-03, “*Interest – Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs.*” This ASU required that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct deduction from the carrying amount of that debt liability instead of separately being recorded in other assets. As of December 31, 2014, deferred financing costs totaling \$25.6 million were reclassified from other assets and netted against the related debt liabilities to conform with the 2015 presentation.

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

Overview

We are the world's largest commercial real estate services and investment firm, based on 2018 revenue, with leading global market positions in our leasing, property sales, occupier outsourcing and valuation businesses. As of December 31, 2018, we operated in more than 480 offices worldwide with over 90,000 employees, excluding independent affiliates.

Our business is focused on providing services to both occupiers of and investors in real estate. For occupiers, we provide facilities management, project management, transaction (both property sales and tenant leasing) and consulting services, among others. For investors, we provide capital markets (property sales, commercial mortgage brokerage, loan origination and servicing), leasing, investment management, property management, valuation and development services, among others. We provide commercial real estate services under the "CBRE" brand name, investment management services under the "CBRE Global Investors" brand name and development services under the "Trammell Crow Company" brand name.

Our revenue mix has shifted in recent years toward more contractual revenue as occupiers and investors increasingly prefer to purchase integrated, account-based services from firms that meet the full spectrum of their needs nationally and globally. We believe we are well-positioned to capture a growing share of this business. We generate revenue from both management fees (large multi-year portfolio and per-project contracts) and commissions on transactions. Our contractual, fee-for-services businesses generally involve occupier outsourcing (including facilities and project management), property management, investment management, appraisal/valuation and loan servicing. In addition, our leasing services business line is largely recurring in nature over time.

In 2018, we generated revenue from a highly diversified base of clients, including more than 90 of the *Fortune* 100 companies. We have been an *S&P* 500 company since 2006 and in 2018 we were ranked #207 on the *Fortune* 500. We have been voted the most recognized commercial real estate brand in the *Lipsey Company* survey for 18 years in a row (including 2019). We have also been rated a World's Most Ethical Company by the *Ethisphere Institute* for six consecutive years.

Critical Accounting Policies

Our consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States, or GAAP, which require us to make estimates and assumptions that affect reported amounts. The estimates and assumptions are based on historical experience and on other factors that we believe to be reasonable. Actual results may differ from those estimates. We believe that the following critical accounting policies represent the areas where more significant judgments and estimates are used in the preparation of our consolidated financial statements.

Revenue Recognition

To recognize revenue in a transaction with a customer, we evaluate the five steps of the Accounting Standards Codification Topic 606 revenue recognition framework: (1) identify the contract; (2) identify the performance obligations(s) in the contract; (3) determine the transaction price; (4) allocate the transaction price to the performance obligation(s) and (5) recognize revenue when (or as) the performance obligations are satisfied.

Our revenue recognition policies are consistent with this five step framework. Understanding the complex terms of agreements and determining the appropriate time, amount, and method to recognize revenue for each transaction requires significant judgement. These significant judgements include: (i) determining what point in time or what measure of progress depicts the transfer of control to the customer; (ii) applying the series guidance to certain performance obligations satisfied over time; (iii) estimating how and when contingencies, or other forms of variable consideration, will impact the timing and amount of recognition of revenue and (iv) determining whether we control third party services before they are transferred to the customer in order to appropriately recognize the associated fees on either a gross or net basis. The timing and amount of revenue recognition in a period could vary if different judgments were made. Our revenues subject to the most judgment are brokerage commission revenue, incentive-based management fees, development fees and third party fees associated with our occupier outsourcing and property management services. For a detailed discussion of our revenue recognition policies, see the Revenue Recognition section within Note 2 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report on Form 10-K, or this Annual Report.

Goodwill and Other Intangible Assets

Our acquisitions require the application of purchase accounting, which results in tangible and identifiable intangible assets and liabilities of the acquired entity being recorded at fair value. The difference between the purchase price and the fair value of net assets acquired is recorded as goodwill. In determining the fair values of assets and liabilities acquired in a business combination, we use a variety of valuation methods including present value, depreciated replacement cost, market values (where available) and selling prices less costs to dispose. We are responsible for determining the valuation of assets and liabilities and for the allocation of purchase price to assets acquired and liabilities assumed.

Assumptions must often be made in determining fair values, particularly where observable market values do not exist. Assumptions may include discount rates, growth rates, cost of capital, royalty rates, tax rates and remaining useful lives. These assumptions can have a significant impact on the value of identifiable assets and accordingly can impact the value of goodwill recorded. Different assumptions could result in different values being attributed to assets and liabilities. Since these values impact the amount of annual depreciation and amortization expense, different assumptions could also impact our statement of operations and could impact the results of future asset impairment reviews.

We are required to test goodwill and other intangible assets deemed to have indefinite useful lives for impairment at least annually, or more often if circumstances or events indicate a change in the impairment status, in accordance with the “*Intangibles – Goodwill and Other*” Topic of the Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, (Topic 350). We have the option to perform a qualitative assessment with respect to any of our reporting units to determine whether a quantitative impairment test is needed. We are permitted to assess based on qualitative factors whether it is more likely than not that a reporting unit’s fair value is less than its carrying amount before applying the quantitative goodwill impairment test. If it is more likely than not that the fair value of a reporting unit is less than its carrying amount, we would conduct a quantitative goodwill impairment test. If not, we do not need to apply the quantitative test. The qualitative test is elective and we can go directly to the quantitative test rather than making a more-likely-than-not assessment based on an evaluation of qualitative factors. When performing a quantitative test, we use a discounted cash flow approach to estimate the fair value of our reporting units. Management’s judgment is required in developing the assumptions for the discounted cash flow model. These assumptions include revenue growth rates, profit margin percentages, discount rates, etc. Due to the many variables inherent in the estimation of a business’s fair value and the relative size of our goodwill, if different assumptions and estimates were used, it could have an adverse effect on our impairment analysis.

For additional information on goodwill and intangible asset impairment testing, see Notes 2 and 9 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

Income Taxes

Income taxes are accounted for under the asset and liability method in accordance with the “*Accounting for Income Taxes*,” Topic of the FASB ASC (Topic 740). Deferred tax assets and liabilities are determined based on temporary differences between the financial reporting and tax basis of assets and liabilities and operating loss and tax credit carry forwards. Deferred tax assets and liabilities are measured by applying enacted tax rates and laws and are released in the years in which the temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Valuation allowances are provided against deferred tax assets when it is more likely than not that some portion or all of the deferred tax asset will not be realized.

Accounting for tax positions requires judgments, including estimating reserves for potential uncertainties. We also assess our ability to utilize tax attributes, including those in the form of carryforwards, for which the benefits have already been reflected in the financial statements. We do not record valuation allowances for deferred tax assets that we believe will be realized in future periods. While we believe the resulting tax balances as of December 31, 2018 and 2017 are appropriately accounted for in accordance with Topic 740, as applicable, the ultimate outcome of such matters could result in favorable or unfavorable adjustments to our consolidated financial statements and such adjustments could be material.

On December 22, 2017, the Tax Cuts and Jobs Act (the Tax Act) was signed into law making significant changes to the Internal Revenue Code, including, but not limited to:

- a U.S. corporate tax rate decrease from 35% to 21%, effective for tax years beginning after December 31, 2017;
- the transition of U.S. international taxation from a worldwide tax system to a territorial system; and
- a one-time transition tax (i.e. toll charge) on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017 at an income tax rate of 15.5% to the extent such cumulative earnings were attributable to foreign cash and certain other net current assets, and 8% on the remainder.

In December 2017, the Securities and Exchange Commission (SEC) staff issued Staff Accounting Bulletin No. 118 (SAB 118), “*Income Tax Accounting Implications of the Tax Cuts and Jobs Act*,” which allowed us to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. In March 2018, the Financial Accounting Standards Board (FASB) issued ASU 2018-05, “*Income Taxes (Topic 740): Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118*,” which added SEC guidance related to SAB 118.

Our provision for income taxes for 2017 included a net expense of \$143.4 million attributable to the Tax Act, including a provisional amount representing our estimate of the U.S. federal and state tax impact of the transition tax on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017. During 2018, we continued to analyze the impact of the Tax Act and interpreted the additional guidance issued by the U.S. Treasury Department, the Internal Revenue Service, and other standard-setting bodies. Our provision for income taxes for 2018 included a net expense true-up of \$13.3 million associated with the Tax Act based upon our final analysis. As of December 31, 2018, we have completed our analysis and the final net expense associated with the Tax Act was \$156.7 million.

Our future effective tax rate could be adversely affected by earnings being lower than anticipated in countries that have lower statutory rates and higher than anticipated in countries that have higher statutory rates, changes in the valuation of our deferred tax assets or liabilities, or changes in tax laws, regulations, or accounting principles, as well as certain discrete items.

Our foreign subsidiaries have accumulated \$2.1 billion of undistributed earnings for which we have not recorded a deferred tax liability. No additional income taxes have been provided for any remaining undistributed foreign earnings not subject to the transition tax, in connection with the enactment of the Tax Act, or any additional outside basis difference inherent in these entities, as these amounts continue to be indefinitely reinvested in foreign operations. While federal and state current income tax expense has been recognized as a result of the Tax Act, we have not provided any additional deferred taxes with respect to items such as foreign withholding taxes, state income tax or foreign exchange gain or loss that would be due when cash is actually repatriated to the U.S. because those foreign earnings are considered permanently reinvested in the business or may be remitted substantially free of any additional local taxes. The determination of the amount of the unrecognized deferred tax liability related to the undistributed earnings if eventually remitted is not practicable.

See Note 14 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report for further information regarding income taxes.

New Accounting Pronouncements

See New Accounting Pronouncements discussion within Note 3 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

Seasonality

A significant portion of our revenue is seasonal, which an investor should keep in mind when comparing our financial condition and results of operations on a quarter-by-quarter basis. Historically, our revenue, operating income, net income and cash flow from operating activities tend to be lowest in the first quarter, and highest in the fourth quarter of each year. Revenue, earnings and cash flow have generally been concentrated in the fourth calendar quarter due to the focus on completing sales, financing and leasing transactions prior to year-end.

Inflation

Our commissions and other variable costs related to revenue are primarily affected by commercial real estate market supply and demand, which may be affected by inflation. However, to date, we do not believe that general inflation has had a material impact upon our operations.

Items Affecting Comparability

When you read our financial statements and the information included in this Annual Report, you should consider that we have experienced, and continue to experience, several material trends and uncertainties that have affected our financial condition and results of operations that make it challenging to predict our future performance based on our historical results. We believe that the following material trends and uncertainties are crucial to an understanding of the variability in our historical earnings and cash flows and the potential for continued variability in the future.

Macroeconomic Conditions

Economic trends and government policies affect global and regional commercial real estate markets as well as our operations directly. These include: overall economic activity and employment growth; interest rate levels and changes in interest rates; the cost and availability of credit; and the impact of tax and regulatory policies. Periods of economic weakness or recession, significantly rising interest rates, fiscal uncertainty, declining employment levels, decreasing demand for commercial real estate, falling real estate values, disruption to the global capital or credit markets, or the public perception that any of these events may occur, will negatively affect the performance of our business.

Compensation is our largest expense and our sales and leasing professionals generally are paid on a commission and/or bonus basis that correlates with their revenue production. As a result, the negative effect of difficult market conditions on our operating margins is partially mitigated by the inherent variability of our compensation cost structure. In addition, when negative economic conditions have been particularly severe, we have moved decisively to lower operating expenses to improve financial performance, and then have restored certain expenses as economic conditions improved. Nevertheless, adverse global and regional economic trends could pose significant risks to the performance of our operations and our financial condition.

Commercial real estate markets in the United States have generally been marked by increased demand for space, falling vacancies and higher rents since 2010. During this time, healthy U.S. property sales activity has been sustained by gradually improving market fundamentals, including higher occupancy rates and rents, broad, low-cost credit availability and increased institutional capital allocations to commercial real estate. Following years of strong growth, U.S. property sales volumes slowed in 2016 and 2017, but improved in 2018 as significant capital continues to target commercial real estate, and the availability of relatively low-cost financing remains plentiful. The market for commercial real estate leasing has also remained strong, reflecting healthy economic and employment growth.

European countries began to emerge from recession in 2013, with economic growth improving in 2017 and 2018. Sales and leasing activity have also generally improved across most of Europe in the past three years. While leasing demand has remained solid, sales market volumes were relatively flat in 2018. Since the United Kingdom's June 2016 referendum to leave the European Union (EU), economic and property market performance has been solid, with lease volumes up in 2018, while investment volumes declined slightly. However, the continued absence of any legislation confirming the terms on which the UK will leave the EU as the March 2019 deadline draws closer has contributed to increased uncertainty and could adversely affect lease and sales volumes in 2019.

In Asia Pacific, real estate leasing and investment markets have been active since late 2016. While leasing activity continued to grow solidly in 2018, investment levels cooled in 2018 as investors became more cautious. However, Asia Pacific investors remain a significant source of real estate investment both in the region and across other parts of the world.

Real estate investment management and property development markets have been generally favorable with abundant debt and equity capital flows into commercial real estate. Actively managed real estate equity strategies have been pressured by a shift in investor preferences from active to passive portfolio strategies and concerns about higher interest rates.

The performance of our global real estate services and real estate investment businesses depends on sustained economic growth and job creation; stable, healthy global credit markets; and continued positive business and investor sentiment.

Effects of Acquisitions

We historically have made significant use of strategic acquisitions to add and enhance service competencies around the world. For example, on September 1, 2015, CBRE, Inc., our wholly-owned subsidiary, pursuant to a Stock and Asset Purchase Agreement with Johnson Controls, Inc. (JCI), acquired JCI's Global Workplace Solutions (JCI-GWS) business (which we refer to as the GWS Acquisition). The acquired JCI-GWS business was a market-leading provider of integrated facilities management solutions for major occupiers of commercial real estate and had significant operations around the world. The purchase price was \$1.475 billion, paid in cash, plus adjustments totaling \$46.5 million for working capital and other items. We completed the GWS Acquisition in order to advance our strategy of delivering globally integrated services to major occupiers in our Americas, EMEA and Asia Pacific segments. We merged the acquired JCI-GWS business with our existing occupier outsourcing business line, which adopted the "Global Workplace Solutions" name.

Additionally, on June 12, 2018, CBRE Jason Acquisition LLC (Merger Sub), our wholly-owned subsidiary, and FacilitySource Holdings, LLC (FacilitySource), WP X Finance, LP and Warburg Pincus X Partners, LP (collectively, the Stockholders) entered into a stock purchase agreement and plan of merger (the Merger Agreement). As part of the Merger Agreement, (i) we purchased from the Stockholders all the outstanding shares of capital stock of FS WP Holdco, Inc (Blocker Corp), which owned 1,686,013 Class A units (the Blocker Units) and (ii) immediately following the acquisition of Blocker Corp, Merger Sub merged with FacilitySource, with FacilitySource continuing as the surviving company and our wholly-owned subsidiary within our Americas segment (the FacilitySource Acquisition), with the remaining Blocker Units not held by Blocker Corp. canceled and converted into the right to receive cash consideration as set forth in the Merger Agreement. The estimated net initial purchase price was approximately \$266.5 million, with \$263.0 million paid in cash. We financed the transaction with cash on hand and borrowings under our revolving credit facility. We completed the FacilitySource Acquisition to help us (i) build a tech-enabled supply chain capability for the occupier outsourcing industry and (ii) drive meaningfully differentiated outcomes for leading occupiers of real estate.

Strategic in-fill acquisitions have also played a key role in strengthening our service offerings. The companies we acquired have generally been regional or specialty firms that complement our existing platform, or independent affiliates in which, in some cases, we held a small equity interest. During 2018, we acquired a retail leasing and property management firm in Australia, two firms in Israel (our former affiliate and a majority interest in a local facilities management provider), a commercial real estate services provider in San Antonio, a provider of real estate and facilities consulting services to healthcare companies across the United States and the remaining 50% equity interest in our longstanding New England joint venture.

During 2017, we completed 11 in-fill acquisitions, including two leading Software as a Service (SaaS) platforms – one that produces scalable interactive visualization technologies for commercial real estate and one that provides technology solutions for facilities management operations, a healthcare-focused project manager in Australia, a full-service brokerage and management boutique in South Florida, a technology-enabled national boutique commercial real estate finance and consulting firm in the United States, a retail consultancy in France, a majority interest in a Toronto-based investment management business specializing in private infrastructure and private equity investments, a San Francisco-based technology-focused boutique real estate brokerage firm, a project management and design engineering firm operating across the United States, a Washington, D.C.-based retail brokerage operation and a leading technical engineering services provider in Italy.

We believe that strategic acquisitions can significantly decrease the cost, time and commitment of management resources necessary to attain a meaningful competitive position within targeted markets or to expand our presence within our current markets. In general, however, most acquisitions will initially have an adverse impact on our operating and net income as a result of transaction-related expenditures. These include severance, lease termination, transaction and deferred financing costs, among others, and the charges and costs of integrating the acquired business and its financial and accounting systems into our own.

Our acquisition structures often include deferred and/or contingent purchase price payments in future periods that are subject to the passage of time or achievement of certain performance metrics and other conditions. As of December 31, 2018, we have accrued deferred consideration totaling \$136.3 million, which is included in accounts payable and accrued expenses and in other long-term liabilities in the accompanying consolidated balance sheets set forth in Item 8 of this Annual Report.

International Operations

We are monitoring the economic and political developments related to the United Kingdom's referendum to leave the European Union and the potential impact on our businesses in the United Kingdom and the rest of Europe, including, in particular, sales and leasing activity in the United Kingdom, as well as any associated currency volatility impact on our results of operations.

As we continue to increase our international operations through either acquisitions or organic growth, fluctuations in the value of the U.S. dollar relative to the other currencies in which we may generate earnings could adversely affect our business, financial condition and operating results. Our Global Investment Management business has a significant amount of euro-denominated assets under management, or AUM, as well as associated revenue and earnings in Europe. In addition, our Global Workplace Solutions business also has a significant amount of its revenue and earnings denominated in foreign currencies, such as the euro and the British pound sterling. Fluctuations in foreign currency exchange rates have resulted and may continue to result in corresponding fluctuations in our AUM, revenue and earnings.

During the year ended December 31, 2018, approximately 43% of our business was transacted in non-U.S. dollar currencies, the majority of which included the Australian dollar, Brazilian real, British pound sterling, Canadian dollar, Chinese yuan, Czech koruna, Danish krone, euro, Hong Kong dollar, Indian rupee, Israeli shekel, Japanese yen, Korean won, Mexican peso, New Zealand dollar, Polish zloty, Singapore dollar, Swedish krona, Swiss franc and Thai baht. The following table sets forth our revenue derived from our most significant currencies (U.S. dollars in thousands):

	Year Ended December 31,					
	2018		2017		2016	
			(As Adjusted) (1)		(As Adjusted) (1)	
United States dollar	\$ 12,264,188	57.5 %	\$ 10,954,608	58.8 %	\$ 10,434,782	60.1 %
British pound sterling	2,586,890	12.1 %	2,242,973	12.1 %	2,150,428	12.4 %
euro	2,329,832	10.9 %	1,740,764	9.3 %	1,612,521	9.3 %
Canadian dollar	717,692	3.3 %	617,923	3.3 %	532,203	3.1 %
Australian dollar	482,749	2.3 %	467,623	2.5 %	408,772	2.4 %
Indian rupee	418,390	2.0 %	370,705	2.0 %	285,459	1.6 %
Chinese yuan	303,600	1.4 %	244,717	1.3 %	218,999	1.2 %
Japanese yen	277,636	1.3 %	269,835	1.4 %	259,007	1.5 %
Singapore dollar	268,193	1.3 %	256,319	1.4 %	198,816	1.1 %
Swiss franc	182,641	0.9 %	153,078	0.8 %	154,463	0.9 %
Brazilian real	174,728	0.8 %	198,270	1.1 %	139,409	0.8 %
Hong Kong dollar	169,449	0.8 %	148,174	0.8 %	133,283	0.8 %
Mexican peso	135,187	0.6 %	115,812	0.6 %	99,723	0.6 %
Polish zloty	90,343	0.4 %	71,849	0.4 %	74,199	0.4 %
Danish krone	81,804	0.4 %	82,061	0.4 %	69,676	0.4 %
Thai baht	79,373	0.4 %	65,553	0.4 %	62,947	0.3 %
Swedish krona	70,471	0.3 %	71,849	0.4 %	74,199	0.4 %
New Zealand dollar	63,251	0.3 %	51,353	0.3 %	45,219	0.3 %
Korean won	59,912	0.3 %	48,475	0.3 %	44,520	0.3 %
Israeli shekel	57,779	0.3 %	22,628	0.1 %	27,648	0.2 %
Czech koruna	54,986	0.3 %	42,008	0.2 %	34,261	0.2 %
Other currencies	470,994	2.1 %	392,210	2.1 %	308,574	1.7 %
Total revenue	\$ 21,340,088	100.0 %	\$ 18,628,787	100.0 %	\$ 17,369,108	100.0 %

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report for more information.

Although we operate globally, we report our results in U.S. dollars. As a result, the strengthening or weakening of the U.S. dollar may positively or negatively impact our reported results. For example, we estimate that had the British pound sterling-to-U.S. dollar exchange rates been 10% higher during the year ended December 31, 2018, the net impact would have been an increase in pre-tax income of \$4.1 million. Had the euro-to-U.S. dollar exchange rates been 10% higher during the year ended December 31, 2018, the net impact would have been an increase in pre-tax income of \$9.5 million. These hypothetical calculations estimate the impact of translating results into U.S. dollars and do not include an estimate of the impact that a 10% change in the U.S. dollar against other currencies would have had on our foreign operations.

From time to time, we have entered into derivative financial instruments to attempt to protect the value or fix the amount of certain obligations in terms of our reporting currency, the U.S. dollar. In March 2014, we began a foreign currency exchange forward hedging program by entering into foreign currency exchange forward contracts, including agreements to buy U.S. dollars and sell Australian dollars, British pound sterling, Canadian dollars, euros and Japanese yen. The purpose of these forward contracts was to attempt to mitigate the risk of fluctuations in foreign currency exchange rates that would adversely impact some of our foreign currency denominated EBITDA. Hedge accounting was not elected for any of these contracts. As such, changes in the fair values of these contracts were recorded directly in earnings. As of December 31, 2018 and 2017, we had no foreign currency exchange forward contracts outstanding as we made the decision to let our program expire at the end of 2016. Included in the consolidated statement of operations set forth in Item 8 of this Annual Report was a net gain of \$7.7 million from foreign currency exchange forward contracts for the year ended December 31, 2016. We do not intend to hedge our foreign currency denominated EBITDA in 2019.

Due to the constantly changing currency exposures to which we are subject and the volatility of currency exchange rates, we cannot predict the effect of exchange rate fluctuations upon future operating results. In addition, fluctuations in currencies relative to the U.S. dollar may make it more difficult to perform period-to-period comparisons of our reported results of operations. Our international operations also are subject to, among other things, political instability and changing regulatory environments, which affects the currency markets and which as a result may adversely affect our future financial condition and results of operations. We routinely monitor these risks and related costs and evaluate the appropriate amount of oversight to allocate towards business activities in foreign countries where such risks and costs are particularly significant.

Results of Operations

The following table sets forth items derived from our consolidated statements of operations for the years ended December 31, 2018, 2017 and 2016 (dollars in thousands):

	Year Ended December 31,					
	2018		2017		2016	
			(As Adjusted) (1)		(As Adjusted) (1)	
Revenue:						
Fee revenue (1):						
Occupier outsourcing	\$ 3,040,949	14.2 %	\$ 2,526,069	13.6 %	\$ 2,279,963	13.1 %
Property management	605,387	2.8 %	555,076	3.0 %	505,086	2.9 %
Valuation	560,815	2.6 %	527,638	2.8 %	504,370	2.9 %
Loan servicing	183,421	0.9 %	157,449	0.8 %	122,517	0.7 %
Investment management	434,405	2.0 %	377,644	2.0 %	369,800	2.1 %
Leasing	3,375,558	15.8 %	2,863,352	15.4 %	2,651,986	15.3 %
Capital Markets:						
Sales	1,919,140	9.0 %	1,806,313	9.7 %	1,700,503	9.8 %
Commercial mortgage origination	536,436	2.5 %	450,521	2.4 %	448,166	2.6 %
Other:						
Development services	86,320	0.4 %	60,513	0.3 %	55,638	0.3 %
Other	95,121	0.6 %	84,461	0.5 %	86,235	0.5 %
Total fee revenue	10,837,552	50.8 %	9,409,036	50.5 %	8,724,264	50.2 %
Pass through costs also recognized as revenue	10,502,536	49.2 %	9,219,751	49.5 %	8,644,844	49.8 %
Total revenue	21,340,088	100.0 %	18,628,787	100.0 %	17,369,108	100.0 %
Costs and expenses:						
Cost of services	16,449,212	77.1 %	14,305,099	76.8 %	13,420,911	77.3 %
Operating, administrative and other	3,365,773	15.8 %	2,858,720	15.3 %	2,780,301	16.0 %
Depreciation and amortization	451,988	2.1 %	406,114	2.2 %	366,927	2.1 %
Total costs and expenses	20,266,973	95.0 %	17,569,933	94.3 %	16,568,139	95.4 %
Gain on disposition of real estate	14,874	0.1 %	19,828	0.1 %	15,862	0.1 %
Operating income	1,087,989	5.1 %	1,078,682	5.8 %	816,831	4.7 %
Equity income from unconsolidated subsidiaries	324,664	1.5 %	210,207	1.0 %	197,351	1.2 %
Other income	93,020	0.4 %	9,405	0.1 %	4,688	0.0 %
Interest income	8,585	0.0 %	9,853	0.1 %	8,051	0.0 %
Interest expense	107,270	0.5 %	136,814	0.7 %	144,851	0.8 %
Write-off of financing costs on extinguished debt	27,982	0.0 %	—	0.0 %	—	0.0 %
Income before provision for income taxes	1,379,006	6.5 %	1,171,333	6.3 %	882,070	5.1 %
Provision for income taxes	313,058	1.5 %	467,757	2.5 %	296,900	1.7 %
Net income	1,065,948	5.0 %	703,576	3.8 %	585,170	3.4 %
Less: Net income attributable to non-controlling interests	2,729	0.0 %	6,467	0.1 %	12,091	0.1 %
Net income attributable to CBRE Group, Inc.	\$ 1,063,219	5.0 %	\$ 697,109	3.7 %	\$ 573,079	3.3 %
EBITDA	\$ 1,954,932	9.2 %	\$ 1,697,941	9.1 %	\$ 1,373,706	7.9 %
Adjusted EBITDA	\$ 1,905,168	8.9 %	\$ 1,716,774	9.2 %	\$ 1,562,347	9.0 %

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report for more information.

Fee revenue, EBITDA and adjusted EBITDA are not recognized measurements under GAAP. When analyzing our operating performance, investors should use these measures in addition to, and not as an alternative for, their most directly comparable financial measure calculated and presented in accordance with GAAP. We generally use these non-GAAP financial measures to evaluate operating performance and for other discretionary purposes. We believe these measures provide a more complete understanding of ongoing operations, enhance comparability of current results to prior periods and may be useful for investors to analyze our financial performance because they eliminate the impact of selected charges that may obscure trends in the underlying performance of our business. Because not all companies use identical calculations, our presentation of fee revenue, EBITDA and adjusted EBITDA may not be comparable to similarly titled measures of other companies.

Fee revenue is gross revenue less both client reimbursed costs largely associated with employees that are dedicated to client facilities and subcontracted vendor work performed for clients. We believe that investors may find this measure useful to analyze the company's overall financial performance because it excludes costs reimbursable by clients, and as such provides greater visibility into the underlying performance of our business.

EBITDA represents earnings before net interest expense, write-off of financing costs on extinguished debt, income taxes, depreciation and amortization. Amounts shown for adjusted EBITDA further remove (from EBITDA) the impact of certain cash and non-cash items related to acquisitions, costs associated with our reorganization, including cost-savings initiatives, certain carried interest incentive compensation reversal to align with the timing of associated revenue and other non-recurring costs. We believe that investors may find these measures useful in evaluating our operating performance compared to that of other companies in our industry because their calculations generally eliminate the effects of acquisitions, which would include impairment charges of goodwill and intangibles created from acquisitions, the effects of financings and income taxes and the accounting effects of capital spending.

EBITDA and adjusted EBITDA are not intended to be measures of free cash flow for our discretionary use because they do not consider certain cash requirements such as tax and debt service payments. These measures may also differ from the amounts calculated under similarly titled definitions in our debt instruments, which amounts are further adjusted to reflect certain other cash and non-cash charges and are used by us to determine compliance with financial covenants therein and our ability to engage in certain activities, such as incurring additional debt and making certain restricted payments. We also use adjusted EBITDA as a significant component when measuring our operating performance under our employee incentive compensation programs.

EBITDA and adjusted EBITDA are calculated as follows (dollars in thousands):

	Year Ended December 31,		
	2018	2017	2016
		(As Adjusted) (1)	(As Adjusted) (1)
Net income attributable to CBRE Group, Inc.	\$ 1,063,219	\$ 697,109	\$ 573,079
Add:			
Depreciation and amortization	451,988	406,114	366,927
Interest expense	107,270	136,814	144,851
Write-off of financing costs on extinguished debt	27,982	—	—
Provision for income taxes	313,058	467,757	296,900
Less:			
Interest income	8,585	9,853	8,051
EBITDA	1,954,932	1,697,941	1,373,706
Adjustments:			
Costs associated with our reorganization, including cost-savings initiatives (2)	37,925	—	—
Integration and other costs related to acquisitions	9,124	27,351	125,743
Costs incurred in connection with litigation settlement	8,868	—	—
Carried interest incentive compensation reversal to align with the timing of associated revenue	(5,261)	(8,518)	(15,558)
One-time gain associated with remeasuring an investment in an unconsolidated subsidiary to fair value as of the date the remaining controlling interest was acquired	(100,420)	—	—
Cost-elimination expenses (3)	—	—	78,456
Adjusted EBITDA	<u>\$ 1,905,168</u>	<u>\$ 1,716,774</u>	<u>\$ 1,562,347</u>

- (1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report for more information.
- (2) Primarily represents severance costs related to headcount reductions in connection with our reorganization announced in the third quarter of 2018 that became effective January 1, 2019.
- (3) Represents cost-elimination expenses relating to a program initiated in the fourth quarter of 2015 and completed in the third quarter of 2016 (our cost-elimination project) to reduce the company's global cost structure after several years of significant revenue and related cost growth. Cost-elimination expenses incurred during the year ended December 31, 2016 consisted of \$73.6 million of severance costs related to headcount reductions in connection with the program and \$4.9 million of third-party contract termination costs. The total amount for each period does not have a cash impact.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

We reported consolidated net income of \$1.1 billion for the year ended December 31, 2018 on revenue of \$21.3 billion as compared to consolidated net income of \$697.1 million on revenue of \$18.6 billion for the year ended December 31, 2017.

Our revenue on a consolidated basis for the year ended December 31, 2018 increased by \$2.7 billion, or 14.6%, as compared to the year ended December 30, 2017. The revenue increase reflects strong organic growth fueled by higher occupier outsourcing revenue (up 15.2%) and property management revenue (up 7.1%), increased leasing (up 17.8%), sales (up 6.1%) and commercial mortgage origination activity (up 19.1%) and higher revenue from our Global Investment Management segment (up 12.6%). In addition, foreign currency translation had an \$88.5 million positive impact on total revenue during the year ended December 31, 2018, primarily driven by strength in the British pound sterling and euro, partially offset by weakness in the Argentine peso and Brazilian real.

Our cost of services on a consolidated basis increased by \$2.1 billion, or 15.0%, during the year ended December 31, 2018 as compared to the same period in 2017. This increase was primarily due to higher costs associated with our occupier outsourcing business. In addition, our sales professionals generally are paid on a commission basis, which substantially correlates with our transaction revenue performance. Accordingly, the increase in sales and lease transaction revenue led to a corresponding increase in commission expense. Lastly, foreign currency translation had a \$65.0 million negative impact on total cost of services during the year ended December 31, 2018. Cost of services as a percentage of revenue increased from 76.8% for the year ended December 31, 2017 to 77.1% for the year ended December 31, 2018, primarily driven by our revenue mix, with occupier outsourcing revenue, which has a lower margin than sales and lease revenue, comprising a higher percentage of revenue than in the prior year.

Our operating, administrative and other expenses on a consolidated basis increased by \$507.1 million, or 17.7%, during the year ended December 31, 2018 as compared to the same period in 2017. The increase was mostly driven by higher payroll-related costs (including increases in bonus and stock compensation expense), higher carried interest expense and increases in consulting, marketing and occupancy costs. During 2018, we also incurred \$35.2 million of costs incurred in connection with our reorganization (including cost-savings initiatives) and \$8.9 million of costs as a result of a litigation settlement, the impact of which was partly offset by lower integration and other costs associated with acquisitions. Foreign currency translation also had a \$23.5 million negative impact on total operating expenses during the year ended December 31, 2018. Operating expenses as a percentage of revenue increased from 15.3% for the year ended December 31, 2017 to 15.8% for the year ended December 31, 2018, partially driven by higher bonus expense in our Development Services segment with no corresponding increase in revenue (as bonus expense was attributable to an increase in equity income from unconsolidated subsidiaries) as well as due to the costs incurred in connection with our reorganization.

Our depreciation and amortization expense on a consolidated basis increased by \$45.9 million, or 11.3%, during the year ended December 31, 2018 as compared to the same period in 2017. This increase was primarily attributable to a rise in depreciation expense of \$25.9 million during the year ended December 31, 2018 driven by technology-related capital expenditures. Higher amortization expense associated with mortgage servicing rights and intangibles acquired in acquisitions also contributed to the increase.

Our equity income from unconsolidated subsidiaries on a consolidated basis increased by \$114.5 million, or 54.5%, during the year ended December 31, 2018 as compared to the same period in 2017, primarily driven by higher equity earnings associated with gains on property sales reported in our Development Services segment.

Our other income on a consolidated basis was \$93.0 million for the year ended December 31, 2018 as compared to \$9.4 million for the same period in 2017. Included in other income for the year ended December 31, 2018 was a one-time gain of \$100.4 million associated with remeasuring our investment in a previously unconsolidated subsidiary in New England to fair value as of the date we acquired the remaining controlling interest.

Our consolidated interest expense decreased by \$29.5 million, or 21.6%, for the year ended December 31, 2018 as compared to the year ended December 31, 2017. This decrease was primarily driven by the early redemption, in full, of the \$800.0 million aggregate outstanding principal amount of our 5.00% senior notes in the first quarter of 2018.

Our write-off of financing costs on extinguished debt on a consolidated basis was \$28.0 million for the year ended December 31, 2018. These costs included a \$20.0 million premium paid and the write-off of \$8.0 million of unamortized deferred financing costs in connection with the early redemption, in full, of the \$800.0 million aggregate outstanding principal amount of our 5.00% senior notes.

Our provision for income taxes on a consolidated basis was \$313.1 million for the year ended December 31, 2018 as compared to \$467.8 million for the same period in 2017. Our provision for income taxes for 2018 included a net expense true-up of \$13.3 million resulting from completion of accounting for the Tax Act. Our provision for income taxes for 2017 included a net expense of \$143.4 million for the provisional charge related to the Tax Act. These net expenses were primarily comprised of a transition tax on accumulated foreign earnings, net of a tax benefit from the re-measurement of certain deferred tax assets and liabilities using the lower U.S. corporate income tax rate and the release of valuation allowances on foreign tax credits that will decrease the liability related to the transition tax. Excluding these net charges associated with the Tax Act, our effective tax rate, after adjusting pre-tax income to remove the portion attributable to non-controlling interests, would have been 21.8% for the year ended December 31, 2018 compared to 27.8% for the year ended December 31, 2017. We benefited from a lower U.S. corporate tax rate, with such rate being 35% in 2017 versus 21% in 2018. The effect of the decrease in the U.S. corporate tax rate was partially offset by discrete tax benefits for the year ended December 31, 2017 from the re-measurement of income tax exposures relating to prior periods and release of valuation allowances on foreign income tax credits that were expected to be utilized with no similar items for the year ended December 31, 2018.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

We reported consolidated net income of \$697.1 million for the year ended December 31, 2017 on revenue of \$18.6 billion as compared to consolidated net income of \$573.1 million on revenue of \$17.4 billion for the year ended December 31, 2016.

Our revenue on a consolidated basis for the year ended December 31, 2017 increased by \$1.3 billion, or 7.3%, as compared to the year ended December 31, 2016. The revenue increase reflects strong organic growth fueled by higher occupier outsourcing revenue (up 8.0%) and property management revenue (up 9.3%), increased sales (up 5.8%) and leasing activity (up 7.5%), and higher loan servicing revenue (up 28.9%). These increases were partially offset by foreign currency translation, which had a \$34.7 million negative impact on total revenue during the year ended December 31, 2017, primarily driven by weakness in the British pound sterling, partially offset by strength in the euro.

Our cost of services on a consolidated basis increased by \$884.2 million, or 6.6%, during the year ended December 31, 2017 as compared to same period in 2016. This increase was primarily due to higher costs associated with our occupier outsourcing business as well as higher professional bonuses (particularly in the United States and United Kingdom). In addition, as previously mentioned, our sales professionals generally are paid on a commission basis, which substantially correlates with our transaction revenue performance. Accordingly, the increase in sales and lease transaction revenue led to a corresponding increase in commission expense. These increases were partially offset by foreign currency translation, which had a \$37.9 million positive impact on cost of services during the year ended December 31, 2017. In addition, we incurred \$37.1 million of costs in 2016 in connection with our cost-elimination project that did not recur in 2017, which partially contributed to cost of services as a percentage of revenue decreasing from 77.3% for the year ended December 31, 2016 to 76.8% for the year ended December 31, 2017.

Our operating, administrative and other expenses on a consolidated basis increased by \$78.4 million, or 2.8%, during the year ended December 31, 2017 as compared to the same period in 2016. The increase was mostly driven by higher payroll-related costs (including increases in bonus and stock compensation expense driven by improved operating performance). This increase was partially offset by a decrease of \$96.7 million in integration and other costs related to the GWS Acquisition incurred during the year ended December 31, 2017 as well as the impact of \$41.4 million of costs incurred during the year ended December 31, 2016 as part of our cost-elimination project, which did not recur during the year ended December 31, 2017. Foreign currency also had a \$1.7 million positive impact on total operating expenses during the year ended December 31, 2017, including a \$0.1 million positive impact from foreign currency translation and \$1.6 million of favorable foreign currency transaction activity over the year ended December 31, 2016 (part of which related to net hedging activity during 2016, which did not recur in the 2017 given that we discontinued our hedging program at the end of 2016). Operating expenses as a percentage of revenue decreased from 16.0% for the year ended December 31, 2016 to 15.3% for the year ended December 31, 2017, primarily driven by the aforementioned decline in integration and other costs related to the GWS Acquisition as well as the costs associated with our cost-elimination project in 2016.

Our depreciation and amortization expense on a consolidated basis increased by \$39.2 million, or 10.7%, during the year ended December 31, 2017 as compared to the same period in 2016. This increase was primarily attributable to higher amortization expense associated with mortgage servicing rights. A rise in depreciation expense of \$14.5 million during the year ended December 31, 2017 driven by technology-related capital expenditures also contributed to the increase.

Our equity income from unconsolidated subsidiaries on a consolidated basis increased by \$12.9 million, or 6.5%, during the year ended December 31, 2017 as compared to the same period in 2016, primarily driven by higher equity earnings associated with gains on property sales reported in our Development Services segment.

Our consolidated interest expense decreased by \$8.0 million, or 5.5%, for the year ended December 31, 2017 as compared to the year ended December 31, 2016. This decrease was primarily driven by lower interest expense due to lower net borrowings under our credit agreement and a decrease in notes payable on real estate during 2017.

Our provision for income taxes on a consolidated basis was \$467.8 million for the year ended December 31, 2017 as compared to \$296.9 million for the same period in 2016. Our provision for income taxes for 2017 included a provisional net charge of \$143.4 million attributable to the Tax Act. This net charge was primarily comprised of a transition tax on accumulated foreign earnings, net of a tax benefit from the re-measurement of certain deferred tax assets and liabilities using the lower U.S. corporate income tax rate and the release of valuation allowances on foreign tax credits that will decrease the liability related to the transition tax. Excluding this net charge, our effective tax rate for 2017, after adjusting pre-tax income to remove the portion attributable to non-controlling interests, would have been 27.8% compared to 34.1% for the year ended December 31, 2016. We benefited from a more favorable geographic mix of income, the re-measurement of income tax exposures relating to prior periods and release of valuation allowances. The release of valuation allowances during the year ended December 31, 2017 primarily related to valuation allowances on foreign income tax credits that are expected to be utilized as well as on net operating losses that have been utilized through current year operations. The re-measurement of income tax exposures, primarily due to the resolution of certain tax audits during the year ended December 31, 2017, contributed to the lower effective tax rate for 2017 as compared to 2016. In addition, the contribution of income from lower taxed jurisdictions to our total consolidated income for the year ended December 31, 2017, provided a more favorable geographic mix of income, resulting in a decrease to the overall effective tax rate.

Segment Operations

On August 17, 2018, we announced a new organization structure that became effective on January 1, 2019. Under the new structure, we will organize our operations around, and publicly report our financial results on, three global business segments: (1) Advisory Services, (2) Global Workplace Solutions and (3) Real Estate Investments. For 2018, we are reporting our financial results under our business segments as they existed throughout the year.

Through the year ended December 31, 2018, we reported our operations through the following segments: (1) Americas, (2) EMEA, (3) Asia Pacific, (4) Global Investment Management and (5) Development Services. The Americas consisted of operations located in the United States, Canada and key markets in Latin America. EMEA mainly consisted of operations in Europe, while Asia Pacific included operations in Asia, Australia and New Zealand. The Global Investment Management business consisted of investment management operations in North America, Europe and Asia Pacific. The Development Services business consisted of real estate development and investment activities in the United States.

Americas

The following table summarizes our results of operations for our Americas operating segment for the years ended December 31, 2018, 2017 and 2016 (dollars in thousands):

	Year Ended December 31,					
	2018		2017		2016	
			(As Adjusted) (1)		(As Adjusted) (1)	
Revenue:						
Fee revenue:						
Occupier outsourcing	\$ 1,282,605	9.8 %	\$ 1,111,187	9.4 %	\$ 949,666	8.6 %
Property management	319,538	2.4 %	286,288	2.4 %	272,000	2.5 %
Valuation	261,559	2.0 %	245,179	2.1 %	245,389	2.2 %
Loan servicing	172,096	1.3 %	146,460	1.2 %	111,373	1.0 %
Leasing	2,423,248	18.5 %	2,054,872	17.4 %	1,924,361	17.4 %
Capital Markets:						
Sales	1,189,368	9.1 %	1,103,862	9.4 %	1,103,452	10.0 %
Commercial mortgage origination	528,338	4.0 %	442,955	3.8 %	443,149	4.0 %
Other	50,342	0.3 %	48,242	0.4 %	50,230	0.4 %
Total fee revenue	6,227,094	47.4 %	5,439,045	46.1 %	5,099,620	46.1 %
Pass through costs also recognized as revenue	6,904,812	52.6 %	6,352,332	53.9 %	5,970,345	53.9 %
Total revenue	13,131,906	100.0 %	11,791,377	100.0 %	11,069,965	100.0 %
Costs and expenses:						
Cost of services	10,468,110	79.7 %	9,410,147	79.8 %	8,873,405	80.2 %
Operating, administrative and other	1,616,216	12.3 %	1,405,552	11.9 %	1,357,438	12.3 %
Depreciation and amortization	327,556	2.5 %	289,338	2.5 %	254,118	2.2 %
Operating income	720,024	5.5 %	686,340	5.8 %	585,004	5.3 %
Equity income from unconsolidated subsidiaries	14,177	0.1 %	18,789	0.1 %	17,892	0.2 %
Other income (loss)	103,689	0.8 %	37	0.0 %	(90)	0.0 %
Add-back: Depreciation and amortization	327,556	2.5 %	289,338	2.5 %	254,118	2.2 %
EBITDA	\$ 1,165,446	8.9 %	\$ 994,504	8.4 %	\$ 856,924	7.7 %
Adjusted EBITDA	\$ 1,111,014	8.5 %	\$ 1,011,643	8.6 %	\$ 950,573	8.6 %

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report for more information.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Revenue increased by \$1.3 billion, or 11.4%, for the year ended December 31, 2018 as compared to the year ended December 31, 2017. The revenue increase reflects strong organic growth fueled by higher occupier outsourcing and property management revenue as well as improved sales, leasing and commercial mortgage origination activity. Foreign currency translation had a \$56.4 million negative impact on total revenue during the year ended December 31, 2018, primarily driven by weakness in the Argentine peso and Brazilian real.

Cost of services increased by \$1.1 billion, or 11.2%, for the year ended December 31, 2018 as compared to the same period in 2017, primarily due to higher costs associated with our occupier outsourcing business. Also contributing to the variance was higher commission expense resulting from improved sales and lease transaction revenue. Foreign currency translation had a \$48.2 million positive impact on total cost of services during the year ended December 31, 2018. Cost of services as a percentage of revenue was consistent at 79.7% for the year ended December 31, 2018 versus 79.8% for the same period in 2017.

Operating, administrative and other expenses increased by \$210.7 million, or 15.0%, for the year ended December 31, 2018 as compared to the year ended December 31, 2017. The increase was partly driven by higher payroll-related costs (including increases in bonus and stock compensation expense) as well as increases in consulting, marketing and occupancy costs. During 2018, we also incurred \$27.4 million of severance costs in connection with our reorganization, including cost-savings initiatives, and \$8.9 million of costs as a result of a litigation settlement, the impact of which was partly offset by lower integration and other costs associated with acquisitions. Foreign currency translation had a \$6.5 million positive impact on total operating expenses during the year ended December 31, 2018.

In connection with the origination and sale of mortgage loans for which the company retains servicing rights, we record servicing assets or liabilities based on the fair value of the retained mortgage servicing rights (MSRs) on the date the loans are sold. Upon origination of a mortgage loan held for sale, the fair value of the mortgage servicing rights to be retained is included in the forecasted proceeds from the anticipated loan sale and results in a net gain (which is reflected in revenue). Subsequent to the initial recording, MSRs are amortized (within amortization expense) and carried at the lower of amortized cost or fair value in other intangible assets in the accompanying consolidated balance sheets. They are amortized in proportion to and over the estimated period that the servicing income is expected to be received. For the year ended December 31, 2018, MSRs contributed to operating income \$173.7 million of gains recognized in conjunction with the origination and sale of mortgage loans, offset by \$115.7 million of amortization of related intangible assets. For the year ended December 31, 2017, MSRs contributed to operating income \$145.1 million of gains recognized in conjunction with the origination and sale of mortgage loans, offset by \$98.6 million of amortization of related intangible assets

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Revenue increased by \$721.4 million, or 6.5%, for the year ended December 31, 2017 compared to the year ended December 31, 2016. The revenue increase reflects strong organic growth fueled by higher occupier outsourcing and property management revenue, improved leasing activity and higher loan servicing revenue. Foreign currency translation had a \$3.7 million negative impact on revenue during the year ended December 31, 2017, primarily driven by weakness in the Venezuelan bolivar, largely offset by strength in the Brazilian real and the Canadian dollar.

Cost of services increased by \$536.7 million, or 6.0%, for the year ended December 31, 2017 as compared to the same period in 2016, primarily due to higher costs associated with our occupier outsourcing business and higher professional bonuses in the United States. Also contributing to the variance was higher commission expense resulting from improved lease transaction revenue. These items were partially offset by the impact of \$11.9 million of costs incurred during the year ended December 31, 2016 in connection with our cost-elimination project that did not recur during the year ended December 31, 2017. Foreign currency translation had a \$3.7 million positive impact on cost of services during the year ended December 31, 2017. Cost of services as a percentage of revenue decreased from 80.2% for the year ended December 31, 2016 to 79.8% for the year ended December 31, 2017, partly due to cost-elimination expenses incurred in 2016 that did not recur in 2017.

Operating, administrative and other expenses increased by \$48.1 million, or 3.5%, for the year ended December 31, 2017 as compared to the year ended December 31, 2016. The increase was partly driven by higher payroll-related costs (including increases in bonus and stock compensation expense due to improved operating performance). Foreign currency also had a \$9.0 million negative impact on total operating expenses during the year ended December 31, 2017, which included a negative impact from foreign currency translation of \$2.4 million and \$6.6 million of unfavorable foreign currency transaction activity over the year ended December 31, 2016 (part of which related to net hedging activity in 2016, which did not recur in 2017). These increases were partially offset by a decrease of \$52.6 million in integration and other costs related to the GWS Acquisition incurred during the year ended December 31, 2017 as well as the impact of \$10.4 million of costs incurred during the year ended December 31, 2016 as part of our cost-elimination project, which did not recur during the year ended December 31, 2017.

For the year ended December 31, 2017, MSRs contributed to operating income \$145.1 million of gains recognized in conjunction with the origination and sale of mortgage loans, offset by \$98.6 million of amortization of related intangible assets. For the year ended December 31, 2016, MSRs contributed to operating income \$154.0 million of gains recognized in conjunction with the origination and sale of mortgage loans, offset by \$73.3 million of amortization of related intangible assets.

EMEA

The following table summarizes our results of operations for our EMEA operating segment for the years ended December 31, 2018, 2017 and 2016 (dollars in thousands):

	Year Ended December 31,					
	2018		2017		2016	
			(As Adjusted) (1)	(As Adjusted) (1)	(As Adjusted) (1)	(As Adjusted) (1)
Revenue:						
Fee revenue:						
Occupier outsourcing	\$ 1,466,525	26.8%	\$ 1,167,364	26.6%	\$ 1,116,257	27.0%
Property management	185,260	3.4%	168,710	3.8%	148,982	3.6%
Valuation	187,515	3.4%	165,082	3.8%	148,856	3.6%
Loan servicing	10,755	0.2%	10,989	0.2%	11,144	0.3%
Leasing	526,372	9.6%	446,446	10.2%	411,005	10.0%
Capital Markets:						
Sales	428,810	7.8%	397,130	9.0%	334,398	8.1%
Commercial mortgage origination	5,768	0.1%	5,447	0.1%	2,881	0.1%
Other	32,076	0.7%	26,583	0.6%	23,612	0.5%
Total fee revenue	2,843,081	52.0%	2,387,751	54.3%	2,197,135	53.2%
Pass through costs also recognized as revenue	2,622,842	48.0%	2,009,074	45.7%	1,931,771	46.8%
Total revenue	5,465,923	100.0%	4,396,825	100.0%	4,128,906	100.0%
Costs and expenses:						
Cost of services	4,328,821	79.2%	3,409,908	77.6%	3,245,455	78.6%
Operating, administrative and other	817,224	15.0%	688,900	15.7%	685,412	16.6%
Depreciation and amortization	80,290	1.5%	72,322	1.6%	66,619	1.5%
Operating income	239,588	4.3%	225,695	5.1%	131,420	3.3%
Equity income from unconsolidated subsidiaries	1,523	0.1%	1,553	0.1%	1,817	0.0%
Other income (loss)	171	0.0%	(67)	0.0%	22	0.0%
Less: Net income attributable to non-controlling interests	243	0.0%	64	0.0%	476	0.0%
Add-back: Depreciation and amortization	80,290	1.5%	72,322	1.6%	66,619	1.5%
EBITDA	\$ 321,329	5.9%	\$ 299,439	6.8%	\$ 199,402	4.8%
Adjusted EBITDA	\$ 329,522	6.0%	\$ 309,233	7.0%	\$ 272,894	6.6%

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report for more information.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Revenue increased by \$1.1 billion, or 24.3%, for the year ended December 31, 2018 as compared to the same period in 2017. We achieved strong organic growth fueled by higher occupier outsourcing revenue as well as higher sales and leasing activity. Foreign currency translation also had a \$145.8 million positive impact on total revenue during the year ended December 31, 2018, primarily driven by strength in the British pound sterling and euro.

Cost of services increased by \$918.9 million, or 26.9%, for the year ended December 31, 2018 as compared to the same period in 2017, primarily due to higher costs associated with our occupier outsourcing business. In addition, foreign currency translation had a \$120.0 million negative impact on total cost of services during the year ended December 31, 2018. Cost of services as a percentage of revenue increased from 77.6% for the year ended December 31, 2017 to 79.2% for the year ended December 31, 2018, primarily driven by our revenue mix, with occupier outsourcing revenue, which has a lower margin than sales and lease revenue, comprising a higher percentage of revenue than in the prior year.

Operating, administrative and other expenses increased by \$128.3 million, or 18.6%, for the year ended December 31, 2018 as compared to the same period in 2017. This increase was primarily driven by higher payroll-related costs (including increased bonus expense) and increases in marketing and occupancy costs. Foreign currency translation also had a \$23.8 million negative impact on total operating expenses during the year ended December 31, 2018.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Revenue increased by \$267.9 million, or 6.5%, for the year ended December 31, 2017 as compared to the same period in 2016. We achieved strong organic growth fueled by higher occupier outsourcing and property management revenue, as well as higher sales and leasing activity. Such growth was partially offset by foreign currency translation, which had a \$42.6 million negative impact on total revenue during the year ended December 31, 2017, primarily driven by weakness in the British pound sterling, partially offset by strength in the euro.

Cost of services increased by \$164.5 million, or 5.1%, for the year ended December 31, 2017 as compared to the same period in 2016, primarily due to higher costs associated with our occupier outsourcing business and higher professional bonuses, particularly in the United Kingdom resulting from improved operating performance. These items were partly offset by foreign currency translation, which had a \$44.1 million positive impact on cost of services. In addition, we incurred \$18.8 million of costs during the year ended December 31, 2016 in connection with our cost-elimination project that did not recur during the year ended December 31, 2017. The absence of such costs contributed to cost of services as a percentage of revenue decreasing from 78.6% for the year ended December 31, 2016 to 77.6% for the year ended December 31, 2017.

Operating, administrative and other expenses increased by \$3.5 million, or 0.5%, for the year ended December 31, 2017 as compared to the same period in 2016. This increase was primarily driven by higher payroll-related costs, including increased bonus and stock compensation expense due to improved operating performance during the year ended December 31, 2017. These items were largely offset by a decrease of \$38.1 million in integration and other costs related to the GWS Acquisition incurred during the year ended December 31, 2017 as well as the impact of \$6.8 million of costs incurred during the year ended December 31, 2016 as part of our cost-elimination project, which did not recur during the year ended December 31, 2017. Foreign currency also had a \$1.3 million net positive impact on total operating expenses during the year ended December 31, 2017, including a \$3.6 million positive impact from foreign currency translation, partially offset by \$2.3 million of unfavorable foreign currency transaction activity over the year ended December 31, 2016 (part of which related to net hedging activity in 2016, which did not recur in 2017).

Asia Pacific

The following table summarizes our results of operations for our Asia Pacific operating segment for the years ended December 31, 2018, 2017 and 2016 (dollars in thousands):

	Year Ended December 31,					
	2018		2017		2016	
			(As Adjusted) (1)		(As Adjusted) (1)	
Revenue:						
Fee revenue:						
Occupier outsourcing	\$ 291,819	13.2 %	\$ 247,518	12.5 %	\$ 214,040	12.4 %
Property management	91,923	4.2 %	86,164	4.3 %	74,602	4.3 %
Valuation	111,741	5.1 %	117,377	5.9 %	110,125	6.4 %
Loan servicing	570	0.0 %	—	0.0 %	—	0.0 %
Leasing	421,255	19.1 %	357,983	18.0 %	312,184	18.1 %
Capital Markets:						
Sales	300,312	13.6 %	304,344	15.3 %	261,320	15.1 %
Commercial mortgage origination	2,330	0.1 %	2,119	0.1 %	2,136	0.1 %
Other	12,703	0.5 %	9,636	0.6 %	12,393	0.7 %
Total fee revenue	1,232,653	55.8 %	1,125,141	56.7 %	986,800	57.1 %
Pass through costs also recognized as revenue	974,882	44.2 %	858,345	43.3 %	742,728	42.9 %
Total revenue	2,207,535	100.0 %	1,983,486	100.0 %	1,729,528	100.0 %
Costs and expenses:						
Cost of services	1,652,281	74.8 %	1,485,044	74.9 %	1,302,050	75.3 %
Operating, administrative and other	359,033	16.3 %	319,214	16.1 %	301,097	17.4 %
Depreciation and amortization	20,297	0.9 %	18,258	0.9 %	17,810	1.0 %
Operating income	175,924	8.0 %	160,970	8.1 %	108,571	6.3 %
Equity income from unconsolidated subsidiaries	433	0.0 %	397	0.0 %	223	0.0 %
Less: Net income attributable to non-controlling interests	—	0.0 %	—	0.0 %	85	0.0 %
Add-back: Depreciation and amortization	20,297	0.9 %	18,258	0.9 %	17,810	1.0 %
EBITDA	\$ 196,654	8.9 %	\$ 179,625	9.0 %	\$ 126,519	7.3 %
Adjusted EBITDA	\$ 197,684	9.0 %	\$ 180,043	9.1 %	\$ 142,299	8.2 %

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report for more information.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Revenue increased by \$224.0 million, or 11.3%, for the year ended December 31, 2018 as compared to the year ended December 31, 2017. The revenue increase reflects strong organic growth, fueled by higher occupier outsourcing and property management revenue as well as improved leasing activity. In addition, foreign currency translation had a \$10.0 million negative impact on total revenue during the year ended December 31, 2018, primarily driven by weakness in the Australian dollar and Indian rupee, partially offset by strength in the Chinese yuan, Japanese yen, Singapore dollar and Thai baht.

Cost of services increased by \$167.2 million, or 11.3%, for the year ended December 31, 2018 as compared to the same period in 2017, primarily driven by higher costs associated with our occupier outsourcing and property management businesses. In addition, foreign currency translation had a \$6.8 million positive impact on total cost of services during the year ended December 31, 2018. Cost of services as a percentage of revenue was consistent at 74.8% for the year ended December 31, 2018 as compared to 74.9% for the year ended December 31, 2017.

Operating, administrative and other expenses increased by \$39.8 million, or 12.5%, for the year ended December 31, 2018 as compared to the same period in 2017. We incurred higher payroll-related costs (including increased bonus expense) as well as increases in marketing, occupancy and travel costs during the year ended December 31, 2018. Foreign currency activity also had an overall net negative impact of \$6.9 million for the year ended December 31, 2018, due to unfavorable foreign currency transaction activity of \$7.8 million, partially offset by a \$0.9 million positive impact from foreign currency translation.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Revenue increased by \$254.0 million, or 14.7%, for the year ended December 31, 2017 as compared to the year ended December 31, 2016. The revenue increase reflects strong organic growth, fueled by higher occupier outsourcing and property management revenue as well as improved sales and leasing activity. In addition, foreign currency translation had a \$13.2 million positive impact on total revenue during the year ended December 31, 2017, primarily driven by strength in the Australian dollar and Indian rupee, partially offset by weakness in the Chinese yuan and Japanese yen.

Cost of services increased by \$183.0 million, or 14.1%, for the year ended December 31, 2017 as compared to the same period in 2016, driven by higher costs associated with our occupier outsourcing business. Also contributing to the variance was higher commission expense resulting from improved sales and lease transaction revenue. In addition, foreign currency translation had a \$9.9 million negative impact on cost of services during the year ended December 31, 2017. These items were partially offset by the impact of \$6.4 million of costs incurred during the year ended December 31, 2016 in connection with our cost-elimination project that did not recur during the year ended December 31, 2017. The absence of such costs contributed to cost of services as a percentage of revenue decreasing from 75.3% for the year ended December 31, 2016 to 74.9% for the year ended December 31, 2017.

Operating, administrative and other expenses increased by \$18.1 million, or 6.0%, for the year ended December 31, 2017 as compared to the same period in 2016. We incurred higher payroll-related costs (including increased stock compensation and bonus expense due to improved operating performance) during the year ended December 31, 2017. This was partially offset by a decrease of \$6.0 million in integration and other costs related to the GWS Acquisition incurred during the year ended December 31, 2017 as well as the impact of \$2.9 million of costs incurred during the year ended December 31, 2016 as part of our cost-elimination project, which did not recur during the year ended December 31, 2017. Foreign currency activity also had an overall net positive impact of \$9.3 million for the year ended December 31, 2017, due to \$11.1 million of favorable foreign currency transaction activity over the year ended December 31, 2016 (part of which related to net hedging activity in 2016, which did not recur in 2017), partially offset by a \$1.8 million negative impact from foreign currency translation.

Global Investment Management

The following table summarizes our results of operations for our Global Investment Management operating segment for the years ended December 31, 2018, 2017 and 2016 (dollars in thousands):

	Year Ended December 31,					
	2018		2017		2016	
			(As Adjusted) (1)		(As Adjusted) (1)	
Revenue	\$ 434,405	100.0 %	\$ 377,644	100.0 %	\$ 369,800	100.0 %
Costs and expenses:						
Operating, administrative and other	344,312	79.3 %	285,831	75.7 %	297,194	80.4 %
Depreciation and amortization	23,017	5.3 %	24,123	6.4 %	25,911	7.0 %
Operating income	\$ 67,076	15.4 %	\$ 67,690	17.9 %	\$ 46,695	12.6 %
Equity income from unconsolidated subsidiaries	6,131	1.4 %	7,923	2.1 %	7,243	1.9 %
Other (loss) income	(10,840)	(2.5 %)	9,435	2.5 %	4,756	1.3 %
Less: Net income attributable to non-controlling interests	2,360	0.5 %	6,280	1.7 %	7,174	1.9 %
Add-back: Depreciation and amortization	23,017	5.3 %	24,123	6.4 %	25,911	7.0 %
EBITDA	\$ 83,024	19.1 %	\$ 102,891	27.2 %	\$ 77,431	20.9 %
Adjusted EBITDA	\$ 78,469	18.1 %	\$ 94,373	25.0 %	\$ 83,150	22.5 %

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report for more information.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Revenue increased by \$56.8 million, or 15.0%, for the year ended December 31, 2018 as compared to the year ended December 31, 2017, primarily driven by higher asset management and incentive fees as well as higher carried interest revenue. Foreign currency translation also had a \$9.1 million positive impact on total revenue during the year ended December 31, 2018, primarily driven by strength in the British pound sterling and euro. These items were partially offset by lower acquisition fees in the current year.

Operating, administrative and other expenses increased by \$58.5 million, or 20.5%, for the year ended December 31, 2018 as compared to the same period in 2017, primarily driven by higher carried interest expense as well as higher payroll-related costs (including bonuses). Additionally, foreign currency translation had a \$7.1 million negative impact on total operating expenses during the year ended December 31, 2018.

A roll forward of our AUM by product type for the year ended December 31, 2018 is as follows (dollars in billions):

	<u>Funds</u>	<u>Separate Accounts</u>	<u>Securities</u>	<u>Total</u>
Balance at January 1, 2018	\$ 31.7	\$ 56.7	\$ 14.8	\$ 103.2
Inflows	7.1	7.6	1.6	16.3
Outflows	(5.4)	(4.0)	(4.5)	(13.9)
Market appreciation (depreciation)	1.6	(0.1)	(1.6)	(0.1)
Balance at December 31, 2018	<u>\$ 35.0</u>	<u>\$ 60.2</u>	<u>\$ 10.3</u>	<u>\$ 105.5</u>

AUM generally refers to the properties and other assets with respect to which we provide (or participate in) oversight, investment management services and other advice, and which generally consist of real estate properties or loans, securities portfolios and investments in operating companies and joint ventures. Our AUM is intended principally to reflect the extent of our presence in the real estate market, not the basis for determining our management fees. Our assets under management consist of:

- the total fair market value of the real estate properties and other assets either wholly-owned or held by joint ventures and other entities in which our sponsored funds or investment vehicles and client accounts have invested or to which they have provided financing. Committed (but unfunded) capital from investors in our sponsored funds is not included in this component of our AUM. The value of development properties is included at estimated completion cost. In the case of real estate operating companies, the total value of real properties controlled by the companies, generally through joint ventures, is included in AUM; and
- the net asset value of our managed securities portfolios, including investments (which may be comprised of committed but uncalled capital) in private real estate funds under our fund of funds investments.

Our calculation of AUM may differ from the calculations of other asset managers, and as a result, this measure may not be comparable to similar measures presented by other asset managers.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Revenue increased by \$7.8 million, or 2.1%, for the year ended December 31, 2017 as compared to the year ended December 31, 2016, primarily driven by higher carried interest revenue. Foreign currency translation had a \$1.6 million negative impact on total revenue during the year ended December 31, 2017, primarily driven by weakness in the British pound sterling, partially offset by strength in the euro.

Operating, administrative and other expenses decreased by \$11.4 million, or 3.8%, for the year ended December 31, 2017 as compared to the same period in 2016, primarily driven by the impact of \$21.3 million of costs incurred during the year ended December 31, 2016 in connection with our cost-elimination project that did not recur during the year ended December 31, 2017. This was partly offset by higher carried interest expense incurred in 2017. Foreign currency had a \$0.1 million net positive impact on total operating expenses during the year ended December 31, 2017, which included a \$0.7 million positive impact from foreign currency translation, most offset by \$0.6 million of unfavorable foreign currency transaction activity over the year ended December 31, 2016 (part of which related to net hedging activity in 2016, which did not recur in 2017).

A roll forward of our AUM by product type for the year ended December 31, 2017 is as follows (dollars in billions):

	Funds	Separate Accounts	Securities	Total
Balance at January 1, 2017	\$ 31.6	\$ 37.5	\$ 17.5	\$ 86.6
Inflows	5.8	17.5	1.9	25.2
Outflows	(5.9)	(4.9)	(6.0)	(16.8)
Market appreciation (depreciation)	0.2	6.6	1.4	8.2
Balance at December 31, 2017	<u>\$ 31.7</u>	<u>\$ 56.7</u>	<u>\$ 14.8</u>	<u>\$ 103.2</u>

We describe above how we calculate AUM. Also, as noted above, our calculation of AUM may differ from the calculations of other asset managers, and as a result, this measure may not be comparable to similar measures presented by other asset managers.

Development Services

The following table summarizes our results of operations for our Development Services operating segment for the years ended December 31, 2018, 2017 and 2016 (dollars in thousands):

	Year Ended December 31,					
	2018		2017		2016	
			(As Adjusted) (1)		(As Adjusted) (1)	
Revenue:						
Property management	\$ 8,666	8.6 %	\$ 13,914	17.5 %	\$ 9,502	13.4 %
Leasing	4,683	4.7 %	4,051	5.1 %	4,436	6.2 %
Capital Markets:						
Sales	650	0.6 %	977	1.2 %	1,333	1.9 %
Other:						
Development services	86,320	86.1 %	60,513	76.2 %	55,638	78.5 %
Total revenue	<u>100,319</u>	<u>100.0 %</u>	<u>79,455</u>	<u>100.0 %</u>	<u>70,909</u>	<u>100.0 %</u>
Costs and expenses:						
Operating, administrative and other	228,988	228.3 %	159,223	200.4 %	139,160	196.3 %
Depreciation and amortization	828	0.8 %	2,073	2.6 %	2,469	3.5 %
Gain on disposition of real estate	14,874	14.8 %	19,828	25.0 %	15,862	22.4 %
Operating loss	(114,623)	(114.3 %)	(62,013)	(78.0 %)	(54,858)	(77.4 %)
Equity income from unconsolidated subsidiaries	302,400	301.5 %	181,545	228.5 %	170,176	240.0 %
Less: Net income attributable to non-controlling interests	126	0.1 %	123	0.2 %	4,356	6.1 %
Add-back: Depreciation and amortization	828	0.8 %	2,073	2.6 %	2,469	3.5 %
EBITDA and Adjusted EBITDA	<u>\$ 188,479</u>	<u>187.9 %</u>	<u>\$ 121,482</u>	<u>152.9 %</u>	<u>\$ 113,431</u>	<u>160.0 %</u>

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report for more information.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Revenue increased by \$20.9 million, or 26.3%, for the year ended December 31, 2018 as compared to the year ended December 31, 2017, primarily driven by higher development and incentive fees during the year ended December 31, 2018.

Operating, administrative and other expenses increased by \$69.8 million, or 43.8%, for the year ended December 31, 2018 as compared to the same period in 2017. This increase was primarily driven by higher payroll-related costs, particularly increased bonus expense during the year ended December 31, 2018 due to improved performance (property sales reflected in equity income from unconsolidated subsidiaries were significantly higher during the year ended December 31, 2018).

As of December 31, 2018, development projects in process totaled \$9.0 billion, up \$0.2 billion from third-quarter 2018. The pipeline increased by \$0.1 billion during the fourth quarter to \$3.7 billion.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Revenue increased by \$8.5 million, or 12.1%, for the year ended December 31, 2017 as compared to the year ended December 31, 2016, primarily driven by higher management and development fees during the year ended December 31, 2017.

Operating, administrative and other expenses increased by \$20.1 million, or 14.4%, for the year ended December 31, 2017 as compared to the same period in 2016. This increase was primarily driven by higher payroll-related costs, including increased bonus expense during the year ended December 31, 2017 due to improved operating performance (property sales reflected in equity income from unconsolidated subsidiaries and gain on disposition of real estate were significantly higher during the year ended December 31, 2017).

As of December 31, 2017, development projects in process totaled \$6.8 billion, up \$0.2 billion from year-end 2016. The new projects pipeline totaled \$3.8 billion at December 31, 2017, down \$0.4 billion from year-end 2016.

Liquidity and Capital Resources

We believe that we can satisfy our working capital and funding requirements with internally generated cash flow and, as necessary, borrowings under our revolving credit facility. Our expected capital requirements for 2019 include up to approximately \$210 million of anticipated capital expenditures, net of tenant concessions. As of December 31, 2018, we had aggregate commitments of \$53.7 million to fund future co-investments in our Global Investment Management business, \$24.3 million of which is expected to be funded in 2019. Additionally, as of December 31, 2018, we are committed to fund \$34.7 million of additional capital to unconsolidated subsidiaries within our Development Services business, which we may be required to fund at any time. As of December 31, 2018, we had \$2.8 billion of borrowings available under our \$2.8 billion revolving credit facility.

We have historically relied on our internally generated cash flow and our revolving credit facility to fund our working capital, capital expenditure and general investment requirements (including strategic in-fill acquisitions) and have not sought other external sources of financing to help fund these requirements. In the absence of extraordinary events or a large strategic acquisition, we anticipate that our cash flow from operations and our revolving credit facility would be sufficient to meet our anticipated cash requirements for the foreseeable future, and at a minimum for the next 12 months. We may seek to take advantage of market opportunities to refinance existing debt instruments, as we have done in the past, with new debt instruments at interest rates, maturities and terms we deem attractive. We may also, from time to time in our sole discretion, purchase, redeem, or retire our existing senior notes, through tender offers, in privately negotiated or open market transactions, or otherwise.

In March 2018, we redeemed the \$800.0 million aggregate outstanding principal amount of our 5.00% senior notes in full. We funded this redemption with \$550.0 million of borrowings from our tranche A term loan facility and borrowings from our revolving credit facility under our credit agreement.

As noted above, we believe that any future significant acquisitions that we may make could require us to obtain additional debt or equity financing. In the past, we have been able to obtain such financing for material transactions on terms that we believed to be reasonable. However, it is possible that we may not be able to obtain acquisition financing on favorable terms, or at all, in the future if we decide to make any further significant acquisitions.

Our long-term liquidity needs, other than those related to ordinary course obligations and commitments such as operating leases, are generally comprised of two elements. The first is the repayment of the outstanding and anticipated principal amounts of our long-term indebtedness. We are unable to project with certainty whether our long-term cash flow from operations will be sufficient to repay our long-term debt when it comes due. If our cash flow is insufficient, then we expect that we would need to refinance such indebtedness or otherwise amend its terms to extend the maturity dates. We cannot make any assurances that such refinancing or amendments would be available on attractive terms, if at all.

The second long-term liquidity need is the payment of obligations related to acquisitions. Our acquisition structures often include deferred and/or contingent purchase price payments in future periods that are subject to the passage of time or achievement of certain performance metrics and other conditions. As of December 31, 2018 and 2017, we had accrued \$136.3 million (\$41.7 million of which was a current liability) and \$83.6 million (\$23.2 million of which was a current liability), respectively, of deferred purchase consideration, which was included in accounts payable and accrued expenses and in other long-term liabilities in the accompanying consolidated balance sheets set forth in Item 8 of this Annual Report.

In addition, on October 27, 2016, we announced that our board of directors had authorized the company to repurchase up to an aggregate of \$250.0 million of our Class A common stock over three years. As of December 31, 2018, we have spent \$161.0 million to repurchase 3,980,656 shares of our Class A common stock with an average price paid per share of \$40.43. During the month of January 2019, we spent \$45.1 million to repurchase an additional 1,144,449 shares of our Class A common stock with an average price paid per share of \$39.38. Additionally, on February 28, 2019, our board of directors authorized a new program for the company to repurchase up to \$300.0 million of our Class A common stock over three years, effective March 11, 2019. The existing program will terminate upon the effectiveness of the new program. Our stock repurchases have been funded with cash on hand. The timing of future repurchases and the actual amounts repurchased will depend on a variety of factors, including the market price of our common stock, general market and economic conditions and other factors.

Historical Cash Flows

Operating Activities

Net cash provided by operating activities totaled \$1.1 billion for the year ended December 31, 2018, an increase of \$236.8 million as compared to the year ended December 31, 2017. The increase in net cash provided by operating activities was primarily due to improved operating performance as well as a higher distribution of earnings from unconsolidated subsidiaries during the year ended December 31, 2018.

Net cash provided by operating activities totaled \$894.4 million for the year ended December 31, 2017, an increase of \$277.4 million as compared to the year ended December 31, 2016. The increase in net cash provided by operating activities was primarily due to improved operating performance.

Investing Activities

Net cash used in investing activities totaled \$560.7 million for the year ended December 31, 2018, an increase of \$258.1 million as compared to the year ended December 31, 2017. The increase in cash used in investing activities was primarily driven by \$204.1 million more incurred for acquisitions (driven by the FacilitySource Acquisition) and an increase of \$49.8 million in capital expenditures during the year ended December 31, 2018.

Net cash used in investing activities totaled \$302.6 million for the year ended December 31, 2017, an increase of \$152.1 million as compared to the year ended December 31, 2016. The increase in net cash used in investing activities was primarily driven by \$97.4 million more invested in in-fill acquisitions during the year ended December 31, 2017 as well as the impact of \$44.3 million of net proceeds from disposition of real estate held for investment in 2016 that did not recur in the current year.

Financing Activities

Net cash used in financing activities totaled \$506.6 million for the year ended December 31, 2018, a decrease of \$121.1 million as compared to the year ended December 31, 2017. This decrease was primarily due to \$1.1 billion of higher net borrowings from our senior term loans during the year ended December 31, 2018, largely offset by the full redemption of the \$800.0 million aggregate outstanding principal amount of our 5.00% senior notes (including \$20.0 million premium) as well as the \$161.0 million repurchase of our common stock during the year ended December 31, 2018.

Net cash used in financing activities totaled \$627.7 million for the year ended December 31, 2017, an increase of \$407.1 million as compared to the year ended December 31, 2016. The increase was primarily due to \$415.6 million of higher net repayments of senior term loans during the year ended December 31, 2017.

Summary of Contractual Obligations and Other Commitments

The following is a summary of our various contractual obligations and other commitments as of December 31, 2018 (dollars in thousands):

Contractual Obligations	Payments Due by Period				
	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
Total gross long-term debt (1)	\$ 1,787,134	\$ 3,146	\$ 536	\$ 758,452	\$ 1,025,000
Short-term borrowings (2)	1,328,761	1,328,761	—	—	—
Operating leases (3)	1,489,223	238,954	421,556	317,972	510,741
Defined benefit pension liability (4)	112,990	—	—	—	112,990
Total gross notes payable on real estate (non-recourse) (5)	6,576	3,096	3,480	—	—
Deferred purchase consideration (6)	136,349	41,716	53,711	40,922	—
Total Contractual Obligations	\$ 4,861,033	\$ 1,615,673	\$ 479,283	\$ 1,117,346	\$ 1,648,731

Other Commitments	Amount of Other Commitments Expiration				
	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
Self-insurance reserves (7)	\$ 112,977	\$ 112,977	\$ —	\$ —	\$ —
Tax liabilities (8)	99,927	8,199	24,743	38,879	28,106
Co-investments (3) (9)	88,466	59,045	27,477	495	1,449
Letters of credit (3)	74,949	74,949	—	—	—
Guarantees (3) (10)	56,287	56,287	—	—	—
Total Other Commitments	\$ 432,606	\$ 311,457	\$ 52,220	\$ 39,374	\$ 29,555

- (1) Reflects gross outstanding long-term debt balances as of December 31, 2018, assumed to be paid at maturity, excluding unamortized discount, premium and deferred financing costs. See Note 11 of our Notes to the Consolidated Financial Statements set forth in Item 8 of this Annual Report. Figures do not include scheduled interest payments. Assuming each debt obligation is held until maturity, we estimate that we will make the following interest payments (dollars in thousands): 2019 – \$65,083; 2020 to 2021 – \$130,166; 2022 to 2023 – \$118,296 and thereafter – \$90,145.
- (2) Represents our warehouse lines of credit, which are recourse only to our wholly-owned subsidiary CBRE Capital Markets, Inc. (CBRE Capital Markets) and are secured by our related warehouse receivables. See Notes 5 and 11 of our Notes to the Consolidated Financial Statements set forth in Item 8 of this Annual Report.
- (3) See Note 12 of our Notes to the Consolidated Financial Statements set forth in Item 8 of this Annual Report.
- (4) See Note 13 of our Notes to the Consolidated Financial Statements set forth in Item 8 of this Annual Report. These obligations are related, either wholly or partially, to the future retirement of our employees and such retirement dates are not predictable. An undeterminable portion of this amount will be paid in years one through five.
- (5) Amounts do not include scheduled interest payments. The notes have either fixed or variable interest rates, ranging from 4.25% to 5.25% at December 31, 2018.
- (6) Represents deferred obligations related to previous acquisitions, which are included in accounts payable and accrued expenses and other long-term liabilities in the consolidated balance sheets at December 31, 2018 set forth in Item 8 of this Annual Report.
- (7) Represents outstanding reserves for claims under certain insurance programs, which are included in other current and other long-term liabilities in the consolidated balance sheets at December 31, 2018 set forth in Item 8 of this Annual Report. Due to the nature of this item, payments could be due at any time upon the occurrence of certain events. Accordingly, the entire balance has been reflected as expiring in less than one year.

- (8) As of December 31, 2018, our current and non-current tax liabilities, including interest and penalties, totaled \$81.7 million. Of this amount, we can reasonably estimate that \$0.8 million will require cash settlement in less than one year. We are unable to reasonably estimate the timing of the effective settlement of tax positions for the remaining \$80.9 million. In addition, in connection with the Tax Act, as of December 31, 2018, we have a remaining federal tax liability of \$99.1 million (of which \$7.4 million is due in less than one year) associated with the transition tax on mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017. The federal tax liability for the transition tax can be paid in annual interest-free installments over a period of eight years through 2025, which we have elected to do. See Note 14 of our Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.
- (9) Includes \$53.7 million related to our Global Investment Management segment, \$24.3 million of which is expected to be funded in 2019, and \$34.7 million related to our Development Services segment (callable at any time).
- (10) Due to the nature of guarantees, payments could be due at any time upon the occurrence of certain triggering events, including default. Accordingly, all guarantees are reflected as expiring in less than one year.

Indebtedness

Our level of indebtedness increases the possibility that we may be unable to pay the principal amount of our indebtedness and other obligations when due. In addition, we may incur additional debt from time to time to finance strategic acquisitions, investments, joint ventures or for other purposes, subject to the restrictions contained in the documents governing our indebtedness. If we incur additional debt, the risks associated with our leverage, including our ability to service our debt, would increase.

Long-Term Debt

We maintain credit facilities with third-party lenders, which we use for a variety of purposes. On January 9, 2015, CBRE Services, Inc. (CBRE Services), our wholly-owned subsidiary, entered into the 2015 Credit Agreement with a syndicate of banks jointly led by Merrill Lynch, Pierce, Fenner & Smith Incorporated, J.P. Morgan Securities LLC and Credit Suisse AG (CS). On March 21, 2016, CBRE Services executed an amendment to the 2015 Credit Agreement that, among other things, extended the maturity of the revolving credit facility to March 2021 and increased the borrowing capacity under the revolving credit facility by \$200.0 million. On October 31, 2017, we entered into a new Credit Agreement (the 2017 Credit Agreement), which refinanced and replaced the 2015 Credit Agreement. We used \$200.0 million of borrowings from the tranche A term loan facility and \$83.0 million of revolving credit facility borrowings under the 2017 Credit Agreement, in addition to cash on hand, to repay all amounts outstanding under the 2015 Credit Agreement. On December 20, 2018, CBRE Global Acquisition Company, a wholly-owned subsidiary of CBRE Services, entered into an incremental term loan assumption agreement with a syndicate of banks jointly led by Wells Fargo Bank and National Westminster Bank plc to establish a new euro term loan facility under the 2017 Credit Agreement in an aggregate principal amount of 400.0 million euros. The proceeds of the new euro term loan facility were used to repay a portion of the U.S. dollar denominated term loans outstanding under the 2017 Credit Agreement.

The 2017 Credit Agreement is a senior unsecured credit facility that is jointly and severally guaranteed by us and certain of our subsidiaries. The 2017 Credit Agreement currently provides for the following: (1) a \$2.8 billion revolving credit facility, which includes the capacity to obtain letters of credit and swingline loans and matures on October 31, 2022, (2) a \$750.0 million delayed draw tranche A term loan facility, requiring quarterly principal payments, which begin on March 5, 2018 and continue through maturity on October 31, 2022, provided that in the event that our leverage ratio (as defined in the 2017 Credit Agreement) is less than or equal to 2.50 to 1.00 on the last day of the fiscal quarter immediately preceding any such payment date, no such quarterly principal payment shall be required on such date and (3) a 400.0 million euro term loan facility due and payable in full at maturity on December 20, 2023.

On August 13, 2015, CBRE Services issued \$600.0 million in aggregate principal amount of 4.875% senior notes due March 1, 2026 at a price equal to 99.24% of their face value. The 4.875% senior notes are unsecured obligations of CBRE Services, senior to all of its current and future subordinated indebtedness, but effectively subordinated to all of its current and future secured indebtedness. The 4.875% senior notes are jointly and severally guaranteed on a senior basis by us and each domestic subsidiary of CBRE Services that guarantees our 2017 Credit Agreement. Interest accrues at a rate of 4.875% per year and is payable semi-annually in arrears on March 1 and September 1.

On September 26, 2014, CBRE Services issued \$300.0 million in aggregate principal amount of 5.25% senior notes due March 15, 2025. On December 12, 2014, CBRE Services issued an additional \$125.0 million in aggregate principal amount of 5.25% senior notes due March 15, 2025 at a price equal to 101.5% of their face value, plus interest deemed to have accrued from September 26, 2014. The 5.25% senior notes are unsecured obligations of CBRE Services, senior to all of its current and future subordinated indebtedness, but effectively subordinated to all of its current and future secured indebtedness. The 5.25% senior notes are jointly and severally guaranteed on a senior basis by us and each domestic subsidiary of CBRE Services that guarantees our 2017 Credit Agreement. Interest accrues at a rate of 5.25% per year and is payable semi-annually in arrears on March 15 and September 15.

On March 14, 2013, CBRE Services issued \$800.0 million in aggregate principal amount of 5.00% senior notes due March 15, 2023. The 5.00% senior notes were unsecured obligations of CBRE Services, senior to all of its current and future subordinated indebtedness, but effectively subordinated to all of its current and future secured indebtedness. The 5.00% senior notes were jointly and severally guaranteed on a senior basis by us and each domestic subsidiary of CBRE Services that guaranteed our 2017 Credit Agreement. Interest accrued at a rate of 5.00% per year and was payable semi-annually in arrears on March 15 and September 15. The 5.00% senior notes were redeemable at our option, in whole or in part, on March 15, 2018 at a redemption price of 102.5% of the principal amount on that date. We redeemed these notes in full on March 15, 2018 and incurred charges of \$28.0 million, including a premium of \$20.0 million and the write-off of \$8.0 million of unamortized deferred financing costs. We funded this redemption with \$550.0 million of borrowings from our tranche A term loan facility and borrowings from our revolving credit facility under our 2017 Credit Agreement.

The indentures governing our 4.875% senior notes and 5.25% senior notes contain restrictive covenants that, among other things, limit our ability to create or permit liens on assets securing indebtedness, enter into sale/leaseback transactions and enter into consolidations or mergers.

For additional information on all of our long-term debt, see Note 11 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

Short-Term Borrowings

Our wholly-owned subsidiary, CBRE Capital Markets, has the following warehouse lines of credit: i) credit agreements with JP Morgan Chase Bank, N.A., Bank of America, TD Bank, N.A. and Capital One, N.A. for the purpose of funding mortgage loans that will be resold; and ii) a funding arrangement with Federal National Mortgage Association, or Fannie Mae, for the purpose of selling a percentage of certain closed multifamily loans to Fannie Mae. For more information on these warehouse lines, see Notes 5 and 11 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Our exposure to market risk primarily consists of foreign currency exchange rate fluctuations related to our international operations and changes in interest rates on debt obligations. We manage such risk primarily by managing the amount, sources, and duration of our debt funding and by using derivative financial instruments. We apply the “*Derivatives and Hedging*” Topic of the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) (Topic 815) when accounting for derivative financial instruments. In all cases, we view derivative financial instruments as a risk management tool and, accordingly, do not use derivatives for trading or speculative purposes.

Exchange Rates

Our foreign operations expose us to fluctuations in foreign exchange rates. These fluctuations may impact the value of our cash receipts and payments in terms of our functional (reporting) currency, which is U.S. dollars. See the discussion of international operations, which is included in Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” under the caption “International Operations” and is incorporated by reference herein.

Interest Rates

We manage our interest expense by using a combination of fixed and variable rate debt. We enter into interest rate swap agreements to attempt to hedge the variability of future interest payments due to changes in interest rates.

The estimated fair value of our senior term loans was approximately \$757.0 million at December 31, 2018. Based on dealers' quotes, the estimated fair values of our 4.875% senior notes and 5.25% senior notes were \$616.4 million and \$443.7 million, respectively, at December 31, 2018.

We utilize sensitivity analyses to assess the potential effect on our variable rate debt. If interest rates were to increase 100 basis points on our outstanding variable rate debt at December 31, 2018, the net impact of the additional interest cost would be a decrease of \$5.6 million on pre-tax income and a decrease of \$5.6 million in cash provided by operating activities for the year ended December 31, 2018.

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AND FINANCIAL STATEMENT SCHEDULES

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All other schedules are omitted because they are either not applicable, not required or the information required is included in the Consolidated Financial Statements, including the notes thereto.

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
CBRE Group, Inc.:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of CBRE Group, Inc. and subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of operations, comprehensive income, cash flows, and equity for each of the years in the three-year period ended December 31, 2018, and the related notes and financial statement schedule II (collectively, the consolidated financial statements). We also have audited 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.

In our opinion, the consolidated financial statements referred to above 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 years in the three-year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles. Also 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 the Committee of Sponsoring Organizations of the Treadway Commission.

CBRE Group, Inc. acquired FacilitySource during 2018 (the Acquired Business) as defined in Note 4 to the consolidated financial statements, and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2018, the Acquired Business's internal control over financial reporting associated with total assets of \$372.5 million and total revenues of \$121.6 million included in the consolidated financial statements of CBRE Group, Inc. and subsidiaries as of and for the year ended December 31, 2018. Our audit of internal control over financial reporting of the Company also excluded an evaluation of the internal control over financial reporting of the Acquired Business.

Change in Accounting Principle

As discussed in Note 3 to the consolidated financial statements, the Company has changed its method of accounting for revenue from contracts with customers in 2018 due to the adoption of Accounting Standards Codification Topic 606, *Revenue from Contracts with Customers*.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, 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 Report on Internal Control Over Financial Reporting*. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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/ KPMG LLP

We have served as the Company's auditor since 2008.

Los Angeles, California
March 1, 2019

CBRE GROUP, INC.
CONSOLIDATED BALANCE SHEETS
(Dollars in thousands, except share data)

	December 31,	
	2018	2017 (As Adjusted)
ASSETS		
Current Assets:		
Cash and cash equivalents	\$ 777,219	\$ 751,774
Restricted cash	86,725	73,045
Receivables, less allowance for doubtful accounts of \$60,348 and \$46,789 at December 31, 2018 and 2017, respectively	3,668,591	3,112,289
Warehouse receivables	1,342,468	928,038
Contract assets	307,020	273,053
Prepaid expenses	254,892	215,336
Income taxes receivable	71,684	49,628
Other current assets	245,611	227,421
Total Current Assets	6,754,210	5,630,584
Property and equipment, net	721,692	617,739
Goodwill	3,652,309	3,254,740
Other intangible assets, net of accumulated amortization of \$1,180,393 and \$1,000,738 at December 31, 2018 and 2017, respectively	1,441,308	1,399,112
Investments in unconsolidated subsidiaries	216,174	238,001
Deferred tax assets, net	51,703	98,746
Other assets, net	619,397	479,474
Total Assets	\$ 13,456,793	\$ 11,718,396
LIABILITIES AND EQUITY		
Current Liabilities:		
Accounts payable and accrued expenses	\$ 1,919,827	\$ 1,573,672
Accrued bonus and profit sharing	1,189,395	1,078,345
Compensation and employee benefits payable	1,121,179	904,434
Contract liabilities	82,227	100,615
Income taxes payable	68,100	70,634
Short-term borrowings:		
Warehouse lines of credit (which fund loans that U.S. Government Sponsored Enterprises have committed to purchase)	1,328,761	910,766
Other	—	16
Total short-term borrowings	1,328,761	910,782
Current maturities of long-term debt	3,146	8
Other current liabilities	90,745	74,454
Total Current Liabilities	5,803,380	4,712,944
Long-term debt, net of current maturities	1,767,260	1,999,603
Non-current tax liabilities	172,626	140,792
Deferred tax liabilities, net	107,425	147,218
Other liabilities	596,200	543,225
Total Liabilities	8,446,891	7,543,782
Commitments and contingencies	—	—
Equity:		
CBRE Group, Inc. Stockholders' Equity:		
Class A common stock; \$0.01 par value; 525,000,000 shares authorized; 336,912,783 and 339,459,138 shares issued and outstanding at December 31, 2018 and 2017, respectively	3,369	3,395
Additional paid-in capital	1,149,013	1,220,508
Accumulated earnings	4,504,684	3,443,007
Accumulated other comprehensive loss	(718,269)	(552,414)
Total CBRE Group, Inc. Stockholders' Equity	4,938,797	4,114,496
Non-controlling interests	71,105	60,118
Total Equity	5,009,902	4,174,614
Total Liabilities and Equity	\$ 13,456,793	\$ 11,718,396

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

CBRE GROUP, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(Dollars in thousands, except share data)

	Year Ended December 31,		
	2018	2017	2016
		(As Adjusted)	(As Adjusted)
Revenue	\$ 21,340,088	\$ 18,628,787	\$ 17,369,108
Costs and expenses:			
Cost of services	16,449,212	14,305,099	13,420,911
Operating, administrative and other	3,365,773	2,858,720	2,780,301
Depreciation and amortization	451,988	406,114	366,927
Total costs and expenses	20,266,973	17,569,933	16,568,139
Gain on disposition of real estate	14,874	19,828	15,862
Operating income	1,087,989	1,078,682	816,831
Equity income from unconsolidated subsidiaries	324,664	210,207	197,351
Other income	93,020	9,405	4,688
Interest income	8,585	9,853	8,051
Interest expense	107,270	136,814	144,851
Write-off of financing costs on extinguished debt	27,982	—	—
Income before provision for income taxes	1,379,006	1,171,333	882,070
Provision for income taxes	313,058	467,757	296,900
Net income	1,065,948	703,576	585,170
Less: Net income attributable to non-controlling interests	2,729	6,467	12,091
Net income attributable to CBRE Group, Inc.	\$ 1,063,219	\$ 697,109	\$ 573,079
<i>Basic income per share:</i>			
Net income per share attributable to CBRE Group, Inc.	\$ 3.13	\$ 2.06	\$ 1.71
Weighted average shares outstanding for basic income per share	339,321,056	337,658,017	335,414,831
<i>Diluted income per share:</i>			
Net income per share attributable to CBRE Group, Inc.	\$ 3.10	\$ 2.05	\$ 1.69
Weighted average shares outstanding for diluted income per share	343,122,741	340,783,556	338,424,563

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

CBRE GROUP, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Dollars in thousands)

	Year Ended December 31,		
	2018	2017	2016
		(As Adjusted)	(As Adjusted)
Net income	\$ 1,065,948	\$ 703,576	\$ 585,170
Other comprehensive (loss) income:			
Foreign currency translation (loss) gain	(161,384)	218,001	(235,614)
Adoption of Accounting Standards Update 2016-01, net of \$2,141 income tax benefit for the year ended December 31, 2018	(3,964)	—	—
Amounts reclassified from accumulated other comprehensive loss to interest expense, net of \$876, \$3,066 and \$4,443 income tax expense for the years ended December 31, 2018, 2017 and 2016, respectively	2,439	4,964	6,839
Unrealized gains (losses) on interest rate swaps, net of \$254 and \$362 income tax expense and \$929 income tax benefit for the years ended December 31, 2018, 2017 and 2016, respectively	708	585	(1,431)
Unrealized holding (losses) gains on available for sale debt securities, net of \$349 income tax benefit and \$1,685 and \$250 income tax expense for the years ended December 31, 2018, 2017 and 2016, respectively	(971)	2,737	384
Pension liability adjustments, net of \$269 and \$2,601 income tax expense and \$13,057 income tax benefit for the years ended December 31, 2018, 2017 and 2016, respectively	1,315	12,701	(63,749)
Other, net of \$3,550 income tax benefit, \$342 income tax expense and \$3,705 income tax benefit for the years ended December 31, 2018, 2017 and 2016, respectively	(5,070)	364	(12,091)
Total other comprehensive (loss) income	(166,927)	239,352	(305,662)
Comprehensive income	899,021	942,928	279,508
Less: Comprehensive income attributable to non-controlling interests	1,657	6,879	12,108
Comprehensive income attributable to CBRE Group, Inc.	<u>\$ 897,364</u>	<u>\$ 936,049</u>	<u>\$ 267,400</u>

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

CBRE GROUP, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Dollars in thousands)

	Year Ended December 31,		
	2018	2017 (As Adjusted)	2016 (As Adjusted)
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net income	\$ 1,065,948	\$ 703,576	\$ 585,170
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	451,988	406,114	366,927
Amortization and write-off of financing costs on extinguished debt	35,175	10,783	10,935
Gains related to mortgage servicing rights, premiums on loan sales and sales of other assets	(229,376)	(200,386)	(201,362)
Gain associated with remeasuring our investment in a previously unconsolidated subsidiary to fair value as of the date we acquired the remaining interest	(100,420)	—	—
Gains on disposition of real estate held for investment	(3,197)	—	(9,901)
Net realized and unrealized losses (gains) from investments	7,400	(9,405)	(4,688)
Equity income from unconsolidated subsidiaries	(324,664)	(210,207)	(197,351)
Provision for doubtful accounts	19,760	8,044	4,711
Deferred income taxes	(11,401)	(7,161)	(9,403)
Compensation expense for equity awards	128,171	93,087	63,484
Proceeds from sale of mortgage loans	20,230,676	18,052,756	15,833,633
Origination of mortgage loans	(20,591,602)	(17,655,104)	(15,297,471)
Increase (decrease) in warehouse lines of credit	417,995	(343,887)	(496,128)
Distribution of earnings from unconsolidated subsidiaries	336,925	211,855	195,702
Tenant concessions received	38,400	19,337	22,547
Purchase of equity securities	(99,789)	(110,570)	(87,765)
Proceeds from sale of equity securities	75,120	68,547	105,866
Proceeds from securities sold, not yet purchased	12,721	13,320	17,932
Securities purchased to cover short sales	(12,530)	(13,840)	(19,017)
Increase in receivables, prepaid expenses and other assets (including contract assets)	(777,630)	(540,117)	(336,342)
Increase in accounts payable and accrued expenses and other liabilities (including contract liabilities)	273,782	159,145	15,382
Increase in compensation and employee benefits payable and accrued bonus and profit sharing	270,371	148,714	123,653
(Increase) decrease in net income taxes receivable/payable	(47,074)	108,151	(6,334)
Other operating activities, net	(35,500)	(18,341)	(63,195)
Net cash provided by operating activities	<u>1,131,249</u>	<u>894,411</u>	<u>616,985</u>
CASH FLOWS FROM INVESTING ACTIVITIES:			
Capital expenditures	(227,803)	(178,042)	(191,205)
Acquisition of businesses, including net assets acquired, intangibles and goodwill, net of cash acquired	(322,573)	(118,427)	(21,077)
Contributions to unconsolidated subsidiaries	(62,802)	(68,700)	(66,816)
Distributions from unconsolidated subsidiaries	61,709	63,664	46,775
Net proceeds from disposition of real estate held for investment	14,174	—	44,326
Purchase of equity securities	(21,402)	(15,584)	(15,506)
Proceeds from sale of equity securities	16,314	15,587	16,954
Purchase of available for sale debt securities	(23,360)	(19,280)	(22,155)
Proceeds from the sale of available for sale debt securities	5,792	15,790	18,097
Other investing activities, net	(733)	2,392	40,083
Net cash used in investing activities	<u>(560,684)</u>	<u>(302,600)</u>	<u>(150,524)</u>

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

CBRE GROUP, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Dollars in thousands)

	Year Ended December 31,		
	2018	2017	2016
		(As Adjusted)	(As Adjusted)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from senior term loans	1,002,745	200,000	—
Repayment of senior term loans	(450,000)	(751,876)	(136,250)
Proceeds from revolving credit facility	3,258,000	1,521,000	2,909,000
Repayment of revolving credit facility	(3,258,000)	(1,521,000)	(2,909,000)
Repayment of 5.00% senior notes (including premium)	(820,000)	—	—
Proceeds from notes payable on real estate	7,599	4,333	25,001
Repayment of notes payable on real estate	(19,058)	(12,556)	(38,046)
Repayment of debt assumed in acquisition of FacilitySource	(26,295)	—	—
Repurchase of common stock	(161,034)	—	—
Acquisition of businesses (cash paid for acquisitions more than three months after purchase date)	(18,660)	(24,006)	(21,034)
Units repurchased for payment of taxes on equity awards	(29,386)	(29,549)	(27,426)
Non-controlling interest contributions	25,355	5,301	2,272
Non-controlling interest distributions	(13,413)	(8,715)	(19,133)
Payment of financing costs	(2,088)	(7,999)	(5,618)
Other financing activities, net	(2,365)	(2,675)	(443)
Net cash used in financing activities	(506,600)	(627,742)	(220,677)
Effect of currency exchange rate changes on cash and cash equivalents and restricted cash	(24,840)	29,338	(27,539)
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS AND RESTRICTED CASH	39,125	(6,593)	218,245
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT BEGINNING OF PERIOD	824,819	831,412	613,167
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT END OF PERIOD	\$ 863,944	\$ 824,819	\$ 831,412
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:			
Cash paid during the period for:			
Interest	\$ 104,165	\$ 117,164	\$ 125,800
Income taxes, net	\$ 375,849	\$ 356,997	\$ 294,848

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

CBRE GROUP, INC.
CONSOLIDATED STATEMENTS OF EQUITY
(Dollars in thousands)

	CBRE Group, Inc. Shareholders							
	Shares	Class A common stock	Additional paid-in capital	Accumulated earnings	Accumulated other comprehensive loss		Non- controlling interests	Total
					Minimum pension liability	Foreign currency translation and other		
Balance at December 31, 2015	334,230,496	\$ 3,342	\$ 1,106,758	\$ 2,088,227	\$ (101,921)	\$ (383,754)	\$ 46,418	\$ 2,759,070
Adoption of new revenue recognition guidance, net of tax (see Note 3)	—	—	—	87,885	—	—	—	87,885
Net income (As Adjusted)	—	—	—	573,079	—	—	12,091	585,170
Adoption of Accounting Standards Update 2016-09, net of tax (see Note 2)	—	—	4,975	(3,294)	—	—	—	1,681
Pension liability adjustments, net of tax	—	—	—	—	(63,749)	—	—	(63,749)
Stock options exercised	89,727	1	914	—	—	—	—	915
Restricted stock awards vesting	2,955,142	30	(30)	—	—	—	—	—
Compensation expense for equity awards	—	—	63,484	—	—	—	—	63,484
Units repurchased for payment of taxes on equity awards	—	—	(27,426)	—	—	—	—	(27,426)
Amounts reclassified from accumulated other comprehensive loss to interest expense, net of tax	—	—	—	—	—	6,839	—	6,839
Unrealized losses on interest rate swaps, net of tax	—	—	—	—	—	(1,431)	—	(1,431)
Unrealized holding gains on available for sale debt securities, net of tax	—	—	—	—	—	384	—	384
Foreign currency translation (loss) gain (As Adjusted)	—	—	—	—	—	(235,631)	17	(235,614)
Contributions from non-controlling interests	—	—	—	—	—	—	2,272	2,272
Distributions to non-controlling interests	—	—	—	—	—	—	(19,133)	(19,133)
Other	4,084	—	(3,449)	—	—	(12,091)	1,093	(14,447)
Balance at December 31, 2016 (As Adjusted)	337,279,449	3,373	1,145,226	2,745,897	(165,670)	(625,684)	42,758	3,145,900
Net income (As Adjusted)	—	—	—	697,109	—	—	6,467	703,576
Pension liability adjustments, net of tax	—	—	—	—	12,701	—	—	12,701
Non-cash issuance of common stock related to acquisition	495,828	5	11,688	—	—	—	—	11,693
Restricted stock awards vesting	1,660,269	17	(17)	—	—	—	—	—
Compensation expense for equity awards	—	—	93,087	—	—	—	—	93,087
Units repurchased for payment of taxes on equity awards	—	—	(29,549)	—	—	—	—	(29,549)
Amounts reclassified from accumulated other comprehensive loss to interest expense, net of tax	—	—	—	—	—	4,964	—	4,964

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

CBRE GROUP, INC.
CONSOLIDATED STATEMENTS OF EQUITY
(Dollars in thousands)

CBRE Group, Inc. Shareholders								
	Shares	Class A common stock	Additional paid-in capital	Accumulated earnings	Accumulated other comprehensive loss		Non- controlling interests	Total
					Minimum pension liability	Foreign currency translation and other		
Unrealized gains on interest rate swaps, net of tax	—	—	—	—	—	585	—	585
Unrealized holding gains on available for sale debt securities, net of tax	—	—	—	—	—	2,737	—	2,737
Foreign currency translation gain (As Adjusted)	—	—	—	—	—	217,589	412	218,001
Contributions from non-controlling interests	—	—	—	—	—	—	5,301	5,301
Distributions to non-controlling interests	—	—	—	—	—	—	(8,715)	(8,715)
Acquisition of non-controlling interests	—	—	—	—	—	—	12,671	12,671
Other	23,592	—	73	1	—	364	1,224	1,662
Balance at December 31, 2017 (As Adjusted)	339,459,138	3,395	1,220,508	3,443,007	(152,969)	(399,445)	60,118	4,174,614
Net income	—	—	—	1,063,219	—	—	2,729	1,065,948
Adoption of Accounting Standards Update 2016-01, net of tax (see Note 3)	—	—	—	3,964	—	(3,964)	—	—
Pension liability adjustments, net of tax	—	—	—	—	1,315	—	—	1,315
Restricted stock awards vesting	1,424,462	14	(14)	—	—	—	—	—
Compensation expense for equity awards	—	—	128,171	—	—	—	—	128,171
Reclassification of stock incentive plan award from an equity award to a liability award	—	—	(9,074)	—	—	—	—	(9,074)
Units repurchased for payment of taxes on equity awards	—	—	(29,386)	—	—	—	—	(29,386)
Repurchase of common stock	(3,980,656)	(40)	(160,994)	—	—	—	—	(161,034)
Foreign currency translation loss	—	—	—	—	—	(160,312)	(1,072)	(161,384)
Amounts reclassified from accumulated other comprehensive loss to interest expense, net of tax	—	—	—	—	—	2,439	—	2,439
Unrealized gains on interest rate swaps, net of tax	—	—	—	—	—	708	—	708
Unrealized holding losses on available for sale debt securities, net of tax	—	—	—	—	—	(971)	—	(971)
Contributions from non-controlling interests	—	—	—	—	—	—	25,355	25,355
Distributions to non-controlling interests	—	—	—	—	—	—	(13,413)	(13,413)
Other	9,839	—	(198)	(5,506)	3,747	(8,817)	(2,612)	(13,386)
Balance at December 31, 2018	<u>336,912,783</u>	<u>\$ 3,369</u>	<u>\$ 1,149,013</u>	<u>\$ 4,504,684</u>	<u>\$ (147,907)</u>	<u>\$ (570,362)</u>	<u>\$ 71,105</u>	<u>\$ 5,009,902</u>

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

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Nature of Operations

CBRE Group, Inc., a Delaware corporation (which may be referred to in these financial statements as the “company”, “we”, “us” and “our”), was incorporated on February 20, 2001. We are the world’s largest commercial real estate services and investment firm, based on 2018 revenue, with leading global market positions in our leasing, property sales, occupier outsourcing and valuation businesses. Our business is focused on providing services to both occupiers of and investors in real estate. For occupiers, we provide facilities management, project management, transaction (both property sales and leasing) and consulting services, among others. For investors, we provide capital markets (property sales, commercial mortgage brokerage, loan origination and servicing), leasing, investment management, property management, valuation and development services, among others. We generate revenue from both management fees (large multi-year portfolio and per-project contracts) and commissions on transactions. As of December 31, 2018, we operated in more than 480 offices worldwide with over 90,000 employees, excluding independent affiliates, providing commercial real estate services under the “CBRE” brand name, investment management services under the “CBRE Global Investors” brand name and development services under the “Trammell Crow Company” brand name.

2. Significant Accounting Policies*Principles of Consolidation*

The accompanying consolidated financial statements include our accounts and those of our consolidated subsidiaries, which are comprised of variable interest entities in which we are the primary beneficiary and voting interest entities, in which we determined we have a controlling financial interest, under the “*Consolidations*” Topic of the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) (Topic 810). The equity attributable to non-controlling interests in subsidiaries is shown separately in the accompanying consolidated balance sheets. All significant intercompany accounts and transactions have been eliminated in consolidation.

Variable Interest Entities (VIEs)

We determine whether an entity is a VIE and, if so, whether it should be consolidated by utilizing judgments and estimates that are inherently subjective. Our determination of whether an entity in which we hold a direct or indirect variable interest is a VIE is based on several factors, including whether the entity’s total equity investment at risk upon inception is sufficient to finance the entity’s activities without additional subordinated financial support. We make judgments regarding the sufficiency of the equity at risk based first on a qualitative analysis, and then a quantitative analysis, if necessary.

We analyze any investments in VIEs to determine if we are the primary beneficiary. In evaluating whether we are the primary beneficiary, we evaluate our direct and indirect economic interests in the entity. A reporting entity is determined to be the primary beneficiary if it holds a controlling financial interest in the VIE. Determining which reporting entity, if any, has a controlling financial interest in a VIE is primarily a qualitative approach focused on identifying which reporting entity has both (1) the power to direct the activities of a VIE that most significantly impact such entity’s economic performance and (2) the obligation to absorb losses or the right to receive benefits from such entity that could potentially be significant to such entity. Performance of that analysis requires the exercise of judgment.

We consider a variety of factors in identifying the entity that holds the power to direct matters that most significantly impact the VIE’s economic performance including, but not limited to, the ability to direct financing, leasing, construction and other operating decisions and activities. In addition, we consider the rights of other investors to participate in those decisions, to replace the manager and to sell or liquidate the entity. We determine whether we are the primary beneficiary of a VIE at the time we become involved with a variable interest entity and reconsider that conclusion continually.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

We consolidate any VIE of which we are the primary beneficiary and disclose significant VIEs of which we are not the primary beneficiary, if any, as well as disclose our maximum exposure to loss related to VIEs that are not consolidated (see Note 6).

Voting Interest Entities (VOEs)

For VOEs, we consolidate the entity if we have a controlling financial interest. We have a controlling financial interest in a VOE if (i) for legal entities other than limited partnerships, we own a majority voting interest in the VOE or, for limited partnerships and similar entities, we own a majority of the entity's kick-out rights through voting limited partnership interests and (ii) non-controlling shareholders or partners do not hold substantive participating rights and no other conditions exist that would indicate that we do not control the entity.

Other Investments

Our investments in unconsolidated subsidiaries in which we have the ability to exercise significant influence over operating and financial policies, but do not control, or entities which are variable interest entities in which we are not the primary beneficiary are accounted for under the equity method. We eliminate transactions with such equity method subsidiaries to the extent of our ownership in such subsidiaries. Accordingly, our share of the earnings from these equity-method basis companies is included in consolidated net income. All other investments held on a long-term basis are valued at cost less any impairment in value.

Marketable Securities

We account for investments in marketable debt securities in accordance with the "Investments – Debt and Equity Securities" Topic of the FASB ASC (Topic 320). Debt securities are classified as held to maturity when we have the positive intent and ability to hold the securities to maturity. Marketable debt securities not classified as held to maturity are classified as available for sale. Available for sale debt securities are carried at their fair value and any difference between cost and fair value is recorded as an unrealized gain or loss, net of income taxes, and is reported as accumulated other comprehensive loss in the consolidated statement of equity. Premiums and discounts are recognized in interest using the effective interest method. Realized gains and losses and declines in value expected to be other-than-temporary on available for sale debt securities have not been significant. The cost of securities sold is based on the specific identification method. Interest and dividends on securities classified as available for sale are included in interest income.

As described in the "New Accounting Pronouncements" footnote 3, we adopted ASU 2016-01, "Financial Instruments – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities" effective January 1, 2018. As a result, all equity securities that do not result in consolidation and are not accounted for under the equity method are measured at fair value with changes therein reflected in net income.

Impairment Evaluation

Impairment losses are recognized upon evidence of other-than-temporary losses of value. When testing for impairment on investments that are not actively traded on a public market, we generally use a discounted cash flow approach to estimate the fair value of our investments and/or look to comparable activities in the marketplace. Management's judgment is required in developing the assumptions for the discounted cash flow approach. These assumptions include net asset values, internal rates of return, discount and capitalization rates, interest rates and financing terms, rental rates, timing of leasing activity, estimates of lease terms and related concessions, etc. When determining if impairment is other-than-temporary, we also look to the length of time and the extent to which fair value has been less than cost as well as the financial condition and near-term prospects of each investment. Based on our review, we did not record any significant other-than-temporary impairment losses during the years ending December 31, 2018, 2017 and 2016.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Use of Estimates

Our consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States (U.S.), or GAAP, which require management to make estimates and assumptions about future events. These estimates and assumptions affect the amounts of assets, liabilities, revenue and expenses we report. Such estimates include the value of goodwill, intangibles and other long-lived assets, accounts receivable, investments in unconsolidated subsidiaries and assumptions used in the calculation of income taxes, retirement and other post-employment benefits, among others. These estimates and assumptions are based on management's best judgment, and are evaluated on an ongoing basis and adjusted, as needed, using historical experience and other factors, including consideration of the macroeconomic environment. As future events and their effects cannot be forecast with precision, actual results could differ significantly from these estimates. Changes in estimates resulting from continuing changes in the economic environment will be reflected in the financial statements in future periods.

Cash and Cash Equivalents

Cash and cash equivalents generally consist of cash and highly liquid investments with an original maturity of three months or less. Included in the accompanying consolidated balance sheets as of December 31, 2018 and 2017 is cash and cash equivalents of \$155.2 million and \$123.8 million, respectively, from consolidated funds and other entities, which are not available for general corporate use. We also manage certain cash and cash equivalents as an agent for our investment and property and facilities management clients. These amounts are not included in the accompanying consolidated balance sheets (see *Fiduciary Funds* discussion below).

Restricted Cash

Included in the accompanying consolidated balance sheets as of December 31, 2018 and 2017 is restricted cash of \$86.7 million and \$73.0 million, respectively. The balances primarily include restricted cash set aside to cover funding obligations as required by contracts executed by us in the ordinary course of business.

Fiduciary Funds

The accompanying consolidated balance sheets do not include the net assets of escrow, agency and fiduciary funds, which are held by us on behalf of clients and which amounted to \$5.9 billion and \$4.0 billion at December 31, 2018 and 2017, respectively.

Concentration of Credit Risk

Financial instruments that potentially subject us to credit risk consist principally of trade receivables and interest-bearing investments. Users of real estate services account for a substantial portion of trade receivables and collateral is generally not required. The risk associated with this concentration is limited due to the large number of users and their geographic dispersion.

We place substantially all of our interest-bearing investments with several major financial institutions to limit the amount of credit exposure with any one financial institution.

Property and Equipment

Property and equipment, which includes leasehold improvements, is stated at cost, net of accumulated depreciation. Depreciation and amortization of property and equipment is computed primarily using the straight-line method over estimated useful lives ranging up to 10 years. Leasehold improvements are amortized over the term of their associated leases, excluding options to renew, since such leases generally do not carry prohibitive penalties for non-renewal. We capitalize expenditures that significantly increase the life of our assets and expense the costs of maintenance and repairs.

We review property and equipment for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If this review indicates that such assets are considered to be impaired, the impairment is recognized in the period the changes occur and represents the amount by which the carrying value exceeds the fair value of the asset.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Certain costs related to the development or purchase of internal-use software are capitalized. Internal-use software costs that are incurred in the preliminary project stage are expensed as incurred. Significant direct consulting costs and certain payroll and related costs, which are incurred during the development stage of a project are generally capitalized and amortized over a three-year period (except for enterprise software development platforms, which range from three to seven years) when placed into production.

Goodwill and Other Intangible Assets

Our acquisitions require the application of purchase accounting, which results in tangible and identifiable intangible assets and liabilities of the acquired entity being recorded at fair value. The difference between the purchase price and the fair value of net assets acquired is recorded as goodwill. The majority of our goodwill balance has resulted from our acquisition of CBRE Services, Inc. (CBRE Services) in 2001 (the 2001 Acquisition), our acquisition of Insignia Financial Group, Inc. (Insignia) in 2003 (the Insignia Acquisition), our acquisition of the Trammell Crow Company in 2006 (the Trammell Crow Company Acquisition), our acquisition of substantially all of the ING Group N.V. (ING) Real Estate Investment Management (REIM) operations in Europe and Asia, as well as substantially all of Clarion Real Estate Securities (CRES) in 2011 (collectively referred to as the REIM Acquisitions), our acquisition of Norland Managed Services Ltd (Norland) in 2013 (the Norland Acquisition), our acquisition of Johnson Controls, Inc. (JCI)'s Global Workplace Solutions (JCI-GWS) business in 2015 and our acquisition of FacilitySource Holdings, LLC (FacilitySource) in 2018. Other intangible assets that have indefinite estimated useful lives that are not being amortized include certain management contracts identified in the REIM Acquisitions, a trademark, which was separately identified as a result of the 2001 Acquisition, as well as a trade name separately identified as a result of the REIM Acquisitions. The remaining other intangible assets primarily include customer relationships, mortgage servicing rights, trade names and management contracts, which are all being amortized over estimated useful lives ranging up to 20 years.

We are required to test goodwill and other intangible assets deemed to have indefinite useful lives for impairment at least annually, or more often if circumstances or events indicate a change in the impairment status, in accordance with ASC Topic 350, "Intangibles – Goodwill and Other." ASC paragraphs 350-20-35-3 through 35-3B permit, but do not require an entity to perform a qualitative assessment with respect to any of its reporting units to determine whether a quantitative impairment test is needed. Entities are permitted to assess based on qualitative factors whether it is more likely than not that a reporting unit's fair value is less than its carrying amount before applying the quantitative goodwill impairment test. If it is more likely than not that the fair value of a reporting unit is less than its carrying amount, the entity conducts the quantitative goodwill impairment test. If not, the entity does not need to apply the quantitative test. The qualitative test is elective and an entity can go directly to the quantitative test rather than making a more-likely-than-not assessment based on an evaluation of qualitative factors. When performing a quantitative test, we use a discounted cash flow approach to estimate the fair value of our reporting units. Management's judgment is required in developing the assumptions for the discounted cash flow model. These assumptions include revenue growth rates, profit margin percentages, discount rates, etc.

Deferred Financing Costs

Costs incurred in connection with financing activities are generally deferred and amortized over the terms of the related debt agreements ranging up to ten years. Debt issuance costs related to a recognized debt liability are presented in the accompanying consolidated balance sheets as a direct deduction from the carrying amount of that debt liability. Amortization of these costs is charged to interest expense in the accompanying consolidated statements of operations. Accounting Standards Update (ASU) 2015-15, "Interest—Imputation of Interest (Subtopic 835-30): Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements" permits classifying debt issuance costs associated with a line of credit arrangement as an asset, regardless of whether there are any outstanding borrowings on the arrangement. Total deferred financing costs, net of accumulated amortization, related to our revolving line of credit have been included in other assets in the accompanying consolidated balance sheets and were \$18.3 million and \$23.0 million as of December 31, 2018 and 2017, respectively.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

During 2018, we redeemed in full our \$800.0 million aggregate outstanding principal amount of 5.00% senior notes. In connection with this early redemption, we incurred costs, including a \$20.0 million premium paid and the write-off of \$8.0 million of unamortized deferred financing costs, both of which were included in write-off of financing costs on extinguished debt in the accompanying consolidated statements of operations.

During 2017, we entered into a new credit agreement providing for a \$750.0 million tranche A term loan facility and a \$2.8 billion revolving credit facility. During the year ended December 31, 2017, in connection with these financing activities, we incurred approximately \$8.0 million of financing costs.

On March 21, 2016, we executed an amendment to our 2015 amended and restated credit agreement which, among other things, extended the maturity on our revolving credit facility and increased the borrowing capacity under our revolving credit facility. In connection with this amendment, we incurred approximately \$5.4 million of financing costs.

See Note 11 for additional information on activities associated with our debt.

Revenue Recognition

We account for revenue in accordance with ASC Topic 606, “*Revenue from Contracts with Customers*.” Topic 606 also includes Subtopic 340-40, “*Other Assets and Deferred Costs – Contracts with Customers*,” which requires deferral of incremental costs to obtain and fulfill a contract with a customer. We adopted new revenue recognition guidance on January 1, 2018, using the full retrospective method (see Note 3). Revenue is recognized when or as control of the promised services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those services.

The following is a description of principal activities – separated by reportable segments – from which we generate revenue. For more detailed information about our reportable segments, see Notes 17 and 18.

The Americas, Europe, Middle East and Africa (EMEA), and Asia Pacific

The Americas segment is our largest segment of operations and provides a comprehensive range of services throughout the U.S., in the largest regions of Canada and in key markets in Latin America. The primary services offered consist of the following: property leasing, property sales, mortgage services, appraisal and valuation, occupier outsourcing and property management services.

Our EMEA and Asia Pacific segments generally provide services similar to the Americas business segment. The EMEA segment has operations primarily in Europe, while the Asia Pacific segment has operations in Asia, Australia and New Zealand.

Property Leasing and Property Sales

We provide strategic advice and execution for owners, investors, and occupiers of real estate in connection with the leasing of office, industrial and retail space. We also offer clients fully integrated property sales services under the CBRE Capital Markets brand. We are compensated for our services in the form of a commission and, in some instances may earn various forms of variable incentive consideration. Our commission is paid upon the occurrence of certain contractual event(s) which may be contingent. For example, a portion of our leasing commission may be paid upon signing of the lease by the tenant, with the remaining paid upon occurrence of another future contingent event (e.g. payment of first month’s rent or tenant move-in). For leases, we typically satisfy our performance obligation at a point in time when control is transferred; generally, at the time of the first contractual event where there is a present right to payment. We look to history, experience with a customer, and deal specific considerations as part of the most likely outcome estimation approach to support our judgement that the second contingency (if applicable) will be met. Therefore, we typically accelerate the recognition of the revenue associated with the second contingent event. For sales, our commission is typically paid at the closing of the sale, which represents transfer of control for services to the customer.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

In addition to our commission, we may recognize other forms of variable consideration which can include, but are not limited to, commissions subject to concession or claw back and volume based discounts or rebates. We assess variable consideration on a contract by contract basis, and when appropriate, recognize revenue based on our assessment of the outcome (using the most likely outcome approach or weighted probability) and historical results, if comparable and representative. We recognize variable consideration if it is deemed probable that there will not be significant reversal in the future.

Mortgage Originations and Loan Sales

We offer clients commercial mortgage and structured financing services. Fees from services within our mortgage brokerage business that are in the scope of Topic 606 include fees earned for the brokering of commercial mortgage loans primarily through relationships established with investment banking firms, national and regional banks, credit companies, insurance companies and pension funds. We are compensated for our brokerage services via a fee paid upon successful placement of a commercial mortgage borrower with a lender who will provide financing. The fee earned is contingent upon the funding of the loan, which represents the transfer of control for services to the customer. Therefore, we typically satisfy our performance obligation at the point in time of the funding of the loan.

We also earn fees from the origination and sale of commercial mortgage loans for which the company retains the servicing rights. These fees are governed by the *Fair Value Measurements and Disclosures* topic (Topic 820) and *Transfers and Servicing* topic (Topic 860) of the FASB ASC. Upon origination of a mortgage loan held for sale, the fair value of the mortgage servicing rights (MSR) to be retained is included in the forecasted proceeds from the anticipated loan sale and results in a net gain (which is reflected in revenue). Upon sale, we record a servicing asset or liability based on the fair value of the retained MSR associated with the transferred loan. Subsequent to the initial recording, MSRs are amortized and carried at the lower of amortized cost or fair value in other intangible assets in the accompanying consolidated balance sheets. They are amortized in proportion to and over the estimated period that the servicing income is expected to be received.

Valuation Services

We provide valuation services that include market-value appraisals, litigation support, discounted cash flow analyses, feasibility studies as well as consulting services such as property condition reports, hotel advisory and environmental consulting. We are compensated for valuation services in the form of a fee, which is payable on the occurrence of certain events (e.g., a portion on the delivery of a draft report with the remaining on the delivery of the final report). For consulting services, we may be paid based on the occurrence of time or event-based milestones (such as the delivery of draft reports). We typically satisfy our performance obligation for valuation services as services are rendered over time.

Occupier Outsourcing Services

We provide a broad suite of services to occupiers of real estate, including facilities management, project management, transaction management and strategic consulting.

Facilities management involves the day-to-day management of client-occupied space and includes headquarter buildings, regional offices, administrative offices, data centers and other critical facilities, manufacturing and laboratory facilities, distribution facilities and retail space. Contracts for facilities management services are often structured so we are reimbursed for client-dedicated personnel costs and subcontracted vendor costs as well as associated overhead expenses plus a monthly fee, and, in some cases, annual incentives tied to agreed-upon performance targets, with any penalties typically capped. In addition, we have contracts for facilities management services based on fixed fees or guaranteed maximum prices. Fixed fee contracts are typically structured where an agreed upon scope of work is delivered for a fixed price while guaranteed maximum price contracts are structured with an agreed upon scope of work that will be provided to the client for a not to exceed price. Facilities management services represent a series of distinct daily services rendered over time. Consistent with the transfer of control for distinct, daily services to the customer, revenue is typically recognized at the end of each period for the fees associated with the services performed.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Project management services are often provided on a portfolio wide or programmatic basis. Revenues from project management services generally includes fixed management fees, variable fees, and incentive fees if certain agreed-upon performance targets are met. Revenues from project management may also include reimbursement of payroll and related costs for personnel providing the services and subcontracted vendor costs. Project management services represent a series of distinct daily services rendered over time. Consistent with the transfer of control for distinct, daily services to the customer, revenue is typically recognized at the end of each period for the fees associated with the services performed.

The amount of revenue recognized is presented gross for any services provided by our employees, as we control them. This is evidenced by our obligation for their performance and our ability to direct and redirect their work, as well as negotiate the value of such services. The amount of revenue recognized related to the majority of facilities management contracts and certain project management arrangements is presented gross (with offsetting expense recorded in cost of services) for reimbursements of costs of third-party services because we control those services that are delivered to the client. In the instances when we do not control third-party services delivered to the client, we report revenues net of the third-party reimbursements.

In addition to our management fee, we receive various types of variable consideration which can include, but is not limited to; key performance indicator bonuses or penalties which may be linked to subcontractor performance, gross maximum price, glidepaths, savings guarantees, shared savings, or fixed fee structures. We assess variable consideration on a contract by contract basis, and when appropriate, recognize revenue based on our assessment of the outcome (using the most likely outcome approach or weighted probability) and historical results, if comparable and representative. Using management assessment, historical results and statistics, we recognize revenue if it is deemed probable there will not be significant reversal in the future.

Property Management Services

We provide property management services on a contractual basis for owners of and investors in office, industrial and retail properties. These services include construction management, marketing, building engineering, accounting and financial services. We are compensated for our services through a monthly management fee earned based on either a specified percentage of the monthly rental income, rental receipts generated from the property under management or a fixed fee. We are also often reimbursed for our administrative and payroll costs directly attributable to the properties under management. Property management services represent a series of distinct daily services rendered over time. Consistent with the transfer of control for distinct, daily services to the customer, revenue is recognized at the end of each period for the fees associated with the services performed. The amount of revenue recognized is presented gross for any services provided by our employees, as we control them. We generally do not control third-party services delivered to property management clients. As such, we report revenues net of third-party reimbursements.

Global Investment Management

Our Global Investment Management business segment provides investment management services to pension funds, insurance companies, sovereign wealth funds, foundations, endowments and other institutional investors seeking to generate returns and diversification through investment in real estate. We sponsor investment programs that span the risk/return spectrum in: North America, Europe, Asia and Australia. We are typically compensated in the form of a base management fee, disposition fees, acquisition fees and incentive fees in the form of performance fees or carried interest based on fund type (open or closed ended, respectively). For the base management fee, we typically satisfy the performance obligation as service is rendered over time pursuant to the series guidance. Consistent with the transfer of control for distinct, daily services to the customer, revenue is recognized at the end of each period for the fees associated with the services performed. For acquisition and disposition services, we typically satisfy the performance obligation at a point in time (at acquisition or upon disposition). For contracts with contingent fees, including performance fees, incentive fees and carried interest, we assess variable consideration on a contract by contract basis, and when appropriate, recognize revenue based on our assessment of the outcome (using the most likely outcome approach or weighted probability) and historical results, if comparable and representative. Revenue associated with performance fees and carried interest are typically constrained due to volatility in the real estate market, a broad range of possible outcomes, and other factors in the market that are outside of our control.

Development Services

Our Development Services business segment consists of real estate development and investment activities in the United States to users of and investors in commercial real estate, as well as for our own account. We pursue opportunistic, risk-mitigated development and investment in commercial real estate across a wide spectrum of property types, including: industrial, office and retail properties; healthcare facilities of all types (medical office buildings, hospitals and ambulatory surgery centers); and residential/mixed-use projects. We pursue development and investment activity on behalf of our clients on a fee basis with no, or limited, ownership interest in a property, in partnership with our clients through co-investment – either on an individual project basis or through programs with certain strategic capital partners or for our own account with 100% ownership. Development services represent a series of distinct daily services rendered over time. Consistent with the transfer of control for distinct, daily services to the customer, revenue is recognized at the end of each period for the fees associated with the services performed. Fees are typically payable monthly over the service term or upon contractual defined events, like project milestones. In addition to development fee revenue, we receive various types of variable consideration which can include, but is not limited to, contingent lease-up bonuses, cost saving incentives, profit sharing on sales and at-risk fees. We assess variable consideration on a contract by contract basis, and when appropriate, recognize revenue based on our assessment of the outcome (using the most likely outcome approach or weighted probability) and historical results, if comparable and representative. We accelerate revenue if it is deemed probable there will not be significant reversal in the future.

Accounts Receivable and Allowance for Doubtful Accounts

We record accounts receivable for our unconditional rights to consideration arising from our performance under contracts with customers. The carrying value of such receivables, net of the allowance for doubtful accounts, represents their estimated net realizable value. We estimate our allowance for doubtful accounts for specific accounts receivable balances based on historical collection trends, the age of outstanding accounts receivables and existing economic conditions associated with the receivables. Past-due accounts receivable balances are written off when our internal collection efforts have been unsuccessful. As a practical expedient, we do not adjust the promised amount of consideration for the effects of a significant financing component when we expect, at contract inception, that the period between our transfer of a promised service to a customer and when the customer pays for that service will be one year or less. We do not typically include extended payment terms in our contracts with customers.

Remaining Performance Obligations

Remaining performance obligations represent the aggregate transaction prices for contracts where our performance obligations have not yet been satisfied. As of December 31, 2018, the aggregate amount of transaction price allocated to remaining performance obligations in our property leasing business was not significant. We apply the practical expedient related to remaining performance obligations that are part of a contract that has an original expected duration of one year or less and the practical expedient related to variable consideration from remaining performance obligations pursuant to the series guidance. All of our remaining performance obligations apply to one of these practical expedients.

Contract Assets and Contract Liabilities

Contract assets represent assets for revenue that has been recognized in advance of billing the customer and for which the right to bill is contingent upon something other than the passage of time. This is common for contingent portions of commissions in brokerage and incentive fees present in various businesses. Billing requirements vary by contract but are generally structured around fixed monthly fees, reimbursement of employee and other third-party costs, and the achievement or completion of certain contingent events.

When we receive consideration, or such consideration is unconditionally due, from a customer prior to transferring services to the customer under the terms of the services contract, we record deferred revenue, which represents a contract liability. We recognize the contract liability as revenue once we have transferred control of service to the customer and all revenue recognition criteria are met.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Contract assets and contract liabilities are determined for each contract on a net basis. For contract assets, we classify the short-term portion as a separate line item within current assets and the long-term portion within other assets, long-term in the accompanying consolidated balance sheets. For contract liabilities, we classify the short-term portion as a separate line item within current liabilities and the long-term portion within other liabilities, long-term in the accompanying consolidated balance sheets.

Contract Costs

Contract costs primarily consist of upfront costs incurred to obtain or to fulfill a contract. These costs are typically found within our Occupier Outsourcing business line. Such costs relate to transition costs to fulfill contracts prior to services being rendered and are included within other intangible assets in the accompanying consolidated balance sheets. Capitalized transition costs are amortized based on the transfer of services to which the assets relate which can vary on a contract by contract basis, and are included in cost of services in the accompanying consolidated statement of operations. For contract costs that are recognized as assets, we periodically review for impairment.

Applying the contract cost practical expedient, we recognize the incremental costs of obtaining contracts as an expense when incurred if the amortization period of the assets that we otherwise would have recognized is one year or less.

Business Promotion and Advertising Costs

The costs of business promotion and advertising are expensed as incurred. Business promotion and advertising costs of \$74.8 million, \$63.1 million and \$65.8 million were included in operating, administrative and other expenses for the years ended December 31, 2018, 2017 and 2016, respectively.

Foreign Currencies

The financial statements of subsidiaries located outside the U.S. are generally measured using the local currency as the functional currency. The assets and liabilities of these subsidiaries are translated at the rates of exchange at the balance sheet date, and income and expenses are translated at the average monthly rate. The resulting translation adjustments are included in the accumulated other comprehensive loss component of equity. Gains and losses resulting from foreign currency transactions are included in the results of operations.

Comprehensive Income

Comprehensive income consists of net income and other comprehensive (loss) income. In the accompanying consolidated balance sheets, accumulated other comprehensive loss primarily consists of foreign currency translation adjustments, fees associated with the termination of interest rate swaps, unrealized gains (losses) on interest rate swaps, unrealized holding (losses) gains on available for sale debt securities and pension liability adjustments. Foreign currency translation adjustments exclude any income tax effect given that earnings of non-U.S. subsidiaries are deemed to be reinvested for an indefinite period of time (see Note 14).

Warehouse Receivables

Our wholly-owned subsidiary CBRE Capital Markets, Inc. (CBRE Capital Markets) is a Federal Home Loan Mortgage Corporation (Freddie Mac) approved Multifamily Program Plus Seller/Servicer and an approved Federal National Mortgage Association (Fannie Mae) Aggregation and Negotiated Transaction Seller/Servicer. In addition, CBRE Capital Markets' wholly-owned subsidiary CBRE Multifamily Capital, Inc. (CBRE MCI) is an approved Fannie Mae Delegated Underwriting and Servicing (DUS) Seller/Servicer and CBRE Capital Markets' wholly-owned subsidiary CBRE HMF, Inc. (CBRE HMF) is a U.S. Department of Housing and Urban Development (HUD) approved Non-Supervised Federal Housing Authority (FHA) Title II Mortgagee, an approved Multifamily Accelerated Processing (MAP) lender and an approved Government National Mortgage Association (Ginnie Mae) issuer of mortgage-backed securities (MBS). Under these arrangements, before loans are originated through

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

proceeds from warehouse lines of credit, we obtain either a contractual loan purchase commitment from either Freddie Mac or Fannie Mae or a confirmed forward trade commitment for the issuance and purchase of a Fannie Mae or Ginnie Mae MBS that will be secured by the loans. The warehouse lines of credit are generally repaid within a one-month period when Freddie Mac or Fannie Mae buys the loans or upon settlement of the Fannie Mae or Ginnie Mae MBS, while we retain the servicing rights. Loans are funded at the prevailing market rates. We elect the fair value option for all warehouse receivables. At December 31, 2018 and 2017, all of the warehouse receivables included in the accompanying consolidated balance sheets were either under commitment to be purchased by Freddie Mac or had confirmed forward trade commitments for the issuance and purchase of Fannie Mae or Ginnie Mae mortgage-backed securities that will be secured by the underlying loans.

Mortgage Servicing Rights

In connection with the origination and sale of mortgage loans with servicing rights retained, we record servicing assets or liabilities based on the fair value of the mortgage servicing rights on the date the loans are sold. Our mortgage service rights (MSRs) are initially recorded at fair value. Subsequent to the initial recording, MSRs are amortized and carried at the lower of amortized cost or fair value in other intangible assets in the accompanying consolidated balance sheets. They are amortized in proportion to and over the estimated period that net servicing income is expected to be received based on projections and timing of estimated future net cash flows.

Our initial recording of MSRs at their fair value resulted in net gains, as the fair value of servicing contracts that result in MSR assets exceeded the fair value of servicing contracts that result in MSR liabilities. The net assets and net gains are presented in the accompanying consolidated financial statements. The amount of MSRs recognized during the years ended December 31, 2018 and 2017 was as follows (dollars in thousands):

	Year Ended December 31,	
	2018	2017
Beginning balance, mortgage servicing rights	\$ 373,131	\$ 320,524
Mortgage servicing rights recognized	173,737	145,103
Mortgage servicing rights sold	—	(71)
Amortization expense	(115,743)	(98,559)
Other	(6,655)	6,134
Ending balance, mortgage servicing rights	<u>\$ 424,470</u>	<u>\$ 373,131</u>

MSRs do not actively trade in an open market with readily available observable prices; therefore, fair value is determined based on certain assumptions and judgments, including the estimation of the present value of future cash flows realized from servicing the underlying mortgage loans. Management's assumptions include the benefits of servicing (servicing fee income and interest on escrow deposits), inflation, the cost of servicing, prepayment rates, delinquencies, discount rates and the estimated life of servicing cash flows. The assumptions used are subject to change based on management's judgments and estimates of changes in future cash flows and interest rates, among other things. The key assumptions used during the years ended December 31, 2018, 2017 and 2016 in measuring fair value were as follows:

	Year Ended December 31,		
	2018	2017	2016
Discount rate	10.00%	10.06%	10.16%
Conditional prepayment rate	8.89%	8.88%	9.66%

The estimated fair value of our MSRs was \$554.2 million and \$446.3 million as of December 31, 2018 and 2017, respectively. Impairment is evaluated through a comparison of the carrying amount and fair value of the MSRs, and recognized with the establishment of a valuation allowance. We did not incur any impairment charges related to our MSRs during the years ended December 31, 2018, 2017 or 2016. No valuation allowance was created previously and we did not record a valuation allowance for MSRs in 2018 or 2017.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Included in revenue in the accompanying consolidated statements of operations are contractually specified servicing fees from loans serviced for others of \$67.5 million, \$144.2 million and \$115.3 million for the years ended December 31, 2018, 2017 and 2016, respectively, and prepayment fees/late fees/ancillary income earned from loans serviced for others of \$15.9 million, \$13.2 million and \$7.2 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Accounting for Broker Draws

As part of our recruitment efforts relative to new U.S. brokers, we offer a transitional broker draw arrangement. Our broker draw arrangements generally last until such time as a broker's pipeline of business is sufficient to allow him or her to earn sustainable commissions. This program is intended to provide the broker with a minimal amount of cash flow to allow adequate time for his or her training as well as time for him or her to develop business relationships. Similar to traditional salaries, the broker draws are paid irrespective of the actual revenues generated by the broker. Often these broker draws represent the only form of compensation received by the broker. Furthermore, it is not our general policy to pursue collection of unearned broker draws paid under this arrangement. As a result, we have concluded that broker draws are economically equivalent to salaries paid and accordingly charge them to compensation expense as incurred. The broker is also entitled to earn a commission on completed revenue transactions. This amount is calculated as the commission that would have been payable under our full commission program, less any amounts previously paid to the broker in the form of a draw.

Stock-Based Compensation

We account for all employee awards under the fair value recognition provisions of the "Compensation – Stock Compensation" Topic of the FASB ASC (Topic 718). Topic 718 requires the measurement of compensation cost at the grant date, based upon the estimated fair value of the award, and requires amortization of the related expense over the employee's requisite service period.

In the third quarter of 2016, we elected to early adopt the provisions of ASU 2016-09, "Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting," which required us to reflect any adjustments as of January 1, 2016. ASU 2016-09 permitted companies to make an accounting policy election to either estimate forfeitures on share-based payment awards, as previously required, or to recognize forfeitures as they occur. We elected to change our accounting policy to recognize forfeitures when they occur and the impact of this change in accounting policy was recorded as a \$3.3 million cumulative effect adjustment to accumulated earnings as of January 1, 2016.

See Note 13 for additional information on our stock-based compensation plans.

Income Per Share

Basic income per share attributable to CBRE Group, Inc. is computed by dividing net income attributable to CBRE Group, Inc. shareholders by the weighted average number of common shares outstanding during each period. The computation of diluted income per share attributable to CBRE Group, Inc. generally further assumes the dilutive effect of potential common shares, which include stock options and certain contingently issuable shares. Contingently issuable shares consist of non-vested stock awards.

Income Taxes

Income taxes are accounted for under the asset and liability method in accordance with the "Accounting for Income Taxes" Topic of the FASB ASC (Topic 740). Deferred tax assets and liabilities are determined based on temporary differences between the financial reporting and tax basis of assets and liabilities and operating loss and tax credit carry forwards. Deferred tax assets and liabilities are measured by applying enacted tax rates and laws and are released in the years in which the temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Valuation allowances are provided against deferred tax assets when it is more likely than not that some portion or all of the deferred tax asset will not be realized.

See Note 14 for additional information on income taxes, including a discussion of the impact of the Tax Cuts and Jobs Act (the Tax Act), which was signed into law on December 22, 2017.

Self-Insurance

Our wholly-owned captive insurance company, which is subject to applicable insurance rules and regulations, insures our exposure related to workers' compensation insurance, general liability insurance and automotive insurance for our U.S. operations risk on a primary basis and we purchase excess coverage from unrelated insurance carriers. The captive insurance company also insures primary risk relating to professional indemnity claims globally. Given the nature of these types of claims, it may take several years for resolution and determination of the cost of these claims. We are required to estimate the cost of these claims in our financial statements.

The estimates that we utilize to record our potential losses on claims are inherently subjective, and actual claims could differ from amounts recorded, which could result in increased or decreased expense in future periods. As of December 31, 2018 and 2017, our reserves for claims under these insurance programs were \$113.0 million and \$93.7 million, respectively, of which \$2.7 million and \$2.8 million, respectively, represented our estimated current liabilities.

Reclassifications

Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation in connection with our adoption of new revenue recognition guidance (as further described in note 3). In addition, certain reclassifications have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. Such reclassifications primarily relate to the adoption of ASU 2016-01, ASU 2016-15 and ASU 2016-18 as further described in Note 3.

3. New Accounting Pronouncements

Recently Adopted Accounting Pronouncements

The FASB previously issued five ASUs related to revenue recognition ("new revenue recognition guidance"). The ASUs issued were: (1) in May 2014, ASU 2014-09, "Revenue from Contracts with Customers (Topic 606);" (2) in March 2016, ASU 2016-08, "Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (Reporting Revenue Gross versus Net);" (3) in April 2016, ASU 2016-10, "Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing;" (4) in May 2016, ASU 2016-12, "Revenue from Contracts with Customers (Topic 606): Narrow-scope Improvements and Practical Expedients;" and (5) in December 2016, ASU 2016-20, "Technical Corrections and Improvements to Topic 606, Revenue From Contracts with Customers." As mentioned in Note 2, we adopted the new revenue recognition guidance in the first quarter of 2018 using the full retrospective transition method. This resulted in a cumulative adjustment of \$94.6 million to the accumulated earnings balance reflected in the accompanying consolidated balance sheets at December 31, 2017, including an \$87.9 million impact of adoption effective January 1, 2016 as well as the impact from restatements of full year statements of operations for the years ended December 31, 2017 and 2016 resulting in adjustments of \$5.6 million and \$1.1 million, respectively. The impact of the application of the new revenue recognition guidance resulted in an acceleration of revenues that were based, in part, on future contingent events. For example, some leasing commission revenues in various countries where we operate were recognized earlier. Under former GAAP, a portion of these lease commission revenues was deferred until a future contingency was resolved (e.g., tenant move-in or payment of first month's rent). Under the new revenue guidance, our performance obligation will be typically satisfied at lease signing and therefore the portion of the commission that is contingent on a future event has been recognized earlier if deemed probable that there will not be significant reversal in the future. The acceleration of the timing of revenue recognition also resulted in the acceleration of expense recognition relating to direct commissions payable to brokers. In addition, the acceleration of these revenues and expenses resulted in an increase in total assets and liabilities to reflect contract assets and accrued commissions payable.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

We evaluated the impact of the updated principal versus agent guidance on our consolidated financial statements. Under former GAAP, certain third-party costs associated with our facilities and project management contracts were accounted for on a net basis because the contracts include provisions such as “pay when paid” that mitigate payment risk with respect to services provided by third parties to our clients. Under the new revenue recognition guidance, control of the services before transfer to the client is the primary factor in determining principal versus agent assessments. Payment risk is no longer a determining factor under Topic 606. We have determined that we control the services provided by third parties on behalf of certain of our facilities and project management clients. Accordingly, under the new guidance, we are accounting for the cost of services provided by third parties and the related reimbursement revenue on a gross basis.

The following table presents the effects of the adoption of the new revenue recognition guidance on our consolidated balance sheet as of December 31, 2017 (dollars in thousands):

	As Reported	Adoption of New Revenue Recognition Guidance	As Adjusted
Receivables	\$ 3,207,285	\$ (94,996)	\$ 3,112,289
Contract assets	—	273,053	273,053
Total current assets	5,452,527	178,057	5,630,584
Other assets, net	422,965	56,509	479,474
Total assets	11,483,830	234,566	11,718,396
Accounts payable and accrued expenses	1,674,287	(100,615)	1,573,672
Accrued bonus and profit sharing	1,072,976	5,369	1,078,345
Compensation and employee benefits payable	803,504	100,930	904,434
Contract liabilities	—	100,615	100,615
Total current liabilities	4,606,645	106,299	4,712,944
Deferred tax liabilities, net	114,017	33,201	147,218
Total liabilities	7,404,282	139,500	7,543,782
Accumulated earnings	3,348,385	94,622	3,443,007
Accumulated other comprehensive loss	(552,858)	444	(552,414)
Total CBRE Group, Inc. stockholders' equity	4,019,430	95,066	4,114,496
Total liabilities and equity	11,483,830	234,566	11,718,396

The following tables present the effects of the adoption of the new revenue recognition guidance on our consolidated statements of operations for the years ended December 31, 2017 and 2016 (dollars in thousands, except share amounts):

	Year Ended December 31, 2017		
	As Reported	Adoption of New Revenue Recognition Guidance	As Adjusted
Revenue	\$ 14,209,608	\$ 4,419,179	\$ 18,628,787
Cost of services	9,893,226	4,411,873	14,305,099
Operating, administrative and other	2,858,654	66	2,858,720
Operating income	1,071,442	7,240	1,078,682
Income before provision for income taxes	1,164,093	7,240	1,171,333
Provision for income taxes	466,147	1,610	467,757
Net income	697,946	5,630	703,576
Net income attributable to CBRE Group, Inc.	691,479	5,630	697,109
<i>Earnings per share:</i>			
Basic income per share	\$ 2.05	\$ 0.01	\$ 2.06
Diluted income per share	2.03	0.02	2.05

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

	Year Ended December 31, 2016		
	As Reported	Adoption of New Revenue Recognition Guidance	As Adjusted
Revenue	\$ 13,071,589	\$ 4,297,519	\$ 17,369,108
Cost of services	9,123,727	4,297,184	13,420,911
Operating, administrative and other	2,781,310	(1,009)	2,780,301
Operating income	815,487	1,344	816,831
Income before provision for income taxes	880,726	1,344	882,070
Provision for income taxes	296,662	238	296,900
Net income	584,064	1,106	585,170
Net income attributable to CBRE Group, Inc.	571,973	1,106	573,079
<i>Earnings per share:</i>			
Basic income per share	\$ 1.71	\$ —	\$ 1.71
Diluted income per share	1.69	—	1.69

See Note 2 for further discussion of the effects of the adoption of the new revenue recognition guidance on our significant accounting policies.

In January 2016, the FASB issued ASU 2016-01, “*Financial Instruments – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities.*” This ASU 2016-01 states that entities will have to measure equity investments (except those accounted for under the equity method, those that result in consolidation of the investee and certain other investments) at fair value and recognize any changes in fair value in net income. Under the new guidance, entities will measure equity investments in the scope of the guidance at the end of each reporting period. We will no longer be able to classify equity investments as trading or available for sale, and will no longer recognize unrealized holding gains and losses on equity securities previously classified as available for sale in other comprehensive income (loss). However, the guidance for classifying and measuring investments in debt securities and loans is unchanged. We adopted ASU 2016-01 in the first quarter of 2018, which resulted in a cumulative adjustment to accumulated earnings of \$4.0 million on January 1, 2018, representing the accumulated unrealized gains (net of tax) reported in accumulated other comprehensive loss for available for sale equity securities on December 31, 2017.

In August 2016, the FASB issued ASU 2016-15, “*Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments.*” This ASU addressed eight specific cash flow issues with the objective of reducing the existing diversity in practice. We adopted ASU 2016-15 in the first quarter of 2018. This resulted in changes to our consolidated statement of cash flows included in the accompanying consolidated financial statements, including:

- An accounting policy election was made in the first quarter of 2018 to classify distributions from all of our equity method investments based on the “nature of distribution method”. Under this approach, we classify the distributions based on the nature of the activities of the investee that generated the distribution. This resulted in \$183.9 million and \$166.7 million of distributions from equity method investments being reclassified from cash flows from investing activities to cash flows from operating activities for the years ended December 31, 2017 and 2016, respectively;
- Purchase price payments made related to acquisitions more than three months after the acquisition closed are to be reflected as cash flows from financing activities (assuming they do not exceed the amount recorded in the initial measurement period). If we record an increase to the estimated purchase price liability post-measurement period, then such increase (i.e. amounts we pay out above and beyond initial estimate of liability) would get recorded as an operating cash flow. This resulted in \$24.0 million and \$21.0 million of cash paid for acquisitions being reclassified from cash used in investing activities to cash used in financing activities for the years ended December 31, 2017 and 2016, respectively;
- Payments for debt prepayment or debt extinguishment costs, including third-party costs, premiums paid, and other fees paid to lenders that are directly related to the debt prepayment or debt extinguishment are to be reflected as cash used in financing activities. During the year ended December 31, 2018, we paid a \$20.0 million premium in connection with the early redemption of our 5.00% senior notes (see Note 11). Such premium has been reflected in cash used in financing activities in the consolidated statement of cash flows for the year ended December 31, 2018.

In November 2016, the FASB issued ASU 2016-18, “*Statement of Cash Flows (Topic 230): Restricted Cash.*” This ASU 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. We adopted ASU 2016-18 in the first quarter of 2018 and, as a result, restricted cash has been 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.

Recent Accounting Pronouncements Pending Adoption

The FASB previously issued four ASUs related to leases. The ASUs issued were: (1) in February 2016, ASU 2016-02, “*Leases (Topic 842)*”, (2) in July 2018, ASU 2018-10, “*Codification Improvements to Topic 842, Leases*”, (3) in July 2018, ASU 2018-11, “*Target Improvements*” and (4) in December 2018, ASU 2018-20, “*Leases (Topic 842): Narrow-Scope Improvements for Lessors.*” ASU 2016-02 requires lessees to recognize most leases on the balance sheet as liabilities, with corresponding right-of-use assets. For income statement recognition purposes, leases will be classified as either a finance or operating lease in a manner similar to the requirements under the current lease accounting literature, but without relying upon the bright-line tests. The amendments in ASU 2018-10 affect narrow aspects of the guidance issued in the amendments in ASU 2016-02. The amendments in ASU 2018-11 provide an optional method for adopting the new leasing guidance and provide lessors with a practical expedient to combine lease and associated non-lease components by class of underlying asset in contracts that meet certain criteria. The amendments in ASU 2018-20 provide an accounting policy election permitting lessors to treat certain sales and other similar taxes incurred as lessee costs, guidance on the treatment of certain lessor costs and guidance on recognizing variable payments for contracts with a lease and non-lease component. These ASUs are effective for annual periods in fiscal years beginning after December 15, 2018.

We plan to adopt these ASUs in the first quarter of 2019 by using the optional transitional method associated with a cumulative-effect adjustment to the opening balance of retained earnings. Therefore, comparative financial statements presented for prior periods will not be impacted by adoption. We will elect certain practical expedients, including the package of transition practical expedients and the practical expedient to forego separating lease and non-lease components in our lessee contracts. We will make an accounting policy election to exempt short-term leases of 12 months or less from balance sheet recognition requirements associated with the new standard; fixed rental payments for short-term leases will be recognized as a straight-line expense over the lease term.

We estimate that, as a result of the adoption of the leasing guidance, the consolidated balance sheet as of January 1, 2019 will reflect between \$1.2 billion to \$1.4 billion of additional lease liabilities. We expect to record corresponding right-of-use assets below this range, reflecting adjustments for items such as prepaid and deferred rent, unamortized initial direct costs, and unamortized lease incentive balances. We do not expect that the adoption of the leasing guidance will have a material impact on our consolidated statements of operations.

The FASB previously issued two ASUs related to financial instruments – credit losses. The ASUs issued were: (1) in June 2016, ASU 2016-13, “*Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*” and (2) in November 2018, ASU 2018-19 “*Codification Improvements to Topic 326, Financial Instruments—Credit Losses.*” ASU 2016-13 is intended to improve financial reporting by requiring timelier recording of credit losses on loans and other financial instruments held by financial institutions and other organizations. ASU 2018-19 clarifies that receivables arising from operating leases are not within the scope of the credit losses standard, but rather, should be accounted for in accordance with the leasing standard. These ASUs are effective for fiscal years beginning after December 15, 2019, and interim periods within those years, with early adoption permitted. We are evaluating the effect that ASU 2016-13 and ASU 2018-19 will have on our consolidated financial statements and related disclosures.

In January 2017, the FASB issued ASU 2017-04, “*Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment.*” This ASU eliminates Step 2 from the goodwill impairment test. This ASU also eliminates the requirements for any reporting unit with a zero or negative carrying amount to perform a qualitative assessment. This ASU is effective for fiscal years beginning after December 15, 2019, and interim periods within those years, with early adoption permitted. We are evaluating the effect that ASU 2017-04 will have on our goodwill assessment process, but do not believe the adoption of ASU 2017-04 will have a material impact on our consolidated financial statements and related disclosures.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

In March 2017, the FASB issued ASU 2017-08, *“Receivables – Nonrefundable Fees and Other Costs (Subtopic 310-20), Premium Amortization on Purchased Callable Debt Securities.”* This ASU requires the premium to be amortized to the earliest call date. This ASU does not require an accounting change for securities held at a discount; the discount continues to be amortized to maturity. This ASU is effective for fiscal years beginning after December 15, 2018, and interim periods within those years, with early adoption permitted. We are evaluating the effect that ASU 2017-08 will have on our consolidated financial statements and related disclosures.

The FASB previously issued two ASUs related to derivatives and hedging. The ASUs issued were: (1) in August 2017, ASU 2017-12, *“Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities”* and (2) in October 2018, ASU 2018-16 *“Derivatives and Hedging (Topic 815): Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting.”* ASU 2017-12 refines and expands hedge accounting for both financial and commodity risks. ASU 2018-16 adds the OIS rate based on SOFR as a U.S. benchmark interest rate to facilitate the LIBOR to SOFR transition and provide sufficient lead time for entities to prepare for changes to interest rate risk hedging strategies for both risk management and hedge accounting purposes. These ASUs are effective for fiscal years beginning after December 15, 2018, and interim periods within those years, with early adoption permitted. We are evaluating the effect that ASU 2017-12 and ASU 2018-16 will have on our consolidated financial statements and related disclosures, but do not expect it to have a material impact.

In February 2018, the FASB issued ASU 2018-02, *“Income Statement—Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.”* This ASU provides an option to reclassify stranded tax effects within accumulated other comprehensive income to retained earnings in each period in which the effect of the change in the U.S. federal corporate income tax rate in the Tax Act (or portion thereof) is recorded. This ASU is effective for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years, with early adoption permitted. We are evaluating the effect that ASU 2018-02 will have on our consolidated financial statements and related disclosures, but do not expect it to have a material impact.

In July 2018, the FASB issued ASU 2018-09, *“Codification Improvements.”* The amendments in ASU 2018-09 represent changes to clarify, correct errors in, or make minor improvements to the Codification, eliminating inconsistencies and providing clarifications in current guidance. This ASU is effective for fiscal years beginning after December 15, 2018. We are evaluating the effect that ASU 2018-09 will have on our consolidated financial statements and related disclosures, but do not expect it to have a material impact.

In August 2018, the FASB issued ASU 2018-13, *“Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement.”* This ASU eliminates, adds and modifies certain disclosure requirements for fair value measurements. This ASU is effective for fiscal years beginning after December 15, 2019, with early adoption permitted. As ASU 2018-13 only revises disclosure requirements, it will not have any impact on our consolidated financial statements. We are evaluating the effect, if any, that ASU 2018-13 will have on our disclosures.

In August 2018, the FASB issued ASU 2018-14, *“Compensation—Retirement Benefits—Defined Benefit Plans—General (Subtopic 715-20): Disclosure Framework—Changes to the Disclosure Requirements for Defined Benefit Plans.”* This ASU makes minor changes to the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. This ASU is effective for fiscal years ending after December 15, 2020, with early adoption permitted. As ASU 2018-14 only revises disclosure requirements, it will not have any impact on our consolidated financial statements. We are evaluating the effect, if any, that ASU 2018-14 will have on our disclosures.

In October 2018, the FASB issued ASU 2018-17, *“Consolidation (Topic 810): Targeted Improvements to Related Party Guidance for Variable Interest Entities.”* This ASU amends the guidance for determining whether a decision-making fee is a variable interest and requires organizations to consider indirect interests held through related parties under common control on a proportional basis rather than as the equivalent of a direct interest in its entirety (as currently required in GAAP). This ASU is effective for fiscal years beginning after December 15, 2019, and interim periods within those years, with early adoption permitted. We are evaluating the effect that ASU 2018-17 will have on our consolidated financial statements and related disclosures.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

In November 2018, the FASB issued ASU 2018-18, “*Collaborative Arrangements (Topic 808): Clarifying the Interaction Between Topic 808 and Topic 606.*” This ASU provides guidance on how to assess whether certain transactions between collaborative arrangement participants should be accounted for within the revenue recognition standard and provides more comparability in the presentation of revenue for certain transactions between collaborative arrangement participants. This ASU is effective for fiscal years beginning after December 15, 2019, and interim periods within those years, with early adoption permitted. We are evaluating the effect that ASU 2018-18 will have on our consolidated financial statements and related disclosures.

4. FacilitySource Acquisition

On June 12, 2018, CBRE Jason Acquisition LLC (Merger Sub), our wholly-owned subsidiary, and FacilitySource Holdings, LLC (FacilitySource), WP X Finance, LP and Warburg Pincus X Partners, LP (collectively, the Stockholders) entered into a stock purchase agreement and plan of merger (the Merger Agreement). As part of the Merger Agreement, (i) we purchased from the Stockholders all the outstanding shares of capital stock of FS WP Holdco, Inc (Blocker Corp), which owned 1,686,013 Class A units (the Blocker Units) and (ii) immediately following the acquisition of Blocker Corp, Merger Sub merged with FacilitySource, with FacilitySource continuing as the surviving company and our wholly-owned subsidiary within our Americas segment (the FacilitySource Acquisition), with the remaining Blocker Units not held by Blocker Corp. canceled and converted into the right to receive cash consideration as set forth in the Merger Agreement. The estimated net initial purchase price was approximately \$266.5 million, with \$263.0 million paid in cash. We financed the transaction with cash on hand and borrowings under our revolving credit facility. We completed the FacilitySource Acquisition to help us (i) build a tech-enabled supply chain capability for the occupier outsourcing industry and (ii) drive meaningfully differentiated outcomes for leading occupiers of real estate.

The following represents a summary of the excess purchase price over the estimated fair value of net assets acquired (dollars in thousands):

Estimated purchase price	\$	266,465
Add: Estimated fair value of net liabilities assumed (see table below)		8,632
Excess purchase price over estimated fair value of net assets acquired	\$	<u>275,097</u>

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The preliminary purchase accounting related to the FacilitySource Acquisition has been recorded in the accompanying consolidated financial statements. The excess purchase price over the estimated fair value of net assets acquired has been recorded to goodwill. The goodwill arising from the FacilitySource Acquisition consists largely of the synergies and economies of scale expected from combining the operations acquired from FacilitySource with ours. We are currently assessing if any portion of the goodwill recorded in connection with the FacilitySource Acquisition will be deductible for tax purposes, but do not expect any tax deductible goodwill to be significant. Given the complexity of the transaction, the calculation of the fair value of certain assets and liabilities acquired, primarily income tax items, is still preliminary. The purchase price allocation is expected to be completed as soon as practicable, but no later than one year from the acquisition date. The following table summarizes the aggregate estimated fair values of the assets acquired and the liabilities assumed in the FacilitySource Acquisition (dollars in thousands):

Assets Acquired:			
Cash and cash equivalents		\$	2,627
Receivables, net			37,902
Prepaid expenses			477
Property and equipment			41,680
Other intangible assets			48,200
Other assets			114
Total assets acquired			<u>131,000</u>
Liabilities Assumed:			
Accounts payable and accrued expenses			48,273
Accrued bonus and profit sharing			5,036
Compensation and employee benefits payable			1,472
Line of credit and term loan			26,295
Deferred tax liabilities, net			57,428
Other liabilities			1,128
Total liabilities assumed			<u>139,632</u>
Estimated Fair Value of Net Liabilities Assumed		\$	<u>(8,632)</u>

The following is a summary of the preliminary estimate of the amortizable intangible assets and depreciable computer software acquired in connection with the FacilitySource Acquisition (dollars in thousands):

Asset Class	Weighted Average Amortization/Depreciation Period	Amount Assigned at Acquisition Date	As of December 31, 2018	
			Accumulated Amortization and Depreciation	Net Carrying Value
Intangibles				
Trade name	20 years	\$ 37,200	\$ 1,007	\$ 36,193
Customer relationships	6.67 years	11,000	894	10,106
Total amortizable intangible assets acquired	16.96 years	<u>\$ 48,200</u>	<u>\$ 1,901</u>	<u>\$ 46,299</u>
Property and Equipment				
Computer software	10 years	<u>\$ 38,800</u>	<u>\$ 2,102</u>	<u>\$ 36,698</u>

Upon close of the FacilitySource Acquisition, we immediately repaid the line of credit and term loan assumed from FacilitySource.

The accompanying consolidated statement of operations for the year ended December 31, 2018 includes revenue, an operating loss and a net loss of \$121.6 million, (\$3.9) million and (\$2.9) million, respectively attributable to the FacilitySource Acquisition. This does not include direct transaction and integration costs of \$6.7 million and depreciation and amortization expense of \$4.0 million related to computer software and intangible assets acquired, all of which were incurred during the year ended December 31, 2018 in connection with the FacilitySource Acquisition.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Unaudited pro forma results, assuming the FacilitySource Acquisition had occurred as of January 1, 2016 for purposes of the pro forma disclosures for the years ended December 31, 2018, 2017 and 2016 are presented below. They include certain adjustments for increased depreciation and amortization expense related to acquired computer software and intangible assets as well as increased interest expense associated with borrowings under our revolving credit facility used to fund the acquisition, as follows (dollars in thousands):

	Year Ended December 31,		
	2018	2017	2016
Depreciation expense	\$ 1,253	\$ 3,054	\$ 3,298
Amortization expense	1,019	2,190	2,190
Interest expense	2,748	6,098	6,098

Pro forma adjustments also include the removal of historical amortization of goodwill recorded by FacilitySource before we acquired them and \$6.7 million of direct costs incurred by us during the year ended December 31, 2018 as well as the tax impact of all pro forma adjustments for all periods presented. These unaudited pro forma results have been prepared for comparative purposes only and do not purport to be indicative of what operating results would have been had the FacilitySource Acquisition occurred on January 1, 2016 and may not be indicative of future operating results (dollars in thousands, except share data):

	Year Ended December 31,		
	2018	2017	2016
Revenue	\$ 21,437,014	\$ 18,778,312	\$ 17,472,602
Operating income	1,089,738	1,058,834	794,495
Net income attributable to CBRE Group, Inc.	1,061,916	680,392	555,332
<i>Basic income per share:</i>			
Net income per share attributable to CBRE Group, Inc.	\$ 3.13	\$ 2.02	\$ 1.66
Weighted average shares outstanding for basic income per share	339,321,056	337,658,017	335,414,831
<i>Diluted income per share:</i>			
Net income per share attributable to CBRE Group, Inc.	\$ 3.09	\$ 2.00	\$ 1.64
Weighted average shares outstanding for diluted income per share	343,122,741	340,783,556	338,424,563

5. Warehouse Receivables & Warehouse Lines of Credit

A rollforward of our warehouse receivables is as follows (dollars in thousands):

Beginning balance at December 31, 2017	\$ 928,038
Origination of mortgage loans	20,591,602
Gains (premiums on loan sales)	56,000
Proceeds from sale of mortgage loans:	
Sale of mortgage loans	(20,174,676)
Cash collections of premiums on loan sales	(56,000)
Proceeds from sale of mortgage loans	(20,230,676)
Net decrease in mortgage servicing rights included in warehouse receivables	(2,496)
Ending balance at December 31, 2018	\$ 1,342,468

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following table is a summary of our warehouse lines of credit in place as of December 31, 2018 and 2017 (dollars in thousands):

Lender	Current Maturity	Pricing	December 31, 2018		December 31, 2017	
			Maximum Facility Size	Carrying Value	Maximum Facility Size	Carrying Value
JP Morgan Chase Bank, N.A. (JP Morgan)	10/21/2019	daily one-month LIBOR plus 1.30%	\$ 985,000	\$ 871,680	\$ 1,000,000	\$ 192,180
JP Morgan	10/21/2019	daily one-month LIBOR plus 2.75%	15,000	—	25,000	5,800
Fannie Mae Multifamily As Soon As Pooled Plus Agreement and Multifamily As Soon As Pooled Sale Agreement (ASAP) Program	Cancelable anytime	daily one-month LIBOR plus 1.35%, with a LIBOR floor of 0.35%	450,000	149,089	450,000	205,827
TD Bank, N.A. (TD Bank) (1)	6/30/2019	daily one-month LIBOR plus 1.20%	400,000	165,945	800,000	225,416
Bank of America, N.A. (BofA) (2)	6/4/2019	daily one-month LIBOR plus 1.30%	425,000	21,852	337,500	130,443
Capital One, N.A. (Capital One) (3)	7/27/2019	daily one-month LIBOR plus 1.35%	325,000	120,195	387,500	151,100
			<u>\$ 2,600,000</u>	<u>\$ 1,328,761</u>	<u>\$ 3,000,000</u>	<u>\$ 910,766</u>

- (1) Line was temporarily increased from \$400.0 million to \$800.0 million to accommodate 2017 year-end volume. Maximum facility reverted to \$400.0 million on February 1, 2018.
- (2) Line was temporarily increased from \$225.0 million to \$337.5 million to accommodate 2017 year-end volume. Maximum facility reverted back to \$225.0 million on January 27, 2018. During 2018, an additional \$200.0 million line of credit was added.
- (3) Line was temporarily increased from \$200.0 million to \$387.5 million to accommodate 2017 year-end volume. Maximum facility reverted back to \$200.0 million on January 9, 2018. During 2018, the maximum facility size was increased to \$325.0 million.

During the year ended December 31, 2018, we had a maximum of \$2.8 billion of warehouse lines of credit principal outstanding.

6. Variable Interest Entities (VIEs)

We hold variable interests in certain VIEs in our Global Investment Management and Development Services segments which are not consolidated as it was determined that we are not the primary beneficiary. Our involvement with these entities is in the form of equity co-investments and fee arrangements.

As of December 31, 2018 and 2017, our maximum exposure to loss related to the VIEs which are not consolidated was as follows (dollars in thousands):

	December 31,	
	2018	2017
Investments in unconsolidated subsidiaries	\$ 23,266	\$ 26,273
Other current assets	3,827	3,401
Co-investment commitments	22,363	2,364
Maximum exposure to loss	<u>\$ 49,456</u>	<u>\$ 32,038</u>

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

7. Fair Value Measurements

The “*Fair Value Measurements and Disclosures*” topic (Topic 820) of the FASB ASC defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants at the measurement date. Topic 820 also establishes a three-level fair value hierarchy that prioritizes the inputs used to measure fair value. This hierarchy requires entities to maximize the use of observable inputs and minimize the use of unobservable inputs. The three levels of inputs used to measure fair value are as follows:

- Level 1 – Quoted prices in active markets for identical assets or liabilities.
- Level 2 – Observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets; quoted prices for identical or similar assets and liabilities in markets that are not active; or other inputs that are observable or can be corroborated by observable market data.
- Level 3 – Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. This includes certain pricing models, discounted cash flow methodologies and similar techniques that use significant unobservable inputs.

There were no significant transfers in or out of Level 1 and Level 2 during the years ended December 31, 2018 and 2017.

The following tables present the fair value of assets and liabilities measured at fair value on a recurring basis as of December 31, 2018 and 2017 (dollars in thousands):

	As of December 31, 2018			
	Fair Value Measured and Recorded Using			Total
	Level 1	Level 2	Level 3	
Assets				
Available for sale securities:				
Debt securities:				
U.S. treasury securities	\$ 3,138	\$ —	\$ —	\$ 3,138
Debt securities issued by U.S. federal agencies	—	11,196	—	11,196
Corporate debt securities	—	27,201	—	27,201
Asset-backed securities	—	5,017	—	5,017
Collateralized mortgage obligations	—	2,224	—	2,224
Total available for sale debt securities	3,138	45,638	—	48,776
Equity securities	153,762	—	—	153,762
Warehouse receivables	—	1,342,468	—	1,342,468
Total assets at fair value	<u>\$ 156,900</u>	<u>\$ 1,388,106</u>	<u>\$ —</u>	<u>\$ 1,545,006</u>
Liabilities				
Interest rate swaps	\$ —	\$ 1,070	\$ —	\$ 1,070
Securities sold, not yet purchased	3,133	—	—	3,133
Total liabilities at fair value	<u>\$ 3,133</u>	<u>\$ 1,070</u>	<u>\$ —</u>	<u>\$ 4,203</u>

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

	As of December 31, 2017			
	Fair Value Measured and Recorded Using			Total
	Level 1	Level 2	Level 3	
Assets				
Available for sale securities:				
Debt securities:				
U.S. treasury securities	\$ 3,820	\$ —	\$ —	\$ 3,820
Debt securities issued by U.S. federal agencies	—	4,901	—	4,901
Corporate debt securities	—	20,023	—	20,023
Asset-backed securities	—	3,577	—	3,577
Collateralized mortgage obligations	—	2,366	—	2,366
Total available for sale debt securities	3,820	30,867	—	34,687
Equity securities	133,595	—	—	133,595
Warehouse receivables	—	928,038	—	928,038
Total assets at fair value	\$ 137,415	\$ 958,905	\$ —	\$ 1,096,320
Liabilities				
Interest rate swaps	\$ —	\$ 4,766	\$ —	\$ 4,766
Securities sold, not yet purchased	3,431	—	—	3,431
Foreign currency exchange forward contracts	—	55	—	55
Total liabilities at fair value	\$ 3,431	\$ 4,821	\$ —	\$ 8,252

During the year ended December 31, 2018, we recorded a gain of \$100.4 million associated with remeasuring our 50% investment in a previously unconsolidated subsidiary in New England to fair value as of the date we acquired the remaining 50% controlling interest. Fair value of this investment in unconsolidated subsidiary at acquisition date was \$110.1 million, based upon the purchase price paid for the remaining 50% interest acquired, excluding the estimated control premium paid, which falls under Level 3 of the fair value hierarchy. Such gain was reflected in other income in our Americas segment in the accompanying consolidated statements of operations for the year ended December 31, 2018.

There were no significant non-recurring fair value measurements recorded during the years ended December 31, 2017 and 2016.

The fair values of the warehouse receivables are primarily calculated based on already locked in security buy prices. At December 31, 2018 and 2017, all of the warehouse receivables included in the accompanying consolidated balance sheets were either under commitment to be purchased by Freddie Mac or had confirmed forward trade commitments for the issuance and purchase of Fannie Mae or Ginnie Mae mortgage backed securities that will be secured by the underlying loans (See Notes 2 and 5). These assets are classified as Level 2 in the fair value hierarchy as a substantial majority of inputs are readily observable.

The valuation of interest rate swaps and foreign currency exchange forward contracts is determined using widely accepted valuation techniques including discounted cash flow analysis on the expected cash flows of each derivative. This analysis reflects the contractual terms of the derivatives, including the period to maturity, and uses observable market-based inputs, including interest rate and foreign currency exchange forward curves. The fair values of interest rate swaps and foreign currency exchange forward contracts are determined using the market standard methodology of netting the discounted future estimated cash payments/receipts. The estimated cash flows are based on an expectation of future interest rates or foreign currency exchange rates using forward curves derived from observable market interest rate and foreign currency exchange forward curves.

Fair value measurements for our available for sale debt securities are obtained from independent pricing services which utilize observable market data that may include quoted market prices, dealer quotes, market spreads, cash flows, the U.S. treasury yield curve, trading levels, market consensus prepayment speeds, credit information and the instrument's terms and conditions.

The equity securities and securities sold, not yet purchased are primarily in the U.S. and are generally valued at the last reported sales price on the day of valuation or, if no sales occurred on the valuation date, at the mean of the bid and asked prices on such date.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

FASB ASC Topic 825, “*Financial Instruments*” requires disclosure of fair value information about financial instruments, whether or not recognized in the accompanying consolidated balance sheets. Our financial instruments are as follows:

- *Cash and Cash Equivalents and Restricted Cash* – These balances include cash and cash equivalents as well as restricted cash with maturities of less than three months. The carrying amount approximates fair value due to the short-term maturities of these instruments.
- *Receivables, less Allowance for Doubtful Accounts*– Due to their short-term nature, fair value approximates carrying value.
- *Warehouse Receivables* – These balances are carried at fair value. The primary source of value is either a contractual purchase commitment from Freddie Mac or a confirmed forward trade commitment for the issuance and purchase of a Fannie Mae or Ginnie Mae MBS (see Notes 2 and 5).
- *Available For Sale Debt Securities*– These investments are carried at their fair value.
- *Equity Securities* – These investments are carried at their fair value.
- *Foreign Currency Exchange Forward Contracts*– These assets and liabilities are carried at their fair value as calculated by using widely accepted valuation techniques including discounted cash flow analysis on the expected cash flows of each derivative.
- *Securities Sold, not yet Purchased*– These liabilities are carried at their fair value.
- *Short-Term Borrowings* – This balance represents outstanding amounts under our warehouse lines of credit of our wholly-owned subsidiary, CBRE Capital Markets. Due to the short-term nature and variable interest rates of these instruments, fair value approximates carrying value (see Notes 5 and 11).
- *Senior Term Loans* – Based upon information from third-party banks (which falls within Level 2 of the fair value hierarchy), the estimated fair value of our senior term loans was approximately \$757.0 million and \$199.9 million at December 31, 2018 and 2017, respectively. Their actual carrying value, net of unamortized debt issuance costs, totaled \$751.3 million and \$193.5 million at December 31, 2018 and 2017, respectively (see Note 11).
- *Interest Rate Swaps* – These liabilities are carried at their fair value as calculated by using widely-accepted valuation techniques including discounted cash flow analysis on the expected cash flows of each derivative (see Note 11).
- *Senior Notes* – Based on dealers’ quotes (which falls within Level 2 of the fair value hierarchy), the estimated fair values of our 4.875% senior notes and 5.25% senior notes were \$616.4 million and \$443.7 million, respectively, at December 31, 2018 and \$645.7 million and \$468.0 million, respectively, at December 31, 2017. The actual carrying value of our 4.875% senior notes and 5.25% senior notes, net of unamortized debt issuance costs as well as unamortized discount or premium, if applicable, totaled \$592.8 million and \$422.7 million, respectively, at December 31, 2018 and \$592.0 million and \$422.4 million, respectively, at December 31, 2017. In March 2018, we redeemed our 5.00% senior notes in full (see Note 11). At December 31, 2017, the estimated fair value (based on dealers’ quotes) and actual carrying value (net of unamortized debt issuance costs) of our 5.00% senior notes was \$823.8 million and \$791.7 million, respectively.
- *Notes Payable on Real Estate* – As of December 31, 2018 and 2017, the carrying value of our notes payable on real estate, net of unamortized debt issuance costs, was \$6.3 million and \$17.9 million, respectively. These notes payable were not recourse to CBRE Group, Inc., except for being recourse to the single-purpose entities that held the real estate assets and were the primary obligors on the notes payable. These borrowings have either fixed interest rates or floating interest rates at spreads added to a market index. Although it is possible that certain portions of our notes payable on real estate may have fair values that differ from their carrying values, based on the terms of such loans as compared to current market conditions, or other factors specific to the borrower entity, we do not believe that the fair value of our notes payable is significantly different than their carrying value.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

8. Property and Equipment

Property and equipment consists of the following (dollars in thousands):

	Useful Lives	December 31,	
		2018	2017
Computer hardware and software	3-10 years	\$ 838,301	\$ 670,059
Leasehold improvements	1-15 years	472,952	415,947
Furniture and equipment	1-10 years	307,812	279,621
Equipment under capital leases	3-5 years	10,654	10,803
Total cost		1,629,719	1,376,430
Accumulated depreciation and amortization		(908,027)	(758,691)
Property and equipment, net		\$ 721,692	\$ 617,739

Depreciation and amortization expense associated with property and equipment was \$192.8 million, \$166.0 million and \$151.2 million for the years ended December 31, 2018, 2017 and 2016, respectively.

9. Goodwill and Other Intangible Assets

The following table summarizes the changes in the carrying amount of goodwill for the years ended December 31, 2018 and 2017 (dollars in thousands):

	Americas	EMEA	Asia Pacific	Global Investment Management	Development Services	Total
Balance as of December 31, 2016:						
Goodwill	\$ 2,302,929	\$ 1,047,295	\$ 150,706	\$ 462,305	\$ 86,663	\$ 4,049,898
Accumulated impairment losses	(798,290)	(138,631)	—	(44,922)	(86,663)	(1,068,506)
	1,504,639	908,664	150,706	417,383	—	2,981,392
Purchase accounting entries related to acquisitions	104,654	17,402	4,198	17,568	—	143,822
Foreign exchange movement	993	91,761	11,204	25,568	—	129,526
Balance as of December 31, 2017:						
Goodwill	2,408,576	1,156,458	166,108	505,441	86,663	4,323,246
Accumulated impairment losses	(798,290)	(138,631)	—	(44,922)	(86,663)	(1,068,506)
	1,610,286	1,017,827	166,108	460,519	—	3,254,740
Purchase accounting entries related to acquisitions	450,380	17,838	8,096	(5,110)	—	471,204
Foreign exchange movement	(1,623)	(51,753)	(8,556)	(11,703)	—	(73,635)
Balance as of December 31, 2018:						
Goodwill	2,857,333	1,122,543	165,648	488,628	86,663	4,720,815
Accumulated impairment losses	(798,290)	(138,631)	—	(44,922)	(86,663)	(1,068,506)
	\$ 2,059,043	\$ 983,912	\$ 165,648	\$ 443,706	\$ —	\$ 3,652,309

In the second quarter of 2018, we completed the FacilitySource Acquisition (see Note 4). Additionally, during 2018, we acquired a retail leasing and property management firm in Australia, two firms in Israel (our former affiliate and a majority interest in a local facilities management provider), a commercial real estate services provider in San Antonio, a provider of real estate and facilities consulting services to healthcare companies across the United States and the remaining 50% equity interest in our longstanding New England joint venture.

During 2017, we completed 11 in-fill acquisitions, including two leading Software as a Service (SaaS) platforms – one that produces scalable interactive visualization technologies for commercial real estate and one that provides technology solutions for facilities management operations, a healthcare-focused project manager in Australia, a full-service brokerage and management boutique in South Florida, a technology-enabled national boutique commercial real estate finance and consulting firm in the United States, a retail consultancy in France, a majority interest in a Toronto-based investment management business specializing in private infrastructure and private equity investments, a San Francisco-based technology-focused boutique real estate brokerage firm, a project management and design engineering firm operating across the United States, a Washington, D.C.-based retail brokerage operation and a leading technical engineering services provider in Italy.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Our annual assessment of goodwill and other intangible assets deemed to have indefinite lives has historically been completed as of the beginning of the fourth quarter of each year. We performed the 2018, 2017 and 2016 assessments as of October 1. When we performed our required annual goodwill impairment review as of October 1, 2018, 2017 and 2016, we determined that no impairment existed as the estimated fair value of our reporting units was in excess of their carrying value.

Other intangible assets totaled \$1.4 billion, net of accumulated amortization of \$1.2 billion as of December 31, 2018, and \$1.4 billion, net of accumulated amortization of \$1.0 billion, as of December 31, 2017 and are comprised of the following (dollars in thousands):

	December 31,			
	2018		2017	
	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Unamortizable intangible assets:				
Management contracts	\$ 86,585		\$ 90,503	
Trademarks	56,800		56,800	
Trade names	16,250		16,250	
	<u>159,635</u>		<u>163,553</u>	
Amortizable intangible assets:				
Customer relationships	843,387	\$ (435,225)	802,597	\$ (355,642)
Mortgage servicing rights	697,322	(272,852)	608,757	(235,626)
Trademarks/Trade name	312,699	(76,514)	321,406	(64,866)
Management contracts	200,251	(135,835)	203,291	(122,450)
Covenant not to compete	73,750	(73,750)	73,750	(57,358)
Other	334,657	(186,217)	226,496	(164,796)
	<u>2,462,066</u>	<u>(1,180,393)</u>	<u>2,236,297</u>	<u>(1,000,738)</u>
Total intangible assets	<u>\$ 2,621,701</u>	<u>\$ (1,180,393)</u>	<u>\$ 2,399,850</u>	<u>\$ (1,000,738)</u>

Unamortizable intangible assets include management contracts identified as a result of the REIM Acquisitions relating to relationships with open-end funds, a trademark separately identified as a result of the 2001 Acquisition and a trade name separately identified in connection with the REIM Acquisitions, which represents the Clarion Partners trade name in the U.S. These intangible assets have indefinite useful lives and accordingly are not being amortized.

Customer relationships relate to existing relationships acquired through acquisitions mainly in the brokerage, occupier outsourcing and property management lines of business that are being amortized over useful lives of up to 20 years.

Mortgage servicing rights represent the carrying value of servicing assets in our mortgage brokerage line of business in the U.S. The mortgage servicing rights are being amortized over the estimated period that net servicing income is expected to be received, which is typically up to ten years.

In connection with the GWS Acquisition, trademarks of approximately \$280 million were separately identified and are being amortized over 20 years.

Management contracts consist primarily of asset management contracts relating to relationships with closed-end funds and separate accounts in the U.S., Europe and Asia that were separately identified as a result of the REIM Acquisitions. These management contracts are being amortized over useful lives of up to 13 years.

A covenant not to compete of approximately \$74 million was separately identified in connection with the GWS Acquisition and was amortized over three years.

Other amortizable intangible assets mainly represent transition costs, which primarily get amortized to cost of services over the life of the associated contract.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Amortization expense related to intangible assets was \$258.7 million, \$238.7 million and \$211.7 million for the years ended December 31, 2018, 2017 and 2016, respectively. The estimated annual amortization expense for each of the years ending December 31, 2019 through December 31, 2023 approximates \$208.2 million, \$182.2 million, \$151.4 million, \$134.1 million and \$119.9 million, respectively.

10. Investments in Unconsolidated Subsidiaries

Investments in unconsolidated subsidiaries are accounted for under the equity method of accounting. Our investment ownership percentages in equity method investments vary, generally ranging up to 5.0% in our Global Investment Management segment, up to 30.0% in our Development Services segment, and up to 50.0% in our other business segments.

Combined condensed financial information for the entities accounted for using the equity method is as follows (dollars in thousands):

Condensed Balance Sheets Information:

	December 31,	
	2018	2017
Global Investment Management		
Current assets	\$ 824,884	\$ 1,304,249
Non-current assets	16,296,613	15,369,496
Total assets	\$ 17,121,497	\$ 16,673,745
Current liabilities	\$ 409,014	\$ 526,777
Non-current liabilities	4,423,313	4,354,825
Total liabilities	\$ 4,832,327	\$ 4,881,602
Non-controlling interests	\$ 261,654	\$ 83,579
Development Services		
Current assets	\$ 3,058,166	\$ 2,995,449
Non-current assets	99,728	102,508
Total assets	\$ 3,157,894	\$ 3,097,957
Current liabilities	\$ 1,478,461	\$ 1,451,239
Non-current liabilities	67,913	110,649
Total liabilities	\$ 1,546,374	\$ 1,561,888
Other		
Current assets	\$ 48,061	\$ 86,171
Non-current assets	182,564	76,577
Total assets	\$ 230,625	\$ 162,748
Current liabilities	\$ 32,480	\$ 54,211
Non-current liabilities	3,891	1,340
Total liabilities	\$ 36,371	\$ 55,551
Total		
Current assets	\$ 3,931,111	\$ 4,385,869
Non-current assets	16,578,905	15,548,581
Total assets	\$ 20,510,016	\$ 19,934,450
Current liabilities	\$ 1,919,955	\$ 2,032,227
Non-current liabilities	4,495,117	4,466,814
Total liabilities	\$ 6,415,072	\$ 6,499,041
Non-controlling interests	\$ 261,654	\$ 83,579

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Condensed Statements of Operations Information:

	Year Ended December 31,		
	2018	2017	2016
Global Investment Management			
Revenue	\$ 1,199,641	\$ 1,108,125	\$ 1,184,573
Operating income	641,150	972,493	209,230
Net income	463,560	833,189	122,560
Development Services			
Revenue	\$ 124,175	\$ 104,816	\$ 85,594
Operating income	254,191	427,407	292,141
Net income	204,619	395,697	269,841
Other			
Revenue	\$ 200,869	\$ 179,649	\$ 156,035
Operating income	11,548	25,924	26,500
Net income	11,533	25,459	26,350
Total			
Revenue	\$ 1,524,685	\$ 1,392,590	\$ 1,426,202
Operating income	906,889	1,425,824	527,871
Net income	679,712	1,254,345	418,751

Our Global Investment Management segment invests our own capital in certain real estate investments with clients. We have provided investment management, property management, brokerage and other professional services in connection with these real estate investments on an arm's length basis and earned revenues from these unconsolidated subsidiaries of \$134.3 million, \$100.3 million and \$86.8 million during the years ended December 31, 2018, 2017 and 2016, respectively.

11. Long-Term Debt and Short-Term Borrowings

Total long-term debt and short-term borrowings consist of the following (dollars in thousands):

	December 31,	
	2018	2017
Long-Term Debt		
Senior term loans, with interest ranging from 0.75% to 3.38%, due through 2023	\$ 758,452	\$ 200,000
4.875% senior notes due in 2026, net of unamortized discount	596,653	596,273
5.25% senior notes due in 2025, net of unamortized premium	426,134	426,317
5.00% senior notes, redeemed in March 2018	—	800,000
Other	3,682	8
Total long-term debt	1,784,921	2,022,598
Less: current maturities of long-term debt	(3,146)	(8)
Less: unamortized debt issuance costs	(14,515)	(22,987)
Total long-term debt, net of current maturities	\$ 1,767,260	\$ 1,999,603
Short-Term Borrowings		
Warehouse lines of credit, with interest ranging from 2.82% to 5.25%, due in 2019	\$ 1,328,761	\$ 910,766
Other	—	16
Total short-term borrowings	\$ 1,328,761	\$ 910,782

Future annual aggregate maturities of total consolidated gross debt (excluding unamortized discount, premium and deferred financing costs) at December 31, 2018 are as follows (dollars in thousands): 2019—\$1,331,907; 2020—\$536; 2021—\$0; 2022—\$300,000; 2023—\$458,452 and \$1,025,000 thereafter.

Long-Term Debt

We maintain credit facilities with third-party lenders, which we use for a variety of purposes. On January 9, 2015, CBRE Services, our wholly-owned subsidiary, entered into an amended and restated credit agreement (2015 Credit Agreement) with a syndicate of banks jointly led by Merrill Lynch, Pierce, Fenner & Smith Incorporated, J.P. Morgan Securities LLC and Credit Suisse AG (CS). On March 21, 2016, CBRE Services executed an amendment to the 2015 Credit Agreement that, among other things, extended the maturity on the revolving credit facility to March 2021 and increased the borrowing capacity under the revolving credit facility by \$200.0 million. On October 31, 2017, CBRE Services entered into a new Credit Agreement (the 2017 Credit Agreement), which refinanced and replaced the 2015 Credit Agreement. We used \$200.0 million of borrowings from the tranche A term loan facility and \$83.0 million of revolving credit facility borrowings under the 2017 Credit Agreement, in addition to cash on hand, to repay all amounts outstanding under the 2015 Credit Agreement. On December 20, 2018, CBRE Global Acquisition Company, a wholly-owned subsidiary of CBRE Services, entered into an incremental term loan assumption agreement with a syndicate of banks jointly led by Wells Fargo Bank and National Westminster Bank plc to establish a new euro term loan facility under the 2017 Credit Agreement in an aggregate principal amount of 400.0 million euros. The proceeds of the new euro term loan facility were used to repay a portion of the U.S. dollar denominated term loans outstanding under the 2017 Credit Agreement.

The 2017 Credit Agreement is a senior unsecured credit facility that is jointly and severally guaranteed by us and certain of our subsidiaries. As of December 31, 2018, the 2017 Credit Agreement provided for the following: (1) a \$2.8 billion revolving credit facility, which includes the capacity to obtain letters of credit and swingline loans and matures on October 31, 2022; (2) a \$750.0 million delayed draw tranche A term loan facility, requiring quarterly principal payments, which began on March 5, 2018 and continue through maturity on October 31, 2022, provided that in the event that our leverage ratio (as defined in the 2017 Credit Agreement) is less than or equal to 2.50 to 1.00 on the last day of the fiscal quarter immediately preceding any such payment date, no such quarterly principal payment shall be required on such date and (3) a 400.0 million euro term loan facility due and payable in full at maturity on December 20, 2023.

As of December 31, 2018, borrowings under the tranche A term loan facility under the 2017 Credit Agreement bear interest, based at our option, on either (1) the applicable fixed rate plus 0.875% to 1.25% or (2) the daily rate plus 0.0% to 0.25%, in each case as determined by reference to our Credit Rating (as defined in the 2017 Credit Agreement) and borrowings under the euro term loan facility under the 2017 Credit Agreement bear interest at a minimum rate of 0.75% plus EURIBOR (as of December 31, 2018, EURIBOR was negative). We had \$294.4 million and \$193.5 million of tranche A term loan borrowings outstanding under the 2017 Credit Agreement (at interest rates of 3.36% and 2.51%), net of unamortized debt issuance costs, included in the accompanying consolidated balance sheets at December 31, 2018 and 2017, respectively. In addition, as of December 31, 2018, we had \$456.9 million of euro term loan borrowings outstanding under the 2017 Credit Agreement (at an interest rate of 0.75%), net of unamortized debt issuance costs, which was included in the accompanying consolidated balance sheets.

In March 2011, we entered into five interest rate swap agreements, all with effective dates in October 2011, and immediately designated them as cash flow hedges in accordance with FASB ASC Topic 815, "*Derivatives and Hedging*". The purpose of these interest rate swap agreements is to attempt to hedge potential changes to our cash flows due to the variable interest nature of our senior term loan facilities. The total notional amount of these interest rate swap agreements is \$400.0 million, with \$200.0 million having expired in October 2017 and \$200.0 million expiring in September 2019. The ineffective portion of the change in fair value of the derivatives is recognized directly in earnings. There was no significant hedge ineffectiveness for the years ended December 31, 2018, 2017 and 2016. The effective portion of changes in the fair value of derivatives designated and qualifying as cash flow hedges is recorded in accumulated other comprehensive loss on the balance sheet and is subsequently reclassified into earnings in the period that the hedged forecasted transaction affects earnings. We reclassified \$2.7 million, \$7.4 million and \$10.7 million for the years ended December 31, 2018, 2017, and 2016, respectively, from accumulated other comprehensive loss to interest expense. During the next twelve months, we estimate that \$1.1 million will be reclassified from accumulated other comprehensive loss to interest expense. In addition, we recorded net gains of \$1.0 million and \$0.9 million and a net loss of \$2.4 million for the years ended December 31, 2018, 2017 and 2016, respectively, to other comprehensive loss in relation to such interest rate swap agreements. As of December 31, 2018 and 2017, the fair values of such interest rate swap agreements were reflected as a \$1.1 million liability (included in other current liabilities) and a \$4.8 million liability (included in other liabilities), respectively, in the accompanying consolidated balance sheets.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

On August 13, 2015, CBRE Services issued \$600.0 million in aggregate principal amount of 4.875% senior notes due March 1, 2026 at a price equal to 99.24% of their face value. The 4.875% senior notes are unsecured obligations of CBRE Services, senior to all of its current and future subordinated indebtedness, but effectively subordinated to all of its current and future secured indebtedness. The 4.875% senior notes are jointly and severally guaranteed on a senior basis by us and each domestic subsidiary of CBRE Services that guarantees our 2017 Credit Agreement. Interest accrues at a rate of 4.875% per year and is payable semi-annually in arrears on March 1 and September 1, with the first interest payment made on March 1, 2016. The 4.875% senior notes are redeemable at our option, in whole or in part, prior to December 1, 2025 at a redemption price equal to the greater of (1) 100% of the principal amount of the 4.875% senior notes to be redeemed and (2) the sum of the present values of the remaining scheduled payments of principal and interest thereon to December 1, 2025 (not including any portions of payments of interest accrued as of the date of redemption) discounted to the date of redemption on a semi-annual basis at the Adjusted Treasury Rate (as defined in the indenture governing these notes). In addition, at any time on or after December 1, 2025, the 4.875% senior notes may be redeemed by us, in whole or in part, at a redemption price equal to 100.0% of the principal amount, plus accrued and unpaid interest, if any, to (but excluding) the date of redemption. If a change of control triggering event (as defined in the indenture governing these notes) occurs, we are obligated to make an offer to purchase the then outstanding 4.875% senior notes at a redemption price of 101.0% of the principal amount, plus accrued and unpaid interest, if any, to the date of purchase. The amount of the 4.875% senior notes, net of unamortized discount and unamortized debt issuance costs, included in the accompanying consolidated balance sheets was \$592.8 million and \$592.0 million at December 31, 2018 and 2017, respectively.

On September 26, 2014, CBRE Services issued \$300.0 million in aggregate principal amount of 5.25% senior notes due March 15, 2025. On December 12, 2014, CBRE Services issued an additional \$125.0 million in aggregate principal amount of 5.25% senior notes due March 15, 2025 at a price equal to 101.5% of their face value, plus interest deemed to have accrued from September 26, 2014. The 5.25% senior notes are unsecured obligations of CBRE Services, senior to all of its current and future subordinated indebtedness, but effectively subordinated to all of its current and future secured indebtedness. The 5.25% senior notes are jointly and severally guaranteed on a senior basis by us and each domestic subsidiary of CBRE Services that guarantees our 2017 Credit Agreement. Interest accrues at a rate of 5.25% per year and is payable semi-annually in arrears on March 15 and September 15, with the first interest payment made on March 15, 2015. The 5.25% senior notes are redeemable at our option, in whole or in part, prior to December 15, 2024 at a redemption price equal to the greater of (1) 100% of the principal amount of the 5.25% senior notes to be redeemed and (2) the sum of the present values of the remaining scheduled payments of principal and interest thereon to December 15, 2024 (not including any portions of payments of interest accrued as of the date of redemption) discounted to the date of redemption on a semi-annual basis at the Adjusted Treasury Rate (as defined in the indentures governing these notes). In addition, at any time on or after December 15, 2024, the 5.25% senior notes may be redeemed by us, in whole or in part, at a redemption price equal to 100.0% of the principal amount, plus accrued and unpaid interest, if any, to (but excluding) the date of redemption. If a change of control triggering event (as defined in the indenture governing these notes) occurs, we are obligated to make an offer to purchase the then outstanding 5.25% senior notes at a redemption price of 101.0% of the principal amount, plus accrued and unpaid interest, if any, to the date of purchase. The amount of the 5.25% senior notes, net of unamortized premium and unamortized debt issuance costs, included in the accompanying consolidated balance sheets was \$422.7 million and \$422.4 million at December 31, 2018 and 2017, respectively.

On March 14, 2013, CBRE Services issued \$800.0 million in aggregate principal amount of 5.00% senior notes due March 15, 2023. The 5.00% senior notes were unsecured obligations of CBRE Services, senior to all of its current and future subordinated indebtedness, but effectively subordinated to all of its current and future secured indebtedness. The 5.00% senior notes were jointly and severally guaranteed on a senior basis by us and each domestic subsidiary of CBRE Services that guaranteed our 2017 Credit Agreement. Interest accrued at a rate of 5.00% per year and was payable semi-annually in arrears on March 15 and September 15. The 5.00% senior notes were redeemable at our option, in whole or in part, on March 15, 2018 at a redemption price of 102.5% of the principal amount on that date. We redeemed these notes in full on March 15, 2018 and incurred charges of \$28.0 million, including a premium of \$20.0 million and the write-off of \$8.0 million of unamortized deferred financing costs. We funded this redemption with \$550.0 million of borrowings from our tranche A term loan facility and borrowings from our revolving credit facility under our 2017 Credit Agreement. The amount of the 5.00% senior notes, net of unamortized debt issuance costs, included in the accompanying consolidated balance sheets was \$791.7 million at December 31, 2017.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The indentures governing our 4.875% senior notes and 5.25% senior notes contain restrictive covenants that, among other things, limit our ability to create or permit liens on assets securing indebtedness, enter into sale/leaseback transactions and enter into consolidations or mergers. In addition, our 2017 Credit Agreement also requires us to maintain a minimum coverage ratio of consolidated EBITDA (as defined in the 2017 Credit Agreement) to consolidated interest expense of 2.00x and a maximum leverage ratio of total debt less available cash to consolidated EBITDA (as defined in the 2017 Credit Agreement) of 4.25x (and in the case of the first four full fiscal quarters following consummation of a qualified acquisition (as defined in the 2017 Credit Agreement), 4.75x) as of the end of each fiscal quarter. On this basis, our coverage ratio of consolidated EBITDA to consolidated interest expense was 20.61x for the year ended December 31, 2018, and our leverage ratio of total debt less available cash to consolidated EBITDA was 0.61x as of December 31, 2018.

Short-Term Borrowings

We had short-term borrowings of \$1.3 billion and \$910.8 million as of December 31, 2018 and 2017, respectively, with related weighted average interest rates of 3.8% and 2.7%, respectively, which are included in the accompanying consolidated balance sheets.

Revolving Credit Facility

The revolving credit facility under the 2017 Credit Agreement allows for borrowings outside of the U.S., with a \$200.0 million sub-facility available to one of our Canadian subsidiaries, one of our Australian subsidiaries and one of our New Zealand subsidiaries and a \$300.0 million sub-facility available to one of our U.K. subsidiaries. Borrowings under the revolving credit facility bear interest at varying rates, based at our option, on either (1) the applicable fixed rate plus 0.775% to 1.075% or (2) the daily rate plus 0.0% to 0.075%, in each case as determined by reference to our Credit Rating (as defined in the 2017 Credit Agreement). The 2017 Credit Agreement requires us to pay a fee based on the total amount of the revolving credit facility commitment (whether used or unused). As of both December 31, 2018 and 2017, no amounts were outstanding under our revolving credit facility other than letters of credit totaling \$2.0 million. These letters of credit, which reduce the amount we may borrow under the revolving credit facility, were primarily issued in the ordinary course of business.

Warehouse Lines of Credit

CBRE Capital Markets has warehouse lines of credit with third-party lenders for the purpose of funding mortgage loans that will be resold, and a funding arrangement with Fannie Mae for the purpose of selling a percentage of certain closed multifamily loans to Fannie Mae. These warehouse lines are recourse only to CBRE Capital Markets and are secured by our related warehouse receivables. See Note 5 for additional information.

12. Commitments and Contingencies

We are a party to a number of pending or threatened lawsuits arising out of, or incident to, our ordinary course of business. We believe that any losses in excess of the amounts accrued therefor as liabilities on our financial statements are unlikely to be significant, but litigation is inherently uncertain and there is the potential for a material adverse effect on our financial statements if one or more matters are resolved in a particular period in an amount materially in excess of what we anticipated.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Our leases generally relate to office space that we occupy, have varying terms and expire at various dates through 2036. The following is a schedule by year of future minimum lease payments for noncancelable operating leases as of December 31, 2018 (dollars in thousands):

2019	\$ 238,954
2020	219,351
2021	202,205
2022	172,267
2023	145,705
Thereafter	510,741
Total minimum payment required	<u>\$ 1,489,223</u>

Total minimum payments for noncancelable operating leases were not reduced by the minimum sublease rental income of \$15.4 million due in the future under noncancelable subleases.

Substantially all leases require us to pay maintenance costs, insurance and property taxes. The composition of total rental expense under noncancelable operating leases consisted of the following (dollars in thousands):

	Year Ended December 31,		
	2018	2017	2016
Minimum rentals	\$ 294,107	\$ 276,676	\$ 252,285
Less sublease rentals	(2,808)	(3,446)	(4,322)
	<u>\$ 291,299</u>	<u>\$ 273,230</u>	<u>\$ 247,963</u>

In January 2008, CBRE MCI, a wholly-owned subsidiary of CBRE Capital Markets, entered into an agreement with Fannie Mae under Fannie Mae's DUS Program to provide financing for multifamily housing with five or more units. Under the DUS Program, CBRE MCI originates, underwrites, closes and services loans without prior approval by Fannie Mae, and typically, is subject to sharing up to one-third of any losses on loans originated under the DUS Program. CBRE MCI has funded loans subject to such loss sharing arrangements with unpaid principal balances of \$23.2 billion at December 31, 2018. CBRE MCI, under its agreement with Fannie Mae, must post cash reserves or other acceptable collateral under formulas established by Fannie Mae to provide for sufficient capital in the event losses occur. As of December 31, 2018 and 2017, CBRE MCI had a \$64.0 million and a \$58.0 million, respectively, letter of credit under this reserve arrangement, and had recorded a liability of approximately \$37.9 million and \$32.9 million, respectively, for its loan loss guarantee obligation under such arrangement. Fannie Mae's recourse under the DUS Program is limited to the assets of CBRE MCI, which assets totaled approximately \$946.9 million (including \$677.4 million of warehouse receivables, a substantial majority of which are pledged against warehouse lines of credit and are therefore not available to Fannie Mae) at December 31, 2018.

CBRE Capital Markets participates in Freddie Mac's Multifamily Small Balance Loan (SBL) Program. Under the SBL program, CBRE Capital Markets has certain repurchase and loss reimbursement obligations. These obligations are for the period from origination of the loan to the securitization date. CBRE Capital Markets must post a cash reserve or other acceptable collateral to provide for sufficient capital in the event the obligations are triggered. As of both December 31, 2018 and 2017, CBRE Capital Markets had posted a \$5.0 million letter of credit under this reserve arrangement.

We had outstanding letters of credit totaling \$74.9 million as of December 31, 2018, excluding letters of credit for which we have outstanding liabilities already accrued on our consolidated balance sheet related to our subsidiaries' outstanding reserves for claims under certain insurance programs as well as letters of credit related to operating leases. The CBRE Capital Markets letters of credit totaling \$69.0 million as of December 31, 2018 referred to in the preceding paragraphs represented the majority of the \$74.9 million outstanding letters of credit as of such date. The remaining letters of credit are primarily executed by us in the ordinary course of business and expire at varying dates through September 2019.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

We had guarantees totaling \$56.3 million as of December 31, 2018, excluding guarantees related to pension liabilities, consolidated indebtedness and other obligations for which we have outstanding liabilities already accrued on our consolidated balance sheet, and excluding guarantees related to operating leases. The \$56.3 million primarily represents guarantees executed by us in the ordinary course of business, including various guarantees of management and vendor contracts in our operations overseas, which expire at the end of each of the respective agreements.

In addition, as of December 31, 2018, we had issued numerous non-recourse carveout, completion and budget guarantees relating to development projects for the benefit of third parties. These guarantees are commonplace in our industry and are made by us in the ordinary course of our Development Services business. Non-recourse carveout guarantees generally require that our project-entity borrower not commit specified improper acts, with us potentially liable for all or a portion of such entity's indebtedness or other damages suffered by the lender if those acts occur. Completion and budget guarantees generally require us to complete construction of the relevant project within a specified timeframe and/or within a specified budget, with us potentially being liable for costs to complete in excess of such timeframe or budget. However, we generally use "guaranteed maximum price" contracts with reputable, bondable general contractors with respect to projects for which we provide these guarantees. These contracts are intended to pass the risk to such contractors. While there can be no assurance, we do not expect to incur any material losses under these guarantees.

An important part of the strategy for our Global Investment Management business involves investing our capital in certain real estate investments with our clients. These co-investments generally total up to 2.0% of the equity in a particular fund. As of December 31, 2018, we had aggregate commitments of \$53.7 million to fund future co-investments.

Additionally, an important part of our Development Services business strategy is to invest in unconsolidated real estate subsidiaries as a principal (in most cases co-investing with our clients). As of December 31, 2018, we had committed to fund \$34.7 million of additional capital to these unconsolidated subsidiaries.

13. Employee Benefit Plans

Stock Incentive Plans

2012 Equity Incentive Plan. Our 2012 equity incentive plan was adopted by our board of directors and approved by our stockholders on May 8, 2012. The 2012 equity incentive plan authorized the grant of stock-based awards to our employees, directors and independent contractors. However, our 2012 stock incentive plan was terminated in May 2017 in connection with the adoption of our 2017 equity incentive plan, which is described below. At termination, no unissued shares from the 2012 stock incentive plan were allocated to the 2017 equity incentive plan for potential future issuance. Since our 2012 stock incentive plan has been terminated, no new awards may be granted under it. However, as of December 31, 2018, assuming the maximum number of shares under our performance-based awards will later be issued, 3,255,964 outstanding restricted stock unit (RSU) awards granted under the 2012 stock incentive plan to acquire shares of our Class A common stock remain outstanding according to their terms, and we will continue to issue shares to the extent required under the terms of such outstanding awards. Shares underlying awards that expire, terminate or lapse under the 2012 stock incentive plan will not become available for grant under the 2017 equity incentive plan.

2017 Equity Incentive Plan. Our 2017 equity incentive plan was adopted by our board of directors and approved by our stockholders on May 19, 2017. The 2017 equity incentive plan authorizes the grant of stock-based awards to our employees, directors and independent contractors. Unless terminated earlier, the 2017 equity incentive plan will terminate on March 3, 2027. A total of 10,000,000 shares of our Class A common stock were reserved for issuance under the 2017 equity incentive plan. Additionally, shares underlying expired, canceled, forfeited or terminated awards (other than awards granted in substitution of an award previously granted), plus those utilized to pay tax withholding obligations with respect to an award (other than an option or stock appreciation right) will be available for issuance under the 2017 equity incentive plan. No person is eligible to be granted equity awards in the aggregate covering more than 3,300,000 shares during any fiscal year or cash awards in excess of \$5.0 million for any fiscal year. The number of shares issued or reserved pursuant to the 2017 equity incentive plan, or pursuant to

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

outstanding awards, is subject to adjustment on account of a stock split of our outstanding shares, stock dividend, dividend payable in a form other than shares in an amount that has a material effect on the price of the shares, consolidation, combination or reclassification of the shares, recapitalization, spin-off, or other similar occurrence. Stock options and stock appreciation rights granted under the 2017 equity incentive plan are subject to a maximum term of ten years from the date of grant. All awards are generally subject to a minimum three year vesting schedule. As of December 31, 2018, assuming the maximum number of shares under our performance-based awards will later be issued, 3,632,717 shares remained available for future grants under this plan.

Non-Vested Stock Awards

We have issued non-vested stock awards, including restricted stock units and restricted shares, in our Class A common stock to certain of our employees, independent contractors and members of our board of directors. The following is a summary of the awards granted during the years ended December 31, 2018, 2017 and 2016.

- During the year ended December 31, 2018, we granted RSUs that are performance vesting in nature, with 1,014,269 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 1,332,085 RSUs that are time vesting in nature.
- During the year ended December 31, 2017, we granted RSUs that are performance vesting in nature, with 1,458,033 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 1,466,986 RSUs that are time vesting in nature.
- During the year ended December 31, 2016, we granted RSUs that are performance vesting in nature, with 60,098 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 1,436,310 RSUs that are time vesting in nature.

Our annual performance-vesting awards generally vest in full three years from the grant date, based on our achievement against various adjusted income per share performance targets, or in some cases against adjusted EBITDA performance targets of our consolidated business, business lines or regions. Our time-vesting awards generally vest 25% per year over four years from the grant date.

In addition, on December 1, 2017, we made a special grant of RSUs under our 2017 equity incentive plan (Special RSU grant) to certain of our employees, with 3,288,618 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 939,605 RSUs that are time vesting in nature. During 2018, we made additional grants under this Special RSU grant program to certain of our employees, with 122,610 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 35,031 RSUs that are time vesting in nature. As a condition to this Special RSU grant, each participant has agreed to execute a Restrictive Covenants Agreement. Each Special RSU grant consisted of:

- (i) Time Vesting RSUs with respect to 33.3% of the total number of target RSUs subject to the grant.
- (ii) Total Shareholder Return (TSR) Performance RSUs with respect to 33.3% of the total number of target RSUs subject to the grant. The actual number of TSR Performance RSUs that will vest is determined by measuring our cumulative TSR against the cumulative TSR of each of the other companies comprising the S&P 500 on the Grant Date (the Comparison Group) over a six-year measurement period commencing on the Grant Date and ending on December 1, 2023. For purposes of measuring TSR, the initial value of our common stock will be the average closing price of such common stock for the 60 trading days immediately preceding the Grant Date and the final value of our common stock will be the average closing price of such common stock for the 60 trading days immediately preceding December 1, 2023.
- (iii) EPS Performance RSUs with respect to 33.3% of the total number of target RSUs subject to the grant. The actual number of EPS Performance RSUs that will vest is determined by measuring our cumulative adjusted income per share growth against the cumulative EPS growth, as reported under GAAP (GAAP EPS), of each of the other members of the Comparison Group over a six-year measurement period commencing on January 1, 2018 and ending on December 31, 2023.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The Time Vesting and TSR Performance RSUs subject to the Special RSU grants vest on December 1, 2023, while the EPS Performance RSUs subject to the Special RSU grants vest on December 31, 2023.

We estimated the fair value of the TSR Performance RSUs referred to above on the date of the grant using a Monte Carlo simulation with the following assumptions:

	Year Ended December 31,	
	2018	2017
Volatility of common stock	25.02 %	27.85 %
Expected dividend yield	0.00 %	0.00 %
Risk-free interest rate	2.73 %	2.33 %

Lastly, on December 15, 2017, we granted 127,160 RSUs that are time vesting in nature to certain senior brokers. Such awards generally vest in full three years from the grant date.

A summary of the status of our non-vested stock awards is presented in the table below:

	Shares/Units	Weighted Average
		Market Value Per Share
Balance at December 31, 2015	7,467,065	\$ 29.08
Granted	1,496,408	29.24
Vested	(3,840,379)	25.09
Forfeited	(279,821)	28.62
Balance at December 31, 2016	4,843,273	31.66
Granted	5,152,082	40.11
Vested	(2,020,812)	29.75
Forfeited	(297,441)	32.85
Balance at December 31, 2017	7,677,102	37.76
Granted	2,023,266	45.70
Vested	(1,894,847)	34.29
Forfeited	(623,161)	40.85
Balance at December 31, 2018	7,182,360	41.04

Total compensation expense related to non-vested stock awards was \$128.2 million, \$93.1 million and \$63.5 million for the years ended December 31, 2018, 2017 and 2016, respectively. At December 31, 2018, total unrecognized estimated compensation cost related to non-vested stock awards was approximately \$197.3 million, which is expected to be recognized over a weighted average period of approximately 3.3 years.

Bonuses. We have bonus programs covering select employees, including senior management. Awards are based on the position and performance of the employee and the achievement of pre-established financial, operating and strategic objectives. The amounts charged to expense for bonuses were \$363.6 million, \$286.5 million and \$248.1 million for the years ended December 31, 2018, 2017 and 2016, respectively.

401(k) Plan. Our CBRE 401(k) Plan (401(k) Plan) is a defined contribution savings plan that allows participant deferrals under Section 401(k) of the Internal Revenue Code (IRC). Most of our U.S. employees, other than qualified real estate agents having the status of independent contractors under section 3508 of the IRC of 1986, as amended, and non-plan electing unions are eligible to participate in the plan. The 401(k) Plan provides for participant contributions as well as a company match. A participant is allowed to contribute to the 401(k) Plan from 1% to 75% of his or her compensation, subject to limits imposed by applicable law. Effective January 1, 2007, all participants hired post January 1, 2007 vest in company match contributions 20% per year for each plan year they are employed. All participants hired before January 1, 2007 are immediately vested in company match contributions. For 2018, we contributed a 67% match on the first 6% of annual compensation for participants with an annual base salary of less than \$100,000 and we contributed a 50% match on the first 6% of annual compensation for participants with an annual base salary of \$100,000 or more (up to \$150,000 of compensation). For both 2017 and 2016, we contributed a 50% match on the first 6% of annual compensation (up to \$150,000 of compensation) deferred by each participant. In connection with the 401(k) Plan, we charged to expense \$46.3 million, \$38.8 million and \$44.3 million for the years ended December 31, 2018, 2017 and 2016, respectively.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Participants are entitled to invest up to 25% of their 401(k) account balance in shares of our common stock. As of December 31, 2018, approximately 1.3 million shares of our common stock were held as investments by participants in our 401(k) Plan.

Pension Plans. We have two contributory defined benefit pension plans in the United Kingdom (U.K.). The London-based firm of Hillier Parker May & Rowden, which we acquired in 1998, had a contributory defined benefit pension plan. A subsidiary of Insignia, which we acquired in connection with the Insignia Acquisition in 2003, also had a contributory defined benefit pension plan in the U.K. Our subsidiaries based in the U.K. maintain the plans to provide retirement benefits to existing and former employees participating in these plans. With respect to these plans, our historical policy has been to contribute annually to the plans, an amount to fund pension liabilities as actuarially determined and as required by applicable laws and regulations. Our contributions to these plans are invested by the plan trustee and, if these investments do not perform well in the future, we may be required to provide additional contributions to cover any pension underfunding. Effective July 1, 2007, we reached agreements with the active members of these plans to freeze future pension plan benefits. In return, the active members became eligible to enroll in a defined contribution plan. As of December 31, 2018 and 2017, the fair values of pension plan assets were \$274.4 million and \$333.5 million, respectively, and the fair values of projected benefit obligations in aggregate were \$387.4 million and \$455.6 million, respectively. As a result, the plans were underfunded by approximately \$113.0 million and \$122.1 million at December 31, 2018 and 2017, respectively, and were recorded as net liabilities included in other long term liabilities in the accompanying consolidated balance sheets. Items not yet recognized as a component of net periodic pension cost (benefit) were \$192.7 million and \$194.3 million at December 31, 2018 and 2017, respectively, and were included in accumulated other comprehensive loss in the accompanying consolidated balance sheets. Net periodic pension cost (benefit) was not material for the years ended December 31, 2018, 2017 and 2016.

14. Income Taxes

The components of income before provision for income taxes consisted of the following (dollars in thousands):

	Year Ended December 31,		
	2018	2017	2016
		(As Adjusted) (1)	(As Adjusted) (1)
Domestic	\$ 807,590	\$ 575,222	\$ 536,709
Foreign	571,416	596,111	345,361
	<u>\$ 1,379,006</u>	<u>\$ 1,171,333</u>	<u>\$ 882,070</u>

Our tax provision (benefit) consisted of the following (dollars in thousands):

	Year Ended December 31,		
	2018	2017	2016
		(As Adjusted) (1)	(As Adjusted) (1)
Federal:			
Current	\$ 166,024	\$ 275,475	\$ 172,380
Deferred	(7,667)	39,045	27,428
	158,357	314,520	199,808
State:			
Current	43,320	21,212	20,946
Deferred	(3,692)	5,573	375
	39,628	26,785	21,321
Foreign:			
Current	149,194	123,840	94,910
Deferred	(34,121)	2,612	(19,139)
	115,073	126,452	75,771
	<u>\$ 313,058</u>	<u>\$ 467,757</u>	<u>\$ 296,900</u>

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following is a reconciliation stated as a percentage of pre-tax income of the U.S. statutory federal income tax rate to our effective tax rate:

	Year Ended December 31,		
	2018	2017	2016
Federal statutory tax rate	21 %	35 %	35 %
State taxes, net of federal benefit	3	2	2
Non-deductible expenses	2	2	—
Tax Reform	1	12	—
Change in valuation allowance	(1)	(2)	2
Acquisition-related costs	(2)	—	—
Credits and exemptions	(2)	(3)	(2)
Foreign rate differential	—	(5)	(2)
Reserves for uncertain tax positions	—	(2)	—
Other	1	1	(1)
Effective tax rate	23 %	40 %	34 %

On December 22, 2017, the Tax Act was signed into law making significant changes to the IRC, including, but not limited to: (i) a U.S. corporate tax rate decrease from 35% to 21%, effective for tax years beginning after December 31, 2017; (ii) the transition of U.S. international taxation from a worldwide tax system to a territorial system; and (iii) a one-time transition tax (i.e. toll charge) on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017. In December 2017, the Securities and Exchange Commission (SEC) staff issued Staff Accounting Bulletin No. 118 (SAB 118), “*Income Tax Accounting Implications of the Tax Cuts and Jobs Act*” which allows us to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. In March 2018, the FASB issued ASU 2018-05, “*Income Taxes (Topic 740): Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118*” which added SEC guidance related to SAB 118.

The Tax Act requires us to pay U.S. income taxes on accumulated foreign subsidiary earnings not previously subject to U.S. income tax at a rate of 15.5% to the extent attributed to foreign cash and certain other net current assets, and 8% on the remainder. We recorded a provisional amount for our one-time transitional tax liability of \$158.0 million for the year ended December 31, 2017 representing our estimate of the U.S. federal and state tax impact of the transition tax, partially offset by a net income tax benefit of \$14.6 million related to the re-measurement of U.S. federal deferred tax assets and liabilities due to the re-measurement of net U.S. federal deferred tax assets and liabilities primarily related to a reduced U.S. federal statutory rate of 21% (after considering certain other measures of the Tax Act that affected our existing deferred tax assets).

During 2018, we continued to analyze the impact of the Tax Act and interpreted the additional guidance issued by the U.S. Treasury Department, the Internal Revenue Service, and other standard-setting bodies. Our provision for income taxes for 2018 included a net expense true-up of \$13.3 million associated with the Tax Act, including an additional \$5.3 million charge related to the transition tax on unremitted earnings of our foreign operations and an \$8.0 million reduction to the net income tax benefit related to the re-measurement of deferred taxes initially recorded in 2017, based upon our final analysis. As of December 31, 2018, we have completed our analysis and the final net expense associated with the Tax Act was \$156.7 million. We were able to apply existing foreign income tax credits to reduce the amount payable associated with Tax Act. The federal tax liability for the transition tax can be paid in annual interest-free installments over a period of eight years through 2025, which we have elected to do. The state tax liability for the transition tax was required to be paid in full in 2018. As of December 31, 2018, the second installment due in 2019 of \$7.4 million is included within income taxes payable and the remaining long-term taxes payable related to the Tax Act of \$91.7 million is included within non-current tax liabilities in the accompanying consolidated balance sheets.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The Tax Act also includes provisions for Global Intangible Low-Taxed Income (GILTI) wherein taxes on foreign earnings are imposed for more than a deemed return on tangible assets of foreign corporations. An accounting policy election allows to either: (i) account for GILTI as a component of tax expense in the period in which we are subject to the rules (the “period cost method”) or (ii) account for GILTI in our measurement of deferred taxes (the “deferred method”). Due to the complexity of the new GILTI tax rules, we did not elect a policy for the year ended December 31, 2017 as we continued to analyze our global income to determine whether we expected material tax liabilities resulting from the application of this provision and if so, whether and when to record related current and deferred income taxes and whether such amounts could be reasonably estimated. During 2018, as a result of completing our analysis of the Tax Act, we made an accounting policy election to account for GILTI using the period cost method.

Cumulative tax effects of temporary differences are shown below at December 31, 2018 and 2017 (dollars in thousands):

	December 31,	
	2018	2017
	(As Adjusted) (1)	
Asset (Liability)		
Bonus and deferred compensation	\$ 276,572	\$ 208,198
Net operating losses (NOLs) and state tax credits	275,574	283,353
Bad debt and other reserves	57,506	56,313
Pension obligation	22,950	22,148
Investments	5,211	5,573
Tax effect on revenue items related to new revenue recognition guidance	(38,510)	(55,306)
Property and equipment	(49,935)	(40,024)
Unconsolidated affiliates and partnerships	(64,448)	6,267
Capitalized costs and intangibles	(289,674)	(256,087)
All other	(2,457)	(1,441)
Net deferred tax assets before valuation allowance	192,789	228,994
Valuation allowance	(248,511)	(277,466)
Net deferred tax (liabilities) assets	\$ (55,722)	\$ (48,472)

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

As of December 31, 2018, we had U.S. federal NOLs, net of related reserves for uncertain tax positions of approximately \$72.7 million, translating to a deferred tax asset before valuation allowance of \$15.3 million, which will begin to expire in 2027. As of December 31, 2018, there were also deferred tax assets before valuation allowances of approximately \$3.5 million related to state NOLs as well as \$255.9 million related to foreign NOLs. The state and foreign NOLs both begin to expire in 2019, but the majority carry forward indefinitely. The utilization of NOLs may be subject to certain limitations under U.S. federal, state and foreign laws. We have recorded a full valuation allowance for NOLs that we believe will not be fully utilized.

We determined that as of December 31, 2018, \$248.5 million of deferred tax assets do not satisfy the realization criteria set forth in Topic 740. Accordingly, a valuation allowance has been recorded for this amount. If released, the entire amount would result in a benefit to continuing operations. During the year ended December 31, 2018, our valuation allowance decreased by approximately \$29.0 million. The decrease was driven by \$11.8 million associated with foreign currency translation and tax rate changes, the release of valuation allowances of \$11.6 million (due to current and forecasted earnings of our U.S. and foreign subsidiaries resulting in an expectation that the benefit for NOLs may be utilized before expiration), \$5.5 million related to adjustments to both the valuation allowance and related deferred tax asset for foreign NOLs, \$2.0 million related to foreign NOL utilization and \$1.8 million of U.S. NOL utilization. These decreases were partially offset by a \$3.7 million increase in valuation allowance related to current year increases in foreign NOLs. We believe it is more likely than not that future operations will generate sufficient taxable income to realize the benefit of the deferred tax assets recorded net of these valuation allowances.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Our foreign subsidiaries have accumulated \$2.1 billion of undistributed earnings for which we have not recorded a deferred tax liability. No additional income taxes have been provided for any remaining undistributed foreign earnings not subject to the transition tax, in connection with the enactment of the Tax Act, or any additional outside basis difference inherent in these entities, as these amounts continue to be indefinitely reinvested in foreign operations. While federal and state current income tax expense has been recognized as a result of the Tax Act, we have not provided any additional deferred taxes with respect to items such as foreign withholding taxes, state income tax or foreign exchange gain or loss that would be due when cash is actually repatriated to the U.S. because those foreign earnings are considered permanently reinvested in the business or may be remitted substantially free of any additional local taxes. The determination of the amount of the unrecognized deferred tax liability related to the undistributed earnings if eventually remitted is not practicable.

The total amount of gross unrecognized tax benefits was approximately \$95.0 million and \$35.8 million as of December 31, 2018 and 2017, respectively. The total amount of unrecognized tax benefits that would affect our effective tax rate, if recognized, is \$50.2 million (\$49.2 million, net of federal benefit received from state positions) and \$18.8 million (\$18.0 million, net of federal benefit received from state positions) as of December 31, 2018 and 2017, respectively.

A reconciliation of the beginning and ending amount of unrecognized tax benefits for the years ended December 31, 2018 and 2017 is as follows (dollars in thousands):

	Year Ended December 31,	
	2018	2017
Beginning balance, unrecognized tax benefits	\$ (35,826)	\$ (94,915)
Gross increases - tax positions in prior period	(49,412)	(1,400)
Gross decreases - tax positions in prior period	—	23,896
Gross increases - current-period tax positions	(18,861)	(4,142)
Decreases relating to settlements	4,619	34,259
Reductions as a result of lapse of statute of limitations	4,531	6,497
Foreign exchange movement	(13)	(21)
Ending balance, unrecognized tax benefits	<u>\$ (94,962)</u>	<u>\$ (35,826)</u>

During the year ended December 31, 2018, we released \$4.5 million of gross unrecognized tax benefits primarily due to expiration of the U.S. federal statute of limitations related to the 2014 tax year. As a result, we recognized \$3.1 million of income tax benefits related to decreases in tax positions and \$0.4 million of income tax benefits related to interest and penalties. We believe the amount of gross unrecognized tax benefits that will be settled during the next twelve months due to filing amended returns and settling ongoing exams cannot be reasonably estimated but will not be significant.

Our continuing practice is to recognize potential accrued interest and/or penalties related to income tax matters within income tax expense. During the years ended December 31, 2018, 2017 and 2016, we accrued an additional \$0.6 million, \$1.0 million and \$2.9 million, respectively, in interest and penalties associated with uncertain tax positions. As of December 31, 2018, and 2017, we have recognized a liability for interest and penalties of \$4.0 million (\$3.5 million, net of related federal benefit received from interest expense) and \$3.9 million (\$3.4 million, net of related federal benefit received from interest expense), respectively.

We conduct business globally and, as a result, one or more of our subsidiaries files income tax returns in the U.S. federal jurisdiction and in multiple state, local and foreign jurisdictions. We are no longer open to assessment by the U.S. Internal Revenue Service for years prior to 2015. With limited exception, our significant state and foreign tax jurisdictions are no longer subject to audit by the various tax authorities for tax years prior to 2011.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

15. Stockholders' Equity

Our board of directors is authorized, subject to any limitations imposed by law, without the approval of our stockholders, to issue a total of 25,000,000 shares of preferred stock, in one or more series, with each such series having rights and preferences including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, as our board of directors may determine.

On October 27, 2016, we announced that our board of directors had authorized the company to repurchase up to an aggregate of \$250.0 million of our Class A common stock over three years. During the year ended December 31, 2018, we spent \$161.0 million to repurchase 3,980,656 shares of our Class A common stock with an average price paid per share of \$40.43. No shares were repurchased during the years ended December 31, 2017 and 2016.

16. Income Per Share Information

The following is a calculation of income per share (dollars in thousands, except share data):

	Year Ended December 31,		
	2018	2017	2016
		(As Adjusted) (1)	(As Adjusted) (1)
Basic Income Per Share			
Net income attributable to CBRE Group, Inc. shareholders	\$ 1,063,219	\$ 697,109	\$ 573,079
Weighted average shares outstanding for basic income per share	339,321,056	337,658,017	335,414,831
Basic income per share attributable to CBRE Group, Inc. shareholders	\$ 3.13	\$ 2.06	\$ 1.71
Diluted Income Per Share			
Net income attributable to CBRE Group, Inc. shareholders	\$ 1,063,219	\$ 697,109	\$ 573,079
Weighted average shares outstanding for basic income per share	339,321,056	337,658,017	335,414,831
Dilutive effect of contingently issuable shares	3,801,293	3,121,987	2,982,431
Dilutive effect of stock options	392	3,552	27,301
Weighted average shares outstanding for diluted income per share	343,122,741	340,783,556	338,424,563
Diluted income per share attributable to CBRE Group, Inc. shareholders	\$ 3.10	\$ 2.05	\$ 1.69

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

For the years ended December 31, 2018, 2017 and 2016, 259,274, 621,805 and 1,833,941, respectively, of contingently issuable shares were excluded from the computation of diluted income per share because their inclusion would have had an anti-dilutive effect.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

17. Revenue from Contracts with Customers

Disaggregated Revenue

The following tables represent a disaggregation of revenue from contracts with customers for the years ended December 31, 2018, 2017 and 2016 by type of service and business segment (dollars in thousands):

	Year Ended December 31, 2018					
	Americas	EMEA	APAC	Global Investment Management	Development Services	Consolidated
Topic 606 Revenue:						
Occupier outsourcing	\$ 7,797,742	\$ 4,030,257	\$ 1,076,742	\$ —	\$ —	\$ 12,904,741
Leasing	2,423,248	526,372	421,255	—	4,683	3,375,558
Sales	1,189,368	428,810	300,312	—	650	1,919,140
Property management	709,213	244,370	281,882	—	8,666	1,244,131
Valuation	261,559	187,515	111,741	—	—	560,815
Commercial mortgage origination (1)	125,731	5,768	2,330	—	—	133,829
Investment management	—	—	—	434,405	—	434,405
Development services	—	—	—	—	86,320	86,320
Topic 606 Revenue	12,506,861	5,423,092	2,194,262	434,405	100,319	20,658,939
Out of Scope of Topic 606 Revenue:						
Commercial mortgage origination	402,607	—	—	—	—	402,607
Loan servicing	172,096	10,755	570	—	—	183,421
Other revenue	50,342	32,076	12,703	—	—	95,121
Total Out of Scope of Topic 606 Revenue	625,045	42,831	13,273	—	—	681,149
Total revenue	\$ 13,131,906	\$ 5,465,923	\$ 2,207,535	\$ 434,405	\$ 100,319	\$ 21,340,088

	Year Ended December 31, 2017 (As Adjusted) (2)					
	Americas	EMEA	APAC	Global Investment Management	Development Services	Consolidated
Topic 606 Revenue:						
Occupier outsourcing	\$ 7,089,660	\$ 3,101,518	\$ 954,396	\$ —	\$ —	\$ 11,145,574
Leasing	2,054,872	446,446	357,983	—	4,051	2,863,352
Sales	1,103,862	397,130	304,344	—	977	1,806,313
Property management	660,147	243,630	237,631	—	13,914	1,155,322
Valuation	245,179	165,082	117,377	—	—	527,638
Commercial mortgage origination (1)	104,565	5,447	2,119	—	—	112,131
Investment management	—	—	—	377,644	—	377,644
Development services	—	—	—	—	60,513	60,513
Topic 606 Revenue	11,258,285	4,359,253	1,973,850	377,644	79,455	18,048,487
Out of Scope of Topic 606 Revenue:						
Commercial mortgage origination	338,390	—	—	—	—	338,390
Loan servicing	146,460	10,989	—	—	—	157,449
Other revenue	48,242	26,583	9,636	—	—	84,461
Total Out of Scope of Topic 606 Revenue	533,092	37,572	9,636	—	—	580,300
Total revenue	\$ 11,791,377	\$ 4,396,825	\$ 1,983,486	\$ 377,644	\$ 79,455	\$ 18,628,787

(1) We earn fees for arranging financing for borrowers with third-party lender contacts. Such fees are in scope of Topic 606.

(2) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

	Year Ended December 31, 2016 (As Adjusted) (2)					
	Americas	EMEA	APAC	Global Investment Management	Development Services	Consolidated
Topic 606 Revenue:						
Occupier outsourcing	\$ 6,570,559	\$ 2,975,106	\$ 828,194	\$ —	\$ —	\$ 10,373,859
Leasing	1,924,361	411,005	312,184	—	4,436	2,651,986
Sales	1,103,452	334,398	261,320	—	1,333	1,700,503
Property management	621,452	221,904	203,176	—	9,502	1,056,034
Valuation	245,389	148,856	110,125	—	—	504,370
Commercial mortgage origination (1)	112,797	2,881	2,136	—	—	117,814
Investment management	—	—	—	369,800	—	369,800
Development services	—	—	—	—	55,638	55,638
Topic 606 Revenue	<u>10,578,010</u>	<u>4,094,150</u>	<u>1,717,135</u>	<u>369,800</u>	<u>70,909</u>	<u>16,830,004</u>
Out of Scope of Topic 606 Revenue:						
Commercial mortgage origination	330,352	—	—	—	—	330,352
Loan servicing	111,373	11,144	—	—	—	122,517
Other revenue	50,230	23,612	12,393	—	—	86,235
Total Out of Scope of Topic 606 Revenue	<u>491,955</u>	<u>34,756</u>	<u>12,393</u>	<u>—</u>	<u>—</u>	<u>539,104</u>
Total revenue	<u>\$ 11,069,965</u>	<u>\$ 4,128,906</u>	<u>\$ 1,729,528</u>	<u>\$ 369,800</u>	<u>\$ 70,909</u>	<u>\$ 17,369,108</u>

(1) We earn fees for arranging financing for borrowers with third-party lender contacts. Such fees are in scope of Topic 606.

(2) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

Contract Assets and Liabilities

We had contract assets totaling \$381.8 million (\$307.0 million of which was current) and \$330.9 million (\$273.1 million of which was current) as of December 31, 2018 and 2017, respectively. During the year ended December 31, 2018, our contract assets increased by \$50.9 million, primarily due to an increase in contract assets in our leasing business.

We had contract liabilities totaling \$92.5 million (\$82.2 million of which was current) and \$100.6 million (all of which was current) as of December 31, 2018 and 2017, respectively. During the year ended December 31, 2018, we recognized revenue of \$80.5 million that was included in the contract liability balance at December 31, 2017.

Contract Costs

Within our Occupier Outsourcing business line, we incur transition costs to fulfil contracts prior to services being rendered. We capitalized \$45.7 million, \$31.9 million and \$26.1 million, respectively, of transition costs during the years ended December 31, 2018, 2017 and 2016. We recorded amortization of transition costs of \$23.4 million, \$19.2 million and \$11.9 million, respectively, during the years ended December 31, 2018, 2017 and 2016. No impairment loss in relation to the costs capitalized was recorded during the years ended December 31, 2018, 2017 or 2016.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

18. Segments

We report our operations through the following segments: (1) Americas, (2) EMEA, (3) Asia Pacific, (4) Global Investment Management; and (5) Development Services.

Summarized financial information by segment is as follows (dollars in thousands):

	Year Ended December 31,		
	2018	2017	2016
		(As Adjusted) (1)	(As Adjusted) (1) (2)
Revenue			
Americas	\$ 13,131,906	\$ 11,791,377	\$ 11,069,965
EMEA	5,465,923	4,396,825	4,128,906
Asia Pacific	2,207,535	1,983,486	1,729,528
Global Investment Management	434,405	377,644	369,800
Development Services	100,319	79,455	70,909
Total revenue	<u>\$ 21,340,088</u>	<u>\$ 18,628,787</u>	<u>\$ 17,369,108</u>
Depreciation and Amortization			
Americas	\$ 327,556	\$ 289,338	\$ 254,118
EMEA	80,290	72,322	66,619
Asia Pacific	20,297	18,258	17,810
Global Investment Management	23,017	24,123	25,911
Development Services	828	2,073	2,469
Total depreciation and amortization	<u>\$ 451,988</u>	<u>\$ 406,114</u>	<u>\$ 366,927</u>
Equity Income from Unconsolidated Subsidiaries			
Americas	\$ 14,177	\$ 18,789	\$ 17,892
EMEA	1,523	1,553	1,817
Asia Pacific	433	397	223
Global Investment Management	6,131	7,923	7,243
Development Services	302,400	181,545	170,176
Total equity income from unconsolidated subsidiaries	<u>\$ 324,664</u>	<u>\$ 210,207</u>	<u>\$ 197,351</u>
Adjusted EBITDA			
Americas	\$ 1,111,014	\$ 1,011,643	\$ 950,573
EMEA	329,522	309,233	272,894
Asia Pacific	197,684	180,043	142,299
Global Investment Management	78,469	94,373	83,150
Development Services	188,479	121,482	113,431
Total Adjusted EBITDA	<u>\$ 1,905,168</u>	<u>\$ 1,716,774</u>	<u>\$ 1,562,347</u>

- (1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.
- (2) In 2017, we changed the presentation of the operating results of one of our emerging businesses among our regional services reporting segments. 2016 amounts were reclassified to conform with the 2017 presentation. This change had no impact on our consolidated results.

Adjusted EBITDA is the measure reported to the chief operating decision maker for purposes of making decisions about allocating resources to each segment and assessing performance of each segment. EBITDA represents earnings before net interest expense, write-off of financing costs on extinguished debt, income taxes, depreciation and amortization. Amounts shown for adjusted EBITDA further remove (from EBITDA) the impact of certain cash and non-cash items related to acquisitions, costs associated with our reorganization, including cost-savings initiatives, certain carried interest incentive compensation reversal to align with the timing of associated revenue and other non-recurring costs.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Adjusted EBITDA is calculated as follows (dollars in thousands):

	Year Ended December 31,		
	2018	2017	2016
Net income attributable to CBRE Group, Inc.	\$ 1,063,219	\$ 697,109	\$ 573,079
Add:		(As Adjusted) (1)	(As Adjusted) (1)
Depreciation and amortization	451,988	406,114	366,927
Interest expense	107,270	136,814	144,851
Write-off of financing costs on extinguished debt	27,982	—	—
Provision for income taxes	313,058	467,757	296,900
Less:			
Interest income	8,585	9,853	8,051
EBITDA	1,954,932	1,697,941	1,373,706
Adjustments:			
Costs associated with our reorganization, including cost-savings initiatives (2)	37,925	—	—
Integration and other costs related to acquisitions	9,124	27,351	125,743
Costs incurred in connection with litigation settlement	8,868	—	—
Carried interest incentive compensation reversal to align with the timing of associated revenue	(5,261)	(8,518)	(15,558)
One-time gain associated with remeasuring an investment in an unconsolidated subsidiary to fair value as of the date the remaining controlling interest was acquired	(100,420)	—	—
Cost-elimination expenses (3)	—	—	78,456
Adjusted EBITDA	\$ 1,905,168	\$ 1,716,774	\$ 1,562,347

- (1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.
- (2) Primarily represents severance costs related to headcount reductions in connection with our reorganization announced in the third quarter of 2018 that became effective January 1, 2019.
- (3) Represents cost-elimination expenses relating to a program initiated in the fourth quarter of 2015 and completed in the third quarter of 2016 (our cost-elimination project) to reduce the company's global cost structure after several years of significant revenue and related cost growth. Cost-elimination expenses incurred during the year ended December 31, 2016 consisted of \$73.6 million of severance costs related to headcount reductions in connection with the program and \$4.9 million of third-party contract termination costs. The total amount for each period does not have a cash impact.

	Year Ended December 31,		
	2018	2017	2016
Capital Expenditures			
Americas	\$ 131,055	\$ 127,135	\$ 134,046
EMEA	63,947	28,716	35,452
Asia Pacific	17,122	19,360	19,179
Global Investment Management	15,348	2,776	2,273
Development Services	331	55	255
Total capital expenditures	\$ 227,803	\$ 178,042	\$ 191,205

	December 31,	
	2018	2017
Identifiable Assets		(As Adjusted) (1)
Americas	\$ 7,432,532	\$ 5,808,332
EMEA	3,168,050	3,013,586
Asia Pacific	978,331	894,066
Global Investment Management	1,018,999	1,075,691
Development Services	166,864	176,971
Corporate	692,017	749,750
Total identifiable assets	\$ 13,456,793	\$ 11,718,396

- (1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Identifiable assets by segment are those assets used in our operations in each segment. Corporate identifiable assets primarily include cash and cash equivalents available for general corporate use and net deferred tax assets.

	December 31,	
	2018	2017
Investments in Unconsolidated Subsidiaries		
Americas	\$ 41,446	\$ 39,105
EMEA	864	852
Asia Pacific	6,845	6,581
Global Investment Management	77,926	83,430
Development Services	89,093	108,033
Total investments in unconsolidated subsidiaries	<u>\$ 216,174</u>	<u>\$ 238,001</u>

Geographic Information

Revenue in the table below is allocated based upon the country in which services are performed (dollars in thousands):

	Year Ended December 31,		
	2018	2017	2016
		(As Adjusted) (1)	(As Adjusted) (1)
Revenue			
United States	\$ 12,264,188	\$ 10,954,608	\$ 10,434,782
United Kingdom	2,586,890	2,242,973	2,150,428
All other countries	6,489,010	5,431,206	4,783,898
Total revenue	<u>\$ 21,340,088</u>	<u>\$ 18,628,787</u>	<u>\$ 17,369,108</u>

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

The long-lived assets in the table below are comprised of net property and equipment (dollars in thousands).

	December 31,	
	2018	2017
Property and Equipment, Net		
United States	\$ 512,110	\$ 432,102
United Kingdom	71,119	61,335
All other countries	138,463	124,302
Total property and equipment, net	<u>\$ 721,692</u>	<u>\$ 617,739</u>

On August 17, 2018, we announced a new organization structure that became effective on January 1, 2019. Under the new structure, we will organize our operations around, and publicly report our financial results on, three global business segments: (1) Advisory Services, (2) Global Workplace Solutions and (3) Real Estate Investments. For 2018, we are reporting our financial results under our business segments as they existed throughout the year.

19. Related Party Transactions

The accompanying consolidated balance sheets include loans to related parties, primarily employees other than our executive officers, of \$350.1 million and \$291.2 million as of December 31, 2018 and 2017, respectively. The majority of these loans represent sign-on and retention bonuses issued or assumed in connection with acquisitions and prepaid commissions as well as prepaid retention and recruitment awards issued to employees. These loans are at varying principal amounts, bear interest at rates up to 2.89% per annum and mature on various dates through 2028.

20. Guarantor and Nonguarantor Financial Statements

The following condensed consolidating financial information includes condensed consolidating balance sheets as of December 31, 2018 and 2017, condensed consolidating statements of operations, condensed consolidating statements of comprehensive income (loss) and condensed consolidating statements of cash flows for the years ended December 31, 2018, 2017 and 2016 of:

- CBRE Group, Inc., as the parent; CBRE Services, as the subsidiary issuer; the guarantor subsidiaries; the nonguarantor subsidiaries;
- Elimination entries necessary to consolidate CBRE Group, Inc., as the parent, with CBRE Services and its guarantor and nonguarantor subsidiaries; and
- CBRE Group, Inc., on a consolidated basis.

Investments in consolidated subsidiaries are presented using the equity method of accounting. The principal elimination entries eliminate investments in consolidated subsidiaries and intercompany balances and transactions.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Condensed Consolidating Balance Sheet

	As of December 31, 2018					
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Eliminations	Consolidated Total
ASSETS						
Current Assets:						
Cash and cash equivalents	\$ 7	\$ 34,063	\$ 261,181	\$ 481,968	\$ —	\$ 777,219
Restricted cash	—	—	13,767	72,958	—	86,725
Receivables, net	—	5	1,340,120	2,328,466	—	3,668,591
Warehouse receivables (1)	—	—	664,095	678,373	—	1,342,468
Contract assets	—	—	289,214	17,806	—	307,020
Prepaid expenses	—	—	122,305	132,587	—	254,892
Income taxes receivable	6,099	—	18,992	52,692	(6,099)	71,684
Other current assets	—	—	56,853	188,758	—	245,611
Total Current Assets	6,106	34,068	2,766,527	3,953,608	(6,099)	6,754,210
Property and equipment, net	—	—	512,110	209,582	—	721,692
Goodwill	—	—	2,224,909	1,427,400	—	3,652,309
Other intangible assets, net	—	—	835,270	606,038	—	1,441,308
Investments in unconsolidated subsidiaries	—	—	170,698	45,476	—	216,174
Investments in consolidated subsidiaries	6,759,815	5,595,831	3,228,512	—	(15,584,158)	—
Intercompany loan receivable	—	2,440,775	700,000	711,244	(3,852,019)	—
Deferred tax assets, net	—	—	2,666	51,755	(2,718)	51,703
Other assets, net	—	18,257	483,790	117,350	—	619,397
Total Assets	\$ 6,765,921	\$ 8,088,931	\$ 10,924,482	\$ 7,122,453	\$ (19,444,994)	\$ 13,456,793
LIABILITIES AND EQUITY						
Current Liabilities:						
Accounts payable and accrued expenses	\$ 40	\$ 17,450	\$ 655,582	\$ 1,246,755	\$ —	\$ 1,919,827
Accrued bonus and profit sharing	—	—	685,521	503,874	—	1,189,395
Compensation and employee benefits payable	—	—	662,196	458,983	—	1,121,179
Contract liabilities	—	—	41,045	41,182	—	82,227
Income taxes payable	—	720	6,417	67,062	(6,099)	68,100
Short-term borrowings:						
Warehouse lines of credit (which fund loans that U.S. Government Sponsored Enterprises have committed to purchase) (1)	—	—	657,731	671,030	—	1,328,761
Total short-term borrowings	—	—	657,731	671,030	—	1,328,761
Current maturities of long-term debt	—	—	39	3,107	—	3,146
Other current liabilities	—	1,070	70,202	19,473	—	90,745
Total Current Liabilities	40	19,240	2,778,733	3,011,466	(6,099)	5,803,380
Long-Term Debt, net:						
Long-term debt, net	—	1,309,876	18	457,366	—	1,767,260
Intercompany loan payable	1,827,084	—	2,024,935	—	(3,852,019)	—
Total Long-Term Debt, net	1,827,084	1,309,876	2,024,953	457,366	(3,852,019)	1,767,260
Non-current tax liabilities	—	—	164,857	7,769	—	172,626
Deferred tax liabilities, net	—	—	—	110,143	(2,718)	107,425
Other liabilities	—	—	360,108	236,092	—	596,200
Total Liabilities	1,827,124	1,329,116	5,328,651	3,822,836	(3,860,836)	8,446,891
Commitments and contingencies	—	—	—	—	—	—
Equity:						
CBRE Group, Inc. Stockholders' Equity	4,938,797	6,759,815	5,595,831	3,228,512	(15,584,158)	4,938,797
Non-controlling interests	—	—	—	71,105	—	71,105
Total Equity	4,938,797	6,759,815	5,595,831	3,299,617	(15,584,158)	5,009,902
Total Liabilities and Equity	\$ 6,765,921	\$ 8,088,931	\$ 10,924,482	\$ 7,122,453	\$ (19,444,994)	\$ 13,456,793

(1) Although CBRE Capital Markets is included among our domestic subsidiaries that jointly and severally guarantee our 4.875% senior notes, 5.25% senior notes and our 2017 Credit Agreement, a substantial majority of warehouse receivables funded under JP Morgan, TD Bank, Fannie Mae ASAP, Capital One and BofA lines of credit are pledged to JP Morgan, TD Bank, Fannie Mae, Capital One and BofA, and accordingly, are not included as collateral for these notes or our other outstanding debt.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Condensed Consolidating Balance Sheet

	As of December 31, 2017 (As Adjusted) (1)					
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Eliminations	Consolidated Total
ASSETS						
Current Assets:						
Cash and cash equivalents	\$ 7	\$ 15,604	\$ 112,048	\$ 624,115	\$ —	\$ 751,774
Restricted cash	—	—	2,095	70,950	—	73,045
Receivables, net	—	—	990,923	2,121,366	—	3,112,289
Warehouse receivables (2)	—	—	479,628	448,410	—	928,038
Contract assets	—	—	263,756	9,297	—	273,053
Prepaid expenses	—	—	81,106	134,230	—	215,336
Income taxes receivable	2,162	—	—	49,628	(2,162)	49,628
Other current assets	—	—	50,556	176,865	—	227,421
Total Current Assets	2,169	15,604	1,980,112	3,634,861	(2,162)	5,630,584
Property and equipment, net	—	—	431,755	185,984	—	617,739
Goodwill	—	—	1,774,529	1,480,211	—	3,254,740
Other intangible assets, net	—	—	751,930	647,182	—	1,399,112
Investments in unconsolidated subsidiaries	—	—	197,395	40,606	—	238,001
Investments in consolidated subsidiaries	5,551,781	4,930,109	3,066,303	—	(13,548,193)	—
Intercompany loan receivable	—	2,621,330	700,000	—	(3,321,330)	—
Deferred tax assets, net	—	—	5,300	98,746	(5,300)	98,746
Other assets, net	—	22,810	348,191	108,473	—	479,474
Total Assets	\$ 5,553,950	\$ 7,589,853	\$ 9,255,515	\$ 6,196,063	\$ (16,876,985)	\$ 11,718,396
LIABILITIES AND EQUITY						
Current Liabilities:						
Accounts payable and accrued expenses	\$ —	\$ 29,708	\$ 404,367	\$ 1,139,597	\$ —	\$ 1,573,672
Accrued bonus and profit sharing	—	—	590,534	487,811	—	1,078,345
Compensation and employee benefits payable	—	626	479,306	424,502	—	904,434
Contract liabilities	—	—	42,994	57,621	—	100,615
Income taxes payable	—	3,314	13,704	55,778	(2,162)	70,634
Short-term borrowings:						
Warehouse lines of credit (which fund loans that U.S. Government Sponsored Enterprises have committed to purchase) (2)	—	—	474,195	436,571	—	910,766
Other	—	—	16	—	—	16
Total short-term borrowings	—	—	474,211	436,571	—	910,782
Current maturities of long-term debt	—	—	—	8	—	8
Other current liabilities	—	55	56,260	18,139	—	74,454
Total Current Liabilities	—	33,703	2,061,376	2,620,027	(2,162)	4,712,944
Long-Term Debt, net:						
Long-term debt, net	—	1,999,603	—	—	—	1,999,603
Intercompany loan payable	1,439,454	—	1,798,550	83,326	(3,321,330)	—
Total Long-Term Debt, net	1,439,454	1,999,603	1,798,550	83,326	(3,321,330)	1,999,603
Non-current tax liabilities	—	—	135,396	5,396	—	140,792
Deferred tax liabilities, net	—	—	29,785	122,733	(5,300)	147,218
Other liabilities	—	4,766	300,299	238,160	—	543,225
Total Liabilities	1,439,454	2,038,072	4,325,406	3,069,642	(3,328,792)	7,543,782
Commitments and contingencies						
Equity:						
CBRE Group, Inc. Stockholders' Equity	4,114,496	5,551,781	4,930,109	3,066,303	(13,548,193)	4,114,496
Non-controlling interests	—	—	—	60,118	—	60,118
Total Equity	4,114,496	5,551,781	4,930,109	3,126,421	(13,548,193)	4,174,614
Total Liabilities and Equity	\$ 5,553,950	\$ 7,589,853	\$ 9,255,515	\$ 6,196,063	\$ (16,876,985)	\$ 11,718,396

- (1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.
- (2) Although CBRE Capital Markets is included among our domestic subsidiaries that jointly and severally guarantee our 5.00% senior notes, 4.875% senior notes, 5.25% senior notes and our 2015 Credit Agreement, a substantial majority of warehouse receivables funded under BofA, Fannie Mae ASAP, JP Morgan, Capital One and TD Bank lines of credit are pledged to BofA, Fannie Mae, JP Morgan, Capital One and TD Bank, and accordingly, are not included as collateral for these notes or our other outstanding debt.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Condensed Consolidating Statement of Operations

	For the Year Ended December 31, 2018					
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Eliminations	Consolidated Total
Revenue	\$ —	\$ —	\$ 11,998,469	\$ 9,341,619	\$ —	\$ 21,340,088
Costs and expenses:						
Cost of services	—	—	9,513,947	6,935,265	—	16,449,212
Operating, administrative and other	24,523	1,156	1,773,860	1,566,234	—	3,365,773
Depreciation and amortization	—	—	271,378	180,610	—	451,988
Total costs and expenses	24,523	1,156	11,559,185	8,682,109	—	20,266,973
Gain on disposition of real estate	—	—	7,705	7,169	—	14,874
Operating (loss) income	(24,523)	(1,156)	446,989	666,679	—	1,087,989
Equity income from unconsolidated subsidiaries	—	—	323,080	1,584	—	324,664
Other income (loss)	—	1	103,657	(10,638)	—	93,020
Interest income	—	134,259	6,805	214,780	(347,259)	8,585
Interest expense	—	102,228	328,638	23,663	(347,259)	107,270
Write-off of financing costs on extinguished debt	—	27,982	—	—	—	27,982
Royalty and management service (income) expense	—	—	(111,883)	111,883	—	—
Income from consolidated subsidiaries	1,081,643	1,079,469	579,523	—	(2,740,635)	—
Income before (benefit of) provision for income taxes	1,057,120	1,082,363	1,243,299	736,859	(2,740,635)	1,379,006
(Benefit of) provision for income taxes	(6,099)	720	163,830	154,607	—	313,058
Net income	1,063,219	1,081,643	1,079,469	582,252	(2,740,635)	1,065,948
Less: Net income attributable to non-controlling interests	—	—	—	2,729	—	2,729
Net income attributable to CBRE Group, Inc.	<u>\$ 1,063,219</u>	<u>\$ 1,081,643</u>	<u>\$ 1,079,469</u>	<u>\$ 579,523</u>	<u>\$ (2,740,635)</u>	<u>\$ 1,063,219</u>

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Condensed Consolidating Statement of Operations

	For the Year Ended December 31, 2017 (As Adjusted) (1)					
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Eliminations	Consolidated Total
Revenue	\$ —	\$ —	\$ 10,702,005	\$ 7,926,782	\$ —	\$ 18,628,787
Costs and expenses:						
Cost of services	—	—	8,517,114	5,787,985	—	14,305,099
Operating, administrative and other	5,661	1,972	1,485,605	1,365,482	—	2,858,720
Depreciation and amortization	—	—	239,863	166,251	—	406,114
Total costs and expenses	5,661	1,972	10,242,582	7,319,718	—	17,569,933
Gain on disposition of real estate	—	—	6,037	13,791	—	19,828
Operating (loss) income	(5,661)	(1,972)	465,460	620,855	—	1,078,682
Equity income from unconsolidated subsidiaries	—	—	206,655	3,552	—	210,207
Other income	—	1	22	9,382	—	9,405
Interest income	—	143,425	5,453	4,400	(143,425)	9,853
Interest expense	—	132,777	115,947	31,515	(143,425)	136,814
Royalty and management service expense (income)	—	—	15,950	(15,950)	—	—
Income from consolidated subsidiaries	700,608	695,245	461,769	—	(1,857,622)	—
Income before (benefit of) provision for income taxes	694,947	703,922	1,007,462	622,624	(1,857,622)	1,171,333
(Benefit of) provision for income taxes	(2,162)	3,314	312,217	154,388	—	467,757
Net income	697,109	700,608	695,245	468,236	(1,857,622)	703,576
Less: Net income attributable to non-controlling interests	—	—	—	6,467	—	6,467
Net income attributable to CBRE Group, Inc.	\$ 697,109	\$ 700,608	\$ 695,245	\$ 461,769	\$ (1,857,622)	\$ 697,109

- (1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Condensed Consolidating Statement of Operations

	For the Year Ended December 31, 2016 (As Adjusted) (1)					
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Eliminations	Consolidated Total
Revenue	\$ —	\$ —	\$ 10,169,361	\$ 7,199,747	\$ —	\$ 17,369,108
Costs and expenses:						
Cost of services	—	—	8,133,496	5,287,415	—	13,420,911
Operating, administrative and other	5,003	(8,231)	1,454,435	1,329,094	—	2,780,301
Depreciation and amortization	—	—	225,552	141,375	—	366,927
Total costs and expenses	5,003	(8,231)	9,813,483	6,757,884	—	16,568,139
Gain on disposition of real estate	—	—	3,669	12,193	—	15,862
Operating (loss) income	(5,003)	8,231	359,547	454,056	—	816,831
Equity income from unconsolidated subsidiaries	—	—	192,811	4,540	—	197,351
Other income (loss)	—	1	(89)	4,776	—	4,688
Interest income	—	131,132	50,272	5,146	(178,499)	8,051
Interest expense	—	184,738	97,815	40,797	(178,499)	144,851
Royalty and management service (income) expense	—	—	(39,182)	39,182	—	—
Income from consolidated subsidiaries	576,167	604,177	242,732	—	(1,423,076)	—
Income before (benefit of) provision for income taxes	571,164	558,803	786,640	388,539	(1,423,076)	882,070
(Benefit of) provision for income taxes	(1,915)	(17,364)	182,463	133,716	—	296,900
Net income	573,079	576,167	604,177	254,823	(1,423,076)	585,170
Less: Net income attributable to non-controlling interests	—	—	—	12,091	—	12,091
Net income attributable to CBRE Group, Inc.	\$ 573,079	\$ 576,167	\$ 604,177	\$ 242,732	\$ (1,423,076)	\$ 573,079

- (1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

Condensed Consolidating Statement of Comprehensive Income

	For the Year Ended December 31, 2018					
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Eliminations	Consolidated Total
Net income	\$ 1,063,219	\$ 1,081,643	\$ 1,079,469	\$ 582,252	\$ (2,740,635)	\$ 1,065,948
Other comprehensive income (loss):						
Foreign currency translation loss	—	—	—	(161,384)	—	(161,384)
Adoption of Accounting Standards Update 2016-01, net	—	—	(3,964)	—	—	(3,964)
Amounts reclassified from accumulated other comprehensive loss to interest expense, net	—	2,439	—	—	—	2,439
Unrealized gains on interest rate swaps, net	—	708	—	—	—	708
Unrealized holding losses on available for sale debt securities, net	—	—	(971)	—	—	(971)
Pension liability adjustments, net	—	—	—	1,315	—	1,315
Other, net	—	—	7	(5,077)	—	(5,070)
Total other comprehensive income (loss)	—	3,147	(4,928)	(165,146)	—	(166,927)
Comprehensive income	1,063,219	1,084,790	1,074,541	417,106	(2,740,635)	899,021
Less: Comprehensive income attributable to non-controlling interests	—	—	—	1,657	—	1,657
Comprehensive income attributable to CBRE Group, Inc.	<u>\$ 1,063,219</u>	<u>\$ 1,084,790</u>	<u>\$ 1,074,541</u>	<u>\$ 415,449</u>	<u>\$ (2,740,635)</u>	<u>\$ 897,364</u>

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Condensed Consolidating Statement of Comprehensive Income

	For the Year Ended December 31, 2017 (As Adjusted) (1)					
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Eliminations	Consolidated Total
Net income	\$ 697,109	\$ 700,608	\$ 695,245	\$ 468,236	\$ (1,857,622)	\$ 703,576
Other comprehensive (loss) income:						
Foreign currency translation gain	—	—	—	218,001	—	218,001
Amounts reclassified from accumulated other comprehensive loss to interest expense, net	—	4,964	—	—	—	4,964
Unrealized gains on interest rate swaps, net	—	585	—	—	—	585
Unrealized holding gains on available for sale debt securities, net	—	—	2,557	180	—	2,737
Pension liability adjustments, net	—	—	—	12,701	—	12,701
Other, net	(2)	—	(21)	387	—	364
Total other comprehensive (loss) income	(2)	5,549	2,536	231,269	—	239,352
Comprehensive income	697,107	706,157	697,781	699,505	(1,857,622)	942,928
Less: Comprehensive income attributable to non-controlling interests	—	—	—	6,879	—	6,879
Comprehensive income attributable to CBRE Group, Inc.	<u>\$ 697,107</u>	<u>\$ 706,157</u>	<u>\$ 697,781</u>	<u>\$ 692,626</u>	<u>\$ (1,857,622)</u>	<u>\$ 936,049</u>

- (1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Condensed Consolidating Statement of Comprehensive Income (Loss)

	For the Year Ended December 31, 2016 (As Adjusted) (1)					
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Eliminations	Consolidated Total
Net income	\$ 573,079	\$ 576,167	\$ 604,177	\$ 254,823	\$ (1,423,076)	\$ 585,170
Other comprehensive income (loss):						
Foreign currency translation loss	—	—	—	(235,614)	—	(235,614)
Amounts reclassified from accumulated other comprehensive loss to interest expense, net	—	6,839	—	—	—	6,839
Unrealized losses on interest rate swaps, net	—	(1,431)	—	—	—	(1,431)
Unrealized holding gains on available for sale debt securities, net	—	—	180	204	—	384
Pension liability adjustments, net	—	—	—	(63,749)	—	(63,749)
Other, net	—	—	(759)	(11,332)	—	(12,091)
Total other comprehensive income (loss)	—	5,408	(579)	(310,491)	—	(305,662)
Comprehensive income (loss)	573,079	581,575	603,598	(55,668)	(1,423,076)	279,508
Less: Comprehensive income attributable to non-controlling interests	—	—	—	12,108	—	12,108
Comprehensive income (loss) attributable to CBRE Group, Inc.	<u>\$ 573,079</u>	<u>\$ 581,575</u>	<u>\$ 603,598</u>	<u>\$ (67,776)</u>	<u>\$ (1,423,076)</u>	<u>\$ 267,400</u>

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Condensed Consolidating Statement of Cash Flow

	For the Year Ended December 31, 2018				
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Consolidated Total
CASH FLOWS PROVIDED BY OPERATING ACTIVITIES:	\$ 105,850	\$ 21,834	\$ 429,540	\$ 574,025	\$ 1,131,249
CASH FLOWS FROM INVESTING ACTIVITIES:					
Capital expenditures	—	—	(140,670)	(87,133)	(227,803)
Acquisition of businesses, including net assets acquired, intangibles and goodwill, net of cash acquired	—	—	(305,315)	(17,258)	(322,573)
Contributions to unconsolidated subsidiaries	—	—	(51,046)	(11,756)	(62,802)
Distributions from unconsolidated subsidiaries	—	—	57,269	4,440	61,709
Net proceeds from disposition of real estate held for investment	—	—	—	14,174	14,174
Purchase of equity securities	—	—	(21,402)	—	(21,402)
Proceeds from sale of equity securities	—	—	16,314	—	16,314
Purchase of available for sale debt securities	—	—	(23,360)	—	(23,360)
Proceeds from the sale of available for sale debt securities	—	—	5,792	—	5,792
Other investing activities, net	—	—	2,793	(3,526)	(733)
Net cash used in investing activities	—	—	(459,625)	(101,059)	(560,684)
CASH FLOWS FROM FINANCING ACTIVITIES:					
Proceeds from senior term loans	—	550,000	—	452,745	1,002,745
Repayment of senior term loans	—	(450,000)	—	—	(450,000)
Proceeds from revolving credit facility	—	3,258,000	—	—	3,258,000
Repayment of revolving credit facility	—	(3,258,000)	—	—	(3,258,000)
Repayment of 5.00% senior notes (including premium)	—	(820,000)	—	—	(820,000)
Proceeds from notes payable on real estate	—	—	—	7,599	7,599
Repayment of notes payable on real estate	—	—	—	(19,058)	(19,058)
Repayment of debt assumed in acquisition of FacilitySource	—	—	(26,295)	—	(26,295)
Repurchase of common stock	(161,034)	—	—	—	(161,034)
Acquisition of businesses (cash paid for acquisitions more than three months after purchase date)	—	—	(16,774)	(1,886)	(18,660)
Units repurchased for payment of taxes on equity awards	(29,386)	—	—	—	(29,386)
Non-controlling interest contributions	—	—	—	25,355	25,355
Non-controlling interest distributions	—	—	—	(13,413)	(13,413)
Payment of financing costs	—	(212)	—	(1,876)	(2,088)
Decrease (increase) in intercompany receivables, net	84,213	716,837	233,975	(1,035,025)	—
Other financing activities, net	357	—	(16)	(2,706)	(2,365)
Net cash (used in) provided by financing activities	(105,850)	(3,375)	190,890	(588,265)	(506,600)
Effect of currency exchange rate changes on cash and cash equivalents and restricted cash	—	—	—	(24,840)	(24,840)
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS AND RESTRICTED CASH	—	18,459	160,805	(140,139)	39,125
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT BEGINNING OF PERIOD	7	15,604	114,143	695,065	824,819
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT END OF PERIOD	\$ 7	\$ 34,063	\$ 274,948	\$ 554,926	\$ 863,944
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:					
Cash paid during the period for:					
Interest	\$ —	\$ 102,491	\$ —	\$ 1,674	\$ 104,165
Income taxes, net	\$ —	\$ —	\$ 198,930	\$ 176,919	\$ 375,849

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Condensed Consolidating Statement of Cash Flows

	For the Year Ended December 31, 2017 (As Adjusted) (1)				
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Consolidated Total
CASH FLOWS PROVIDED BY OPERATING ACTIVITIES:	\$ 89,341	\$ 37,990	\$ 424,787	\$ 342,293	\$ 894,411
CASH FLOWS FROM INVESTING ACTIVITIES:					
Capital expenditures	—	—	(121,347)	(56,695)	(178,042)
Acquisition of businesses, including net assets acquired, intangibles and goodwill, net of cash acquired	—	—	(87,248)	(31,179)	(118,427)
Contributions to unconsolidated subsidiaries	—	—	(63,119)	(5,581)	(68,700)
Distributions from unconsolidated subsidiaries	—	—	52,896	10,768	63,664
Purchase of equity securities	—	—	(15,584)	—	(15,584)
Proceeds from sale of equity securities	—	—	15,587	—	15,587
Purchase of available for sale debt securities	—	—	(19,280)	—	(19,280)
Proceeds from the sale of available for sale debt securities	—	—	15,790	—	15,790
Other investing activities, net	—	—	1,968	424	2,392
Net cash used in investing activities	—	—	(220,337)	(82,263)	(302,600)
CASH FLOWS FROM FINANCING ACTIVITIES:					
Proceeds from senior term loans	—	200,000	—	—	200,000
Repayment of senior term loans	—	(751,876)	—	—	(751,876)
Proceeds from revolving credit facility	—	1,521,000	—	—	1,521,000
Repayment of revolving credit facility	—	(1,521,000)	—	—	(1,521,000)
Proceeds from notes payable on real estate	—	—	—	4,333	4,333
Repayment of notes payable on real estate	—	—	—	(12,556)	(12,556)
Acquisition of businesses (cash paid for acquisitions more than three months after purchase date)	—	—	(19,854)	(4,152)	(24,006)
Units repurchased for payment of taxes on equity awards	(29,549)	—	—	—	(29,549)
Non-controlling interest contributions	—	—	—	5,301	5,301
Non-controlling interest distributions	—	—	—	(8,715)	(8,715)
Payment of financing costs	—	(7,978)	—	(21)	(7,999)
(Increase) decrease in intercompany receivables, net	(60,271)	520,579	(338,396)	(121,912)	—
Other financing activities, net	479	—	(3,145)	(9)	(2,675)
Net cash used in financing activities	(89,341)	(39,275)	(361,395)	(137,731)	(627,742)
Effect of currency exchange rate changes on cash and cash equivalents and restricted cash	—	—	—	29,338	29,338
NET (DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS AND RESTRICTED CASH	—	(1,285)	(156,945)	151,637	(6,593)
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT BEGINNING OF PERIOD	7	16,889	271,088	543,428	831,412
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT END OF PERIOD	\$ 7	\$ 15,604	\$ 114,143	\$ 695,065	\$ 824,819
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:					
Cash paid during the period for:					
Interest	\$ —	\$ 117,072	\$ —	\$ 92	\$ 117,164
Income taxes, net	\$ —	\$ —	\$ 198,520	\$ 158,477	\$ 356,997

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Condensed Consolidating Statement of Cash Flows

	For the Year Ended December 31, 2016 (As Adjusted) (1)				
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Consolidated Total
CASH FLOWS PROVIDED BY (USED IN) OPERATING ACTIVITIES:	\$ 84,393	\$ (23,643)	\$ 296,501	\$ 259,734	\$ 616,985
CASH FLOWS FROM INVESTING ACTIVITIES:					
Capital expenditures	—	—	(115,049)	(76,156)	(191,205)
Acquisition of businesses, including net assets acquired, intangibles and goodwill, net of cash acquired	—	—	(2,191)	(18,886)	(21,077)
Contributions to unconsolidated subsidiaries	—	—	(47,192)	(19,624)	(66,816)
Distributions from unconsolidated subsidiaries	—	—	39,340	7,435	46,775
Net proceeds from disposition of real estate held for investment	—	—	—	44,326	44,326
Purchase of equity securities	—	—	(15,506)	—	(15,506)
Proceeds from sale of equity securities	—	—	16,954	—	16,954
Purchase of available for sale debt securities	—	—	(22,155)	—	(22,155)
Proceeds from the sale of available for sale debt securities	—	—	18,097	—	18,097
Other investing activities, net	—	—	19,178	20,905	40,083
Net cash used in investing activities	—	—	(108,524)	(42,000)	(150,524)
CASH FLOWS FROM FINANCING ACTIVITIES:					
Repayment of senior term loans	—	(136,250)	—	—	(136,250)
Proceeds from revolving credit facility	—	2,909,000	—	—	2,909,000
Repayment of revolving credit facility	—	(2,909,000)	—	—	(2,909,000)
Proceeds from notes payable on real estate	—	—	—	25,001	25,001
Repayment of notes payable on real estate	—	—	—	(38,046)	(38,046)
Acquisition of businesses (cash paid for acquisitions more than three months after purchase date)	—	—	(1,125)	(19,909)	(21,034)
Units repurchased for payment of taxes on equity awards	(27,426)	—	—	—	(27,426)
Non-controlling interest contributions	—	—	—	2,272	2,272
Non-controlling interest distributions	—	—	—	(19,133)	(19,133)
Payment of financing costs	—	(5,459)	—	(159)	(5,618)
(Increase) decrease in intercompany receivables, net	(57,880)	173,762	(68,422)	(47,460)	—
Other financing activities, net	915	—	(1,173)	(185)	(443)
Net cash (used in) provided by financing activities	(84,391)	32,053	(70,720)	(97,619)	(220,677)
Effect of currency exchange rate changes on cash and cash equivalents and restricted cash	—	—	—	(27,539)	(27,539)
NET INCREASE IN CASH AND CASH EQUIVALENTS AND RESTRICTED CASH	2	8,410	117,257	92,576	218,245
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT BEGINNING OF PERIOD	5	8,479	153,831	450,852	613,167
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT END OF PERIOD	\$ 7	\$ 16,889	\$ 271,088	\$ 543,428	\$ 831,412
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:					
Cash paid during the period for:					
Interest	\$ —	\$ 122,605	\$ —	\$ 3,195	\$ 125,800
Income taxes, net	\$ —	\$ —	\$ 174,164	\$ 120,684	\$ 294,848

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 for more information.

21. Subsequent Event

During the month of January 2019, we spent \$45.1 million to repurchase an additional 1,144,449 shares of our Class A common stock with an average price paid per share of \$39.38. Additionally, on February 28, 2019, our board of directors authorized a new program for the company to repurchase up to \$300.0 million of our Class A common stock over three years, effective March 11, 2019. The existing program will terminate upon the effectiveness of the new program.

CBRE GROUP, INC.
QUARTERLY RESULTS OF OPERATIONS
(Unaudited)

	Three Months Ended December 31, 2018	Three Months Ended September 30, 2018	Three Months Ended June 30, 2018	Three Months Ended March 31, 2018
(Dollars in thousands, except share data)				
Revenue	\$ 6,293,748	\$ 5,260,954	\$ 5,111,434	\$ 4,673,952
Operating income	\$ 459,347	\$ 189,717	\$ 225,316	\$ 213,609
Net income attributable to CBRE Group, Inc.	\$ 393,795	\$ 290,469	\$ 228,667	\$ 150,288
Basic income per share	\$ 1.16	\$ 0.86	\$ 0.67	\$ 0.44
Weighted average shares outstanding for basic income per share	339,823,278	339,477,316	339,081,556	338,890,098
Diluted income per share	\$ 1.15	\$ 0.85	\$ 0.67	\$ 0.44
Weighted average shares outstanding for diluted income per share	342,683,720	343,733,947	343,471,513	342,589,810

	Three Months Ended December 31, 2017	Three Months Ended September 30, 2017	Three Months Ended June 30, 2017	Three Months Ended March 31, 2017
(As Adjusted) (1)				
(Dollars in thousands, except share data)				
Revenue	\$ 5,499,654	\$ 4,638,596	\$ 4,439,571	\$ 4,050,966
Operating income	\$ 406,187	\$ 238,956	\$ 228,328	\$ 205,211
Net income attributable to CBRE Group, Inc.	\$ 159,224	\$ 199,088	\$ 201,777	\$ 137,020
Basic income per share	\$ 0.47	\$ 0.59	\$ 0.60	\$ 0.41
Weighted average shares outstanding for basic income per share	338,777,028	337,948,324	336,975,149	336,907,836
Diluted income per share	\$ 0.47	\$ 0.58	\$ 0.59	\$ 0.40
Weighted average shares outstanding for diluted income per share	341,728,078	341,186,431	340,882,603	339,690,579

(1) We adopted new revenue recognition guidance in the first quarter of 2018. Certain restatements have been made to the 2017 and 2016 financial statements to conform with the 2018 presentation. See Notes 2 and 3 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report for more information.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Securities Exchange Act Rules 13a-15(f), including maintenance of (i) records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets, and (ii) policies and procedures that provide reasonable assurance that (a) transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America, (b) our receipts and expenditures are being made only in accordance with authorizations of management and our board of directors and (c) we will prevent or timely detect unauthorized acquisition, use, or disposition of our assets that could have a material effect on the financial statements.

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of the inherent limitations of any system of internal control. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses of judgment and breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper overriding of controls. As a result of such limitations, there is risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, this risk.

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the criteria established in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations (COSO) of the Treadway Commission. We acquired FacilitySource during 2018 ("Acquired Business") as defined in Note 4 to the consolidated financial statements, and we excluded from our assessment of the effectiveness of our internal control over financial reporting as of December 31, 2018, the Acquired Business's internal control over financial reporting associated with total assets of \$372.5 million and total revenues of \$121.6 million included in our consolidated financial statements as of December 31, 2018. Based on our evaluation under the COSO framework, our management concluded that our internal control over financial reporting was effective as of December 31, 2018. The effectiveness of internal control over financial reporting as of December 31, 2018 has been audited by KPMG LLP, an independent registered public accounting firm, as stated in their report which is included herein.

Disclosure Controls and Procedures

Rule 13a-15 of the Securities and Exchange Act of 1934, as amended, requires that we conduct an evaluation of the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Annual Report, and we have a disclosure policy in furtherance of the same. This evaluation is designed to ensure that all corporate disclosure is complete and accurate in all material respects. The evaluation is further designed to ensure that all information required to be disclosed in our SEC reports is accumulated and communicated to management to allow timely decisions regarding required disclosures and recorded, processed, summarized and reported within the time periods and in the manner specified in the SEC's rules and forms. Any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. Our Chief Executive Officer and Chief Financial Officer supervise and participate in this evaluation, and they are assisted by our Chief Accounting Officer and other members of our Disclosure Committee. In addition to our Chief Accounting Officer, our Disclosure Committee consists of our General Counsel, our Chief Digital and Technology Officer, our chief communication officer, our corporate controller, our senior director of Global SOX Assurance, our senior officers of significant business lines and other select employees.

We conducted the required evaluation, and our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures (as defined by Securities Exchange Act Rule 13a-15(e)) were effective as of December 31, 2018 to accomplish their objectives at the reasonable assurance level.

Changes in Internal Control Over Financial Reporting

No changes in our internal control over financial reporting occurred during the fiscal quarter ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information under the headings “Elect Directors,” “Corporate Governance,” “Executive Management” and “Stock Ownership” in the definitive proxy statement for our 2019 Annual Meeting of Stockholders is incorporated herein by reference.

We are filing the certifications by the Chief Executive Officer and Chief Financial Officer required under Section 302 of the Sarbanes-Oxley Act as exhibits to this Annual Report on Form 10-K.

Item 11. Executive Compensation

The information contained under the headings “Corporate Governance,” “Compensation Discussion and Analysis” and “Executive Compensation” in the definitive proxy statement for our 2019 Annual Meeting of Stockholders is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

We incorporate herein by reference the information contained under the heading “Stock Ownership” in the definitive proxy statement for our 2019 Annual Meeting of Stockholders.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information contained under the headings “Elect Directors,” “Corporate Governance” and “Related-Party Transactions” in the definitive proxy statement for our 2019 Annual Meeting of Stockholders is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services

The information contained under the heading “Audit and Other Fees” in the definitive proxy statement for our 2019 Annual Meeting of Stockholders is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

1. *Financial Statements*

See Index to Consolidated Financial Statements set forth on page 54.

2. *Financial Statement Schedules*

See Schedule II on page 125.

3. Exhibits

See Exhibit Index beginning on page 126 hereof.

Item 16. Form 10-K Summary

Not applicable.

CBRE GROUP, INC.
SCHEDULE II – VALUATION AND QUALIFYING ACCOUNTS
(Dollars in thousands)

		Allowance for Doubtful Accounts
Balance, December 31, 2015	\$	46,606
Charges to expense		4,711
Write-offs, payments and other		(11,848)
Balance, December 31, 2016		39,469
Charges to expense		8,044
Write-offs, payments and other		(724)
Balance, December 31, 2017		46,789
Charges to expense		19,760
Write-offs, payments and other		(6,201)
Balance, December 31, 2018	\$	<u>60,348</u>

EXHIBIT INDEX

Exhibit No.	Exhibit Description	Incorporated by Reference				
		Form	SEC File No.	Exhibit	Filing Date	Filed Herewith
2.1	<u>Share Sale Agreement, dated November 12, 2013, by and among William Investments Limited, the individual vendors named therein, CBRE Holdings Limited, CBRE UK Acquisition Company Limited and CBRE Group, Inc.</u>	8-K	001-32205	1.01	11/13/2013	
2.2	<u>Stock and Asset Purchase Agreement, dated as of March 31, 2015, by and between Johnson Controls, Inc. and CBRE, Inc.</u>	8-K	001-32205	2.1	04/03/2015	
3.1	<u>Amended and Restated Certificate of Incorporation of CBRE Group, Inc.</u>	8-K	001-32205	3.1	05/23/2018	
3.2	<u>Amended and Restated By-Laws of CBRE Group, Inc.</u>	8-K	001-32205	3.2	05/23/2018	
4.1	<u>Form of Class A common stock certificate of CBRE Group, Inc.</u>	10-Q	001-32205	4.1	08/09/2017	
4.2(a)	<u>Indenture, dated as of March 14, 2013, among CBRE Group, Inc., CBRE Services, Inc., certain subsidiaries of CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee</u>	10-Q	001-32205	4.4(a)	05/10/2013	
4.2(b)	<u>First Supplemental Indenture, dated as of March 14, 2013, between CBRE Services, Inc., CBRE Group, Inc., certain subsidiaries of CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee, for the 5.00% Senior Notes Due 2023, including the Form of 5.00% Senior Notes due 2023</u>	10-Q	001-32205	4.4(b)	05/10/2013	
4.2(c)	<u>Second Supplemental Indenture, dated as of April 10, 2013, between CBRE/LJM- Nevada, Inc., CBRE Consulting, Inc., CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee, for the 5.00% Senior Notes due 2023</u>	S-3ASR	333-201126	4.3(c)	12/19/2014	
4.2(d)	<u>Form of Supplemental Indenture among certain subsidiary guarantors of CBRE Services, Inc., CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee, for the 5.00% Senior Notes due 2023</u>	8-K	001-32205	4.3	04/16/2013	
4.2(e)	<u>Second Supplemental Indenture, dated as of September 26, 2014, between CBRE Services, Inc., CBRE Group, Inc., certain subsidiaries of CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee, for the 5.25% Senior Notes due 2025, including the Form of 5.25% Senior Notes due 2025</u>	8-K	001-32205	4.1	09/26/2014	

Exhibit No.	Exhibit Description	Incorporated by Reference				
		Form	SEC File No.	Exhibit	Filing Date	Filed Herewith
4.2(f)	Third Supplemental Indenture, dated as of December 12, 2014, between CBRE Services, Inc., CBRE Group, Inc., certain subsidiaries of CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee, for the additional issuance of 5.25% Senior Notes due 2025	8-K	001-32205	4.1	12/12/2014	
4.2(g)	Form of Supplemental Indenture among certain subsidiary guarantors of CBRE Services, Inc., CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee, for the 5.25% Senior Notes due 2025	S-3ASR	333-201126	4.3(h)	12/19/2014	
4.2(h)	Fourth Supplemental Indenture, dated as of August 13, 2015, between CBRE Services, Inc., CBRE Group, Inc., certain subsidiaries of CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee, for the issuance of 4.875% Senior Notes due 2026, including the Form of 4.875% Senior Notes due 2026	8-K	001-32205	4.2	08/13/2015	
4.2(i)	Fifth Supplemental Indenture, dated as of September 25, 2015, between CBRE GWS LLC, CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee, relating to the 5.00% Senior Notes due 2023, the 5.25% Senior Notes due 2025 and the 4.875% Senior Notes due 2026	8-K	001-32205	4.1	09/25/2015	
10.1	Credit Agreement, dated as of October 31, 2017, among CBRE Group, Inc., CBRE Services, Inc., certain subsidiaries of CBRE Services, Inc., the lenders party thereto and Credit Suisse AG, Cayman Islands Branch, as administrative agent	8-K	001-32205	10.1	11/01/2017	
10.2	Borrowing Subsidiary Agreement, dated as of December 20, 2018, among CBRE Group, Inc., CBRE Services, Inc., CBRE Global Acquisition Company and Credit Suisse AG, Cayman Islands Branch, as administrative agent					X
10.3	Incremental Term Loan Assumption Agreement, dated as of December 20, 2018, among CBRE Group, Inc., CBRE Services, Inc., certain subsidiaries of CBRE Services, Inc., the lenders party thereto and Credit Suisse AG, Cayman Islands Branch, as administrative agent	8-K	001-32205	10.1	12/21/2018	
10.4	Guarantee Agreement, dated as of October 31, 2017, among CBRE Group, Inc., CBRE Services, Inc., the subsidiary guarantors party thereto and Credit Suisse AG, Cayman Islands Branch, as administrative agent	8-K	001-32205	10.2	11/01/2017	

Exhibit No.	Exhibit Description	Incorporated by Reference				
		Form	SEC File No.	Exhibit	Filing Date	Filed Herewith
10.5	Supplement No. 1, dated December 20, 2018, to the Guarantee Agreement, among CBRE Group, Inc., CBRE Services, Inc., the subsidiary guarantors party thereto and Credit Suisse AG, Cayman Islands Branch, as administrative agent					X
10.6	CBRE Group, Inc. Executive Bonus Plan +	10-K	001-32205	10.3	03/03/2014	
10.7	CBRE Group, Inc. Executive Incentive Plan +	8-K	001-32205	10.1	05/21/2015	
10.8	Form of Indemnification Agreement for Directors and Officers +	8-K	001-32205	10.1	12/08/2009	
10.9	Form of Indemnification Agreement for Directors and Officers +	10-Q	001-32205	10.3	05/10/2016	
10.10	CBRE Group, Inc. 2012 Equity Incentive Plan +	S-8	333-181235	99.1	05/08/2012	
10.11	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2012 Equity Incentive Plan (Performance Vest) +	8-K	001-32205	10.1	08/20/2013	
10.12	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2012 Equity Incentive Plan (Time Vest) +	8-K	001-32205	10.2	08/20/2013	
10.13	CBRE Group, Inc. 2017 Equity Incentive Plan +	S-8	333-218113	99.1	05/19/2017	
10.14	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (Time Vest) +	10-K	001-32205	10.24	03/1/2018	
10.15	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (Performance Vest) +	10-K	001-32205	10.25	03/1/2018	
10.16	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (Non-Employee Director) +	S-8	333-218113	99.4	05/19/2017	
10.17	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (Time Vesting RSU) +	10-K	001-32205	10.27	03/1/2018	
10.18	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (TSR Performance RSU) +	10-K	001-32205	10.28	03/1/2018	
10.19	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (EPS Performance RSU) +	10-K	001-32205	10.29	03/1/2018	
10.20	CBRE Deferred Compensation Plan + (superseded as of January 1, 2019 by Exhibit 10.24)	8-K	001-32205	10.1	03/12/2012	
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Exhibit No.	Exhibit Description	Incorporated by Reference				
		Form	SEC File No.	Exhibit	Filing Date	Filed Herewith
10.21	Amendment #1 to the CBRE Deferred Compensation Plan + (superseded as of January 1, 2019 by Exhibit 10.24)	10-K	001-32205	10.22	03/01/2017	
10.22	CBRE Deferred Compensation Plan, effective January 1, 2019 +					X
10.23	CBRE Adoption Agreement +					X
10.24	CBRE Group, Inc. Change in Control and Severance Plan for Senior Management, including form of Designation Letter +	8-K	001-32205	10.1	03/27/2015	
10.25	Form of Restricted Covenants Agreement	10-K	001-32205	10.33	03/1/2018	
10.26	Amended and Restated Employment Agreement dated as of January 1, 2016 by and between CBRE Global Investors, LLC and T. Ritson Ferguson +	10-Q	001-32205	10.2	05/10/2016	
10.27	Employment and Transition Agreement dated as of August 17, 2018 by and between CBRE, Inc. and Calvin W. Frese, Jr. +	10-Q	001-32205	10.1	11/09/2018	
21	Subsidiaries of CBRE Group, Inc.					X
23.1	Consent of Independent Registered Public Accounting Firm					X
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to §302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to §302 of the Sarbanes-Oxley Act of 2002					X
32	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002					X
101.INS	XBRL Instance Document					X
101.SCH	XBRL Taxonomy Extension Schema Document					X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document					X

+ Denotes a management contract or compensatory arrangement

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

CBRE GROUP, INC.

By: /s/ ROBERT E. SULENTIC
Robert E. Sulentic
President and Chief Executive Officer

Date: March 1, 2019

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
<u> /s/ DARA A. BAZZANO </u> Dara A. Bazzano	Chief Accounting Officer (Principal Accounting Officer)	March 1, 2019
<u> /s/ BRANDON B. BOZE </u> Brandon B. Boze	Chair of the Board	March 1, 2019
<u> /s/ BETH F. COBERT </u> Beth F. Cobert	Director	March 1, 2019
<u> /s/ CURTIS F. FEENY </u> Curtis F. Feeny	Director	March 1, 2019
<u> /s/ REGINALD H. GILYARD </u> Reginald H. Gilyard	Director	March 1, 2019
<u> /s/ JAMES R. GROCH </u> James R. Groch	Chief Financial Officer (Principal Financial Officer)	March 1, 2019
<u> /s/ CHRISTOPHER T. JENNY </u> Christopher T. Jenny	Director	March 1, 2019
<u> /s/ GERARDO I. LOPEZ </u> Gerardo I. Lopez	Director	March 1, 2019
<u> /s/ PAULA R. REYNOLDS </u> Paula R. Reynolds	Director	March 1, 2019
<u> /s/ ROBERT E. SULENTIC </u> Robert E. Sulentic	Director and President and Chief Executive Officer (Principal Executive Officer)	March 1, 2019
<u> /s/ LAURA D. TYSON </u> Laura D. Tyson	Director	March 1, 2019
<u> /s/ RAY WIRTA </u> Ray Wirta	Director	March 1, 2019
<u> /s/ SANJIV YAJNIK </u> Sanjiv Yajnik	Director	March 1, 2019

BORROWING SUBSIDIARY AGREEMENT

BORROWING SUBSIDIARY AGREEMENT dated as of December 20, 2018 (this “*Agreement*”), among CBRE SERVICES, INC., a Delaware corporation (the “*U.S. Borrower*”), CBRE GROUP, INC., a Delaware corporation (“*Holdings*”), CBRE GLOBAL ACQUISITION COMPANY, a *société à responsabilité limitée* organized under the laws of the Grand Duchy of Luxembourg, having its registered office at 12D, Impasse Drosbach, L-1882 Luxembourg, Grand Duchy of Luxembourg and registered with the Luxembourg Trade and Companies Register (*Registre de Commerce et des Sociétés, Luxembourg*) under number B 150.692 (the “*New Borrowing Subsidiary*”), and CREDIT SUISSE AG, CAYMAN ISLANDS BRANCH, as administrative agent (the “*Administrative Agent*”).

Reference is hereby made to (i) the Credit Agreement dated as of October 31, 2017 (as amended, restated, supplemented or otherwise modified from time to time, the “*Credit Agreement*”), among the U.S. Borrower, CBRE Limited, a limited company organized under the laws of England and Wales (the “*U.K. Borrower*”), CBRE Limited, a corporation organized under the laws of the province of New Brunswick (the “*Canadian Borrower*”), CBRE Pty Limited, a company organized under the laws of Australia and registered in New South Wales (the “*Australian Borrower*”), CBRE Limited, a company organized under the laws of New Zealand (together with the U.S. Borrower, the U.K. Borrower, the Canadian Borrower and the Australian Borrower, the “*Existing Borrowers*”), Holdings, the lenders from time to time party thereto (the “*Lenders*”) and Credit Suisse AG, Cayman Islands Branch, as Administrative Agent for the Lenders and (ii) the Incremental Term Loan Assumption Agreement dated as of December 20, 2018, among the Existing Borrowers, Holdings, the New Borrowing Subsidiary and Credit Suisse AG, Cayman Islands Branch, as Administrative Agent (the “*Incremental Term Loan Assumption Agreement*”). Capitalized terms used herein but not otherwise defined herein shall have the meanings assigned to such terms in the Credit Agreement.

Pursuant to Section 9.18 under the Credit Agreement, the Lenders have agreed, upon the terms and subject to the conditions therein set forth, to make Loans to any wholly owned Subsidiary that the U.S. Borrower shall designate as a Borrower under any of the Commitments, and the U.S. Borrower and the New Borrowing Subsidiary desire that the New Borrowing Subsidiary become a Borrower under the Incremental Euro Term Loan Commitments (as defined in the Incremental Term Loan Assumption Agreement). The U.S. Borrower represents and warrants that the New Borrowing Subsidiary is a wholly owned Subsidiary. Each of the U.S. Borrower and the New Borrowing Subsidiary represent and warrant that the representations and warranties of the U.S. Borrower in the Credit Agreement relating to the New Borrowing Subsidiary and this Agreement are true and correct on and as of the date hereof. Each of Holdings and the U.S. Borrower agrees that its Guarantee contained in the Guarantee Agreement will apply to the Obligations of the New Borrowing Subsidiary. Upon execution of this Agreement by each of the U.S. Borrower, Holdings, the New Borrowing Subsidiary and the Administrative Agent, the New Borrowing Subsidiary shall be a party to the Credit Agreement and shall constitute a “Borrower” for all purposes thereof, and the New Borrowing Subsidiary hereby agrees to be bound by all provisions of the Credit Agreement.

This Agreement shall be governed by and construed in accordance with the laws of the State of New York.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed by their authorized officers as of the date first appearing above.

CBRE GROUP, INC.,

by

/s/ Debbie Fan

Name:Debbie Fan

Title:SVP and Treasurer

CBRE SERVICES, INC.,

by

/s/ Debbie Fan

Name:Debbie Fan

Title:SVP and Treasurer

CBRE GLOBAL ACQUISITION COMPANY,

by

/s/ Caroline Goergen

Name:Caroline Goergen

Title:Type B manager

CREDIT SUISSE AG, CAYMAN ISLANDS BRANCH, as Administrative Agent,

by

/s/ William O'Daly

Name:William O'Daly

Title:Authorized Signatory

by

/s/ D. Andrew Maletta

Name:D. Andrew Maletta

Title:Authorized Signatory

SUPPLEMENT NO. 1 (this "**Supplement**") dated as of December 20, 2018, to the Guarantee Agreement dated as of October 31, 2017 (the "**Guarantee Agreement**"), among CBRE SERVICES, INC., a Delaware corporation (the "**U.S. Borrower**"), CBRE GROUP, INC., a Delaware corporation ("**Holdings**"), the Subsidiaries of the U.S. Borrower from time to time party thereto (the "**Subsidiary Guarantors**" and, together with the U.S. Borrower and Holdings, the "**Guarantors**") and CREDIT SUISSE AG, CAYMAN ISLANDS BRANCH ("**Credit Suisse**"), as administrative agent (in such capacity, the "**Administrative Agent**") for the Lender Parties (as defined therein).

A. Reference is made to (i) the Credit Agreement dated as of October 31, 2017 (as amended, restated, supplemented or otherwise modified from time to time, the "**Credit Agreement**"), among the U.S. Borrower, CBRE Limited, a limited company organized under the laws of England and Wales (the "**U.K. Borrower**"), CBRE Limited, a corporation organized under the laws of the province of New Brunswick (the "**Canadian Borrower**"), CBRE Pty Ltd, a company organized under the laws of Australia and registered in New South Wales (the "**Australian Borrower**"), CBRE Limited, a company organized under the laws of New Zealand (together with the U.S. Borrower, the U.K. Borrower, the Canadian Borrower and the Australian Borrower, the "**Existing Borrowers**"), Holdings, the lenders from time to time party thereto (the "**Lenders**"), the Issuing Banks from time to time party thereto and Credit Suisse AG, Cayman Islands Branch, as administrative agent (in such capacity, the "**Administrative Agent**") and (ii) the Incremental Term Loan Assumption Agreement dated as of December 20, 2018, among the Existing Borrowers, Holdings, the New Loan Party (as defined below), the lenders party thereto and Credit Suisse AG, Cayman Islands Branch, as Administrative Agent (the "**Incremental Term Loan Assumption Agreement**").

B. Capitalized terms used herein and not otherwise defined herein shall have the meanings assigned to such terms in the Guarantee Agreement and the Credit Agreement.

C. The Guarantors have entered into the Guarantee Agreement in consideration of, among other things, Loans made and Letters of Credit issued under the Credit Agreement. Section 7.16 of the Guarantee Agreement provides that additional Subsidiaries of the U.S. Borrower may become Subsidiary Guarantors under the Guarantee Agreement by the execution and delivery of an instrument in the form of this Supplement. The undersigned Subsidiary (the "**New Loan Party**") is executing this Supplement to become a Subsidiary Guarantor which is a Foreign Guarantor under the Guarantee Agreement in order to induce the Lenders to make additional Loans and the Issuing Banks to issue additional Letters of Credit and as consideration for Loans previously made and Letters of Credit previously issued.

Accordingly, the Administrative Agent and the New Loan Party agree as follows:

SECTION 1. In accordance with Section 7.16 of the Guarantee Agreement, the New Loan Party by its signature below becomes a Subsidiary Guarantor which is a Foreign Guarantor under the Guarantee Agreement with the same force and effect as if originally named therein as a Foreign Guarantor and the New Loan Party hereby agrees to all the terms and provisions of the Guarantee Agreement applicable to it as a Foreign Guarantor thereunder but, in any event, subject to the guarantee limitation provided for under Section 2.01(b) of the Guarantee Agreement, to the effect that, notwithstanding any other provisions of the Guarantee Agreement, the maximum liability of the New Loan Party thereunder shall be limited in accordance with such Section 2.01(b) as if it were originally named therein. Each reference to a "Foreign Guarantor" in the Guarantee Agreement shall be deemed to include the New Loan Party. The Guarantee Agreement is hereby incorporated herein by reference. Notwithstanding anything herein to contrary, for the avoidance of doubt, in accordance with the proviso to Section 2.01 of the Guarantee Agreement the guarantee of the New Loan Party pursuant to the Guarantee Agreement shall be limited to the Foreign Obligations.

SECTION 2. The New Loan Party represents and warrants to the Administrative Agent and the other Lender Parties that this Supplement has been duly authorized, executed and delivered by it and constitutes its legal, valid and binding obligation, enforceable against it in accordance with its terms.

SECTION 3. This Supplement may be executed in counterparts (and by different parties hereto on different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. This Supplement shall become effective when the Administrative Agent shall have received counterparts of this Supplement that, when taken together, bear the signatures of the New Loan Party and the Administrative Agent. Delivery of an executed signature page to this Supplement by facsimile transmission or other customary means of electronic transmission (e.g., "pdf") shall be as effective as delivery of a manually signed counterpart of this Supplement.

SECTION 4. Except as expressly supplemented hereby, the Guarantee Agreement shall remain in full force and effect.

SECTION 5. THIS SUPPLEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK.

SECTION 6. In case any one or more of the provisions contained in this Supplement should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and in the Guarantee Agreement shall not in any way be affected or impaired thereby (it being understood that the invalidity of a particular provision in a particular jurisdiction shall not in and of itself affect the validity of such provision in any other jurisdiction). The parties hereto shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

SECTION 7. All communications and notices hereunder shall (except as otherwise expressly permitted by the Guarantee Agreement) be in writing and given as provided in Section 9.01 of the Credit Agreement. All communications and notices hereunder to the New Loan Party shall be given to it in care of the U.S. Borrower as provided in Section 9.01 of the Credit Agreement.

[Remainder of this page intentionally left blank]

IN WITNESS WHEREOF, the New Loan Party and the Administrative Agent have duly executed this Supplement to the Guarantee Agreement as of the day and year first above written.

CBRE GLOBAL ACQUISITION COMPANY, a *société à responsabilité limitée* organized under the laws of the Grand Duchy of Luxembourg, having its registered office at 12D, Impasse Drosbach, L-1882 Luxembourg, Grand Duchy of Luxembourg and registered with the Luxembourg Trade and Companies Register (*Registre de Commerce et des Sociétés, Luxembourg*) under number B 150.692

by /s/ Caroline Goergen
Name: Caroline Goergen
Title: Type B manager
Address: 9, Allee Scheffer, L-2520 Luxembourg

CREDIT SUISSE AG, CAYMAN ISLANDS BRANCH, as
Administrative Agent

by /s/ William O'Daly
Name: William O'Daly
Title: Authorized Signatory

by /a/ D. Andrew Maletta
Name: D. Andrew Maletta
Title: Authorized Signatory

CBRE Deferred Compensation Plan

As Amended and Restated
January 1, 2019

IMPORTANT NOTE

This document has not been approved by the Department of Labor, Internal Revenue Service or any other governmental entity. An adopting Employer must determine whether the Plan is subject to the Federal securities laws and the securities laws of the various states. An adopting Employer may not rely on this document to ensure any particular tax consequences or to ensure that the Plan is “unfunded and maintained primarily for the purpose of providing deferred compensation to a select group of management or highly compensated employees” under Title I of the Employee Retirement Income Security Act of 1974, as amended, with respect to the Employer’s particular situation. Fidelity Employer Services Company, its affiliates and employees cannot provide you with legal advice in connection with the execution of this document. This document should be reviewed by the Employer’s attorney prior to execution.

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PREAMBLE

The Plan is intended to be a “plan which is unfunded and is maintained by an employer primarily for the purpose of providing deferred compensation for a select group of management or highly compensated employees” within the meaning of Sections 201(2), 301(a)(3) and 401(a)(1) of the Employee Retirement Income Security Act of 1974, as amended, or an “excess benefit plan” within the meaning of Section 3(36) of the Employee Retirement Income Security Act of 1974, as amended, or a combination of both. The Plan is further intended to conform with the requirements of Internal Revenue Code Section 409A and the final regulations issued thereunder and shall be interpreted, implemented and administered in a manner consistent therewith.

ARTICLE 1 – GENERAL

1.1 Plan. The Plan will be referred to by the name specified in the Adoption Agreement.

1.2 Effective Dates.

- (a) Original Effective Date. The Original Effective Date is the date as of which the Plan was initially adopted.
- (b) Amendment Effective Date. The Amendment Effective Date is the date specified in the Adoption Agreement as of which the Plan is amended and restated. Except to the extent otherwise provided herein or in the Adoption Agreement, the Plan shall apply to amounts deferred and benefit payments made on or after the Amendment Effective Date.
- (c) Special Effective Date. A Special Effective Date may apply to any given provision if so specified in Appendix A of the Adoption Agreement. A Special Effective Date will control over the Original Effective Date or Amendment Effective Date, whichever is applicable, with respect to such provision of the Plan.

1.3 Amounts Not Subject to Code Section 409A.

Except as otherwise indicated by the Plan Sponsor in Section 1.01 of the Adoption Agreement, amounts deferred before January 1, 2005 that are earned and vested on December 31, 2004 will be separately accounted for and administered in accordance with the terms of the Plan as in effect on December 31, 2004.

ARTICLE 2 – DEFINITIONS

Pronouns used in the Plan are in the masculine gender but include the feminine gender unless the context clearly indicates otherwise. Wherever used herein, the following terms have the meanings set forth below, unless a different meaning is clearly required by the context:

- 2.1 “**Account**” means an account established for the purpose of recording amounts credited on behalf of a Participant and any income, expenses, gains, losses or distributions included thereon. The Account shall be a bookkeeping entry only and shall be utilized solely as a device for the measurement and determination of the amounts to be paid to a Participant or to the Participant’s Beneficiary pursuant to the Plan.
- 2.2 “**Administrator**” means the person or persons designated by the Plan Sponsor in Section 1.05 of the Adoption Agreement to be responsible for the administration of the Plan. If no Administrator is designated in the Adoption Agreement, the Administrator is the Plan Sponsor.
- 2.3 “**Adoption Agreement**” means the agreement adopted by the Plan Sponsor that establishes the Plan.
- 2.4 “**Beneficiary**” means the persons, trusts, estates or other entities entitled under Section 8.2 to receive benefits under the Plan upon the death of a Participant.
- 2.5 “**Board**” or “**Board of Directors**” means the Board of Directors of the Plan Sponsor.
- 2.6 “**Bonus**” means an amount of incentive remuneration payable by the Employer to a Participant.
- 2.7 “**Change in Control**” means the occurrence of an event involving the Plan Sponsor that is described in Section 9.7.
- 2.8 “**Code**” means the Internal Revenue Code of 1986, as amended.
- 2.9 “**Compensation**” has the meaning specified in Section 3.01 of the Adoption Agreement.
- 2.10 “**Director**” means a non-employee member of the Board who has been designated by the Employer as eligible to participate in the Plan.

- 2.11** “**Disability**” means a determination by the Administrator that the Participant is either (a) unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or can be expected to last for a continuous period of not less than 12 months, or (b) is, by reason of any medically determinable physical or mental impairment which can be expected to result in death or last for a continuous period of not less than twelve months, receiving income replacement benefits for a period of not less than three months under an accident and health plan covering employees of the Employer. A Participant will be considered to have incurred a Disability if he is determined to be totally disabled by the Social Security Administration or the Railroad Retirement Board.
- 2.12** “**Eligible Employee**” means an employee of the Employer who satisfies the requirements in Section 2.01 of the Adoption Agreement.
- 2.13** “**Employer**” means the Plan Sponsor and any other entity which is authorized by the Plan Sponsor to participate in and, in fact, does adopt the Plan.
- 2.14** “**ERISA**” means the Employee Retirement Income Security Act of 1974, as amended.
- 2.15** “**Identification Date**” means the date as of which Key Employees are determined which is specified in Section 1.06 of the Adoption Agreement.
- 2.16** “**Key Employee**” means an employee who satisfies the conditions set forth in Section 9.6.
- 2.17** “**Participant**” means an Eligible Employee or Director who commences participation in the Plan in accordance with Article 3.
- 2.18** “**Plan**” means the unfunded plan of deferred compensation set forth herein, including the Adoption Agreement and any trust agreement, as adopted by the Plan Sponsor and as amended from time to time.
- 2.19** “**Plan Sponsor**” means the entity identified in Section 1.03 of the Adoption Agreement or any successor by merger, consolidation or otherwise.
- 2.20** “**Plan Year**” means the period identified in Section 1.02 of the Adoption Agreement.
- 2.21** “**Related Employer**” means the Employer and (a) any corporation that is a member of a controlled group of corporations as defined in Code Section 414(b) that includes the Employer and (b) any trade or business that is under common control as defined in Code Section 414(c) that includes the Employer.

2.22 “**Retirement**” has the meaning specified in 6.01(f) of the Adoption Agreement.

2.23 “**Separation from Service**” means the date that the Participant dies, retires or otherwise has a termination of employment with respect to all entities comprising the Related Employer. A Separation from Service does not occur if the Participant is on military leave, sick leave or other bona fide leave of absence if the period of leave does not exceed six months or such longer period during which the Participant’s right to re-employment is provided by statute or contract. If the period of leave exceeds six months and the Participant’s right to re-employment is not provided either by statute or contract, a Separation from Service will be deemed to have occurred on the first day following the six-month period. If the period of leave is due to any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than six months, where the impairment causes the Participant to be unable to perform the duties of his or her position of employment or any substantially similar position of employment, a 29 month period of absence may be substituted for the six month period.

Whether a termination of employment has occurred is based on whether the facts and circumstances indicate that the Related Employer and the Participant reasonably anticipated that no further services would be performed after a certain date or that the level of bona fide services the Participant would perform after such date (whether as an employee or as an independent contractor) would permanently decrease to no more than 20 percent of the average level of bona fide services performed (whether as an employee or an independent contractor) over the immediately preceding 36 month period (or the full period of services to the Related Employer if the employee has been providing services to the Related Employer for less than 36 months).

An independent contractor is considered to have experienced a Separation from Service with the Related Employer upon the expiration of the contract (or, in the case of more than one contract, all contracts) under which services are performed for the Related Employer if the expiration constitutes a good-faith and complete termination of the contractual relationship.

If a Participant provides services as both an employee and an independent contractor of the Related Employer, the Participant must separate from service both as an employee and as an independent contractor to be treated as having incurred a Separation from Service. If a Participant ceases providing services as an independent contractor and begins providing services as an employee, or ceases providing services as an employee and begins providing services as an independent contractor, the Participant will not be considered to have experienced a Separation from Service until the Participant has ceased providing services in both capacities.

If a Participant provides services both as an employee and as a member of the board of directors of a corporate Related Employer (or an analogous position with respect to a noncorporate Related Employer), the services provided as a director are not taken into account in determining whether the Participant has incurred a Separation from Service as an employee for purposes of a nonqualified deferred compensation plan in which the Participant participates as an employee that is not aggregated under Code Section 409A with any plan in which the Participant participates as a director.

If a Participant provides services both as an employee and as a member of the board of directors of a corporate related Employer (or an analogous position with respect to a noncorporate Related Employer), the services provided as an employee are not taken into account in determining whether the Participant has experienced a Separation from Service as a director for purposes of a nonqualified deferred compensation plan in which the Participant participates as a director that is not aggregated under Code Section 409A with any plan in which the Participant participates as an employee.

All determinations of whether a Separation from Service has occurred will be made in a manner consistent with Code Section 409A and the final regulations thereunder.

- 2.24** “**Unforeseeable Emergency**” means a severe financial hardship of the Participant resulting from an illness or accident of the Participant, the Participant’s spouse, the Participant’s Beneficiary, or the Participant’s dependent (as defined in Code Section 152, without regard to Code section 152(b)(1), (b)(2) and (d)(1)(B); loss of the Participant’s property due to casualty; or other similar extraordinary and unforeseeable circumstances arising as a result of events beyond the control of the Participant.
- 2.25** “**Valuation Date**” means each business day of the Plan Year that the New York Stock Exchange is open.
- 2.26** “**Years of Service**” means each one year period for which the Participant receives service credit in accordance with the provisions of Section 7.01(d) of the Adoption Agreement.

ARTICLE 3 – PARTICIPATION

- 3.1 Participation.** The Participants in the Plan shall be those Directors and employees of the Employer who satisfy the requirements of Section 2.01 of the Adoption Agreement.
- 3.2 Termination of Participation.** The Administrator may terminate a Participant's participation in the Plan in a manner consistent with Code Section 409A. If the Employer terminates a Participant's participation before the Participant experiences a Separation from Service the Participant's vested Accounts shall be paid in accordance with the provisions of Article 9.

ARTICLE 4 – PARTICIPANT ELECTIONS

4.1 Deferral Agreement. If permitted by the Plan Sponsor in accordance with Section 4.01 of the Adoption Agreement, each Eligible Employee and Director may elect to defer his Compensation within the meaning of Section 3.01 of the Adoption Agreement by executing in writing or electronically, a deferral agreement in accordance with rules and procedures established by the Administrator and the provisions of this Article 4.

A new deferral agreement must be timely executed for each Plan Year during which the Eligible Employee or Director desires to defer Compensation. An Eligible Employee or Director who does not timely execute a deferral agreement shall be deemed to have elected zero deferrals of Compensation for such Plan Year.

A deferral agreement may be changed or revoked during the period specified by the Administrator. Except as provided in Section 9.3 or in Section 4.01(c) of the Adoption Agreement, a deferral agreement becomes irrevocable at the close of the specified period.

4.2 Amount of Deferral. An Eligible Employee or Director may elect to defer Compensation in any amount permitted by Section 4.01(a) of the Adoption Agreement.

4.3 Timing of Election to Defer. Each Eligible Employee or Director who desires to defer Compensation otherwise payable during a Plan Year must execute a deferral agreement within the period preceding the Plan Year specified by the Administrator. Each Eligible Employee who desires to defer Compensation that is a Bonus must execute a deferral agreement within the period preceding the Plan Year during which the Bonus is earned that is specified by the Administrator, except that if the Bonus can be treated as performance based compensation as described in Code Section 409A(a)(4)(B)(iii), the deferral agreement may be executed within the period specified by the Administrator, which period, in no event, shall end after the date which is six months prior to the end of the period during which the Bonus is earned, provided the Participant has performed services continuously from the later of the beginning of the performance period or the date the performance criteria are established through the date the Participant executed the deferral agreement and provided further that the compensation has not yet become 'readily ascertainable' within the meaning of Reg. Sec. 1.409A-2(a)(8). In addition, if the Compensation qualifies as 'fiscal year compensation' within the meaning of Reg. Sec. 1.409A-2(a)(6), the deferral agreement may be made not later than the end of the Employer's taxable year immediately preceding the first taxable year of the Employer in which any services are performed for which such Compensation is payable.

Except as otherwise provided below, an employee who is classified or designated as an Eligible Employee during a Plan Year or a Director who is designated as eligible to participate during a Plan Year may elect to defer Compensation otherwise payable during the remainder of such Plan Year in accordance with the rules of this Section 4.3 by executing a deferral agreement within the thirty (30) day period beginning on the date the employee is classified or designated as an Eligible Employee or the date the Director is designated as eligible, whichever is applicable, if permitted by Section 4.01(b)(ii) of the Adoption Agreement. If Compensation is based on a specified performance period that begins before the Eligible Employee or Director executes his deferral agreement, the election will be deemed to apply to the portion of such Compensation equal to the total amount of Compensation for the performance period multiplied by the ratio of the number of days remaining in the performance period after the election becomes irrevocable and effective over the total number of days in the performance period. The rules of this paragraph shall not apply unless the Eligible Employee or Director can be treated as initially eligible in accordance with Reg. Sec. 1.409A-2(a)(7).

4.4 Election of Payment Schedule and Form of Payment.

All elections of a payment schedule and a form of payment will be made in accordance with rules and procedures established by the Administrator and the provisions of this Section 4.4.

- (a) If the Plan Sponsor has elected to permit annual distribution elections in accordance with Section 6.01(h) of the Adoption Agreement the following rules apply. At the time an Eligible Employee or Director completes a deferral agreement, the Eligible Employee or Director must elect a distribution event (which includes a specified time) and a form of payment for the Compensation subject to the deferral agreement from among the options the Plan Sponsor has made available for this purpose and which are specified in 6.01(b) of the Adoption Agreement. Prior to the time required by Reg. Sec. 1.409A-2, the Eligible Employee or Director shall elect a distribution event (which includes a specified time) and a form of payment for any Employer contributions that may be credited to the Participant's Account during the Plan Year. If an Eligible Employee or Director fails to elect a distribution event, he shall be deemed to have elected Separation from Service as the distribution event. If he fails to elect a form of payment, he shall be deemed to have elected a lump sum form of payment.

- (b) If the Plan Sponsor has elected not to permit annual distribution elections in accordance with Section 6.01(h) of the Adoption Agreement the following rules apply. At the time an Eligible Employee or Director first completes a deferral agreement but in no event later than the time required by Reg. Sec. 1.409A-2, the Eligible Employee or Director must elect a distribution event (which includes a specified time) and a form of payment for amounts credited to his Account from among the options the Plan Sponsor has made available for this purpose and which are specified in Section 6.01(b) of the Adoption Agreement. If an Eligible Employee or Director fails to elect a distribution event, he shall be deemed to have elected Separation from Service in the distribution event. If he fails to elect a form of payment, he shall be deemed to have elected a lump sum form of payment.

ARTICLE 5 – EMPLOYER CONTRIBUTIONS

- 5.1 Matching Contributions.** If elected by the Plan Sponsor in Section 5.01(a) of the Adoption Agreement, the Employer will credit the Participant's Account with a matching contribution determined in accordance with the formula specified in Section 5.01(a) of the Adoption Agreement. The matching contribution will be treated as allocated to the Participant's Account at the time specified in Section 5.01(a)(iii) of the Adoption Agreement.
- 5.2 Other Contributions.** If elected by the Plan Sponsor in Section 5.01(b) of the Adoption Agreement, the Employer will credit the Participant's Account with a contribution determined in accordance with the formula or method specified in Section 5.01(b) of the Adoption Agreement. The contribution will be treated as allocated to the Participant's Account at the time specified in Section 5.01(b)(iii) of the Adoption Agreement.

ARTICLE 6 – ACCOUNTS AND CREDITS

- 6.1 Establishment of Account.** For accounting and computational purposes only, the Administrator will establish and maintain an Account on behalf of each Participant which will reflect the credits made pursuant to Section 6.2, distributions or withdrawals, along with the earnings, expenses, gains and losses allocated thereto, attributable to the hypothetical investments made with the amounts in the Account as provided in Article 7. The Administrator will establish and maintain such other records and accounts, as it decides in its discretion to be reasonably required or appropriate to discharge its duties under the Plan.
- 6.2 Credits to Account.** A Participant's Account will be credited for each Plan Year with the amount of his elective deferrals under Section 4.1 at the time the amount subject to the deferral election would otherwise have been payable to the Participant (or as soon as administratively practicable thereafter) and the amount of Employer contributions treated as allocated on his behalf under Article 5. Notwithstanding the foregoing, pursuant to Section 12.1(a), the Administrator may make and enforce such rules and procedures related to the credits and adjustments to the Accounts it deems necessary or proper for the efficient administration of the Plan.

ARTICLE 7 – INVESTMENT OF CONTRIBUTIONS

- 7.1 Investment Options.** The amount credited to each Account shall be treated as invested in the investment options designated for this purpose by the Administrator.
- 7.2 Adjustment of Accounts.** The amount credited to each Account shall be adjusted for hypothetical investment earnings, expenses, gains or losses in an amount equal to the earnings, expenses, gains or losses attributable to the investment options selected by the party designated in Section 9.01 of the Adoption Agreement from among the investment options provided in Section 7.1. If permitted by Section 9.01 of the Adoption Agreement, a Participant (or the Participant's Beneficiary after the death of the Participant) may, in accordance with rules and procedures established by the Administrator, select the investments from among the options provided in Section 7.1 to be used for the purpose of calculating future hypothetical investment adjustments to the Account or to future credits to the Account under Section 6.2 effective as of the Valuation Date (or as soon as administratively practicable thereafter) coincident with or next following notice to the Administrator. Each Account shall be adjusted as of each Valuation Date or as soon as administratively practicable thereafter to reflect: (a) the hypothetical earnings, expenses, gains and losses described above; (b) amounts credited pursuant to Section 6.2; and (c) distributions or withdrawals. In addition, each Account may be adjusted for its allocable share of the hypothetical costs and expenses associated with the maintenance of the hypothetical investments provided in Section 7.1. Notwithstanding the foregoing, pursuant to Section 12.1(a), the Administrator may make and enforce such rules and procedures related to the credits and adjustments to the Accounts as it deems necessary and proper for the efficient administration of the Plan.

7.1

ARTICLE 8 – RIGHT TO BENEFITS

- 8.1 Vesting.** A Participant, at all times, has a 100% nonforfeitable interest in the amounts credited to his Account attributable to his elective deferrals made in accordance with Section 4.1.

A Participant's right to the amounts credited to his Account attributable to Employer contributions made in accordance with Article 5 shall be determined in accordance with the relevant schedule and provisions in Section 7.01 of the Adoption Agreement. Upon a Separation from Service and after application of the provisions of Section 7.01 of the Adoption Agreement, the Participant shall forfeit the nonvested portion of his Account.

- 8.2 Death.** The Plan Sponsor may elect to accelerate vesting upon the death of the Participant in accordance with Section 7.01(c) of the Adoption Agreement and/or to accelerate distributions upon Death in accordance with Section 6.01(b) or Section 6.01(d) of the Adoption Agreement. If the Plan Sponsor does not elect to accelerate distributions upon death in accordance with Section 6.01(b) or Section 6.01(d) of the Adoption Agreement, the vested amount credited to the Participant's Account will be paid in accordance with the provisions of Article 9.

A Participant may designate a Beneficiary or Beneficiaries, or change any prior designation of Beneficiary or Beneficiaries in accordance with rules and procedures established by the Administrator.

A copy of the death notice or other sufficient documentation must be filed with and approved by the Administrator. If upon the death of the Participant there is, in the opinion of the Administrator, no designated Beneficiary for part or all of the Participant's vested Account, such amount will be paid to his estate (such estate shall be deemed to be the Beneficiary for purposes of the Plan) in accordance with the provisions of Article 9.

- 8.3 Disability.** If the Plan Sponsor has elected to accelerate vesting upon the occurrence of a Disability in accordance with Section 7.01(c) of the Adoption Agreement and/or to permit distributions upon Disability in accordance with Section 6.01(b) or Section 6.01(d) of the Adoption Agreement, the determination of whether a Participant has incurred a Disability shall be made by the Administrator in its sole discretion in a manner consistent with the requirements of Code Section 409A.

ARTICLE 9 – DISTRIBUTION OF BENEFITS

- 9.1 Amount of Benefits.** The vested amount credited to a Participant's Account as determined under Articles 6, 7 and 8 shall determine and constitute the basis for the value of benefits payable to the Participant under the Plan.
- 9.2 Method and Timing of Distributions.** Except as otherwise provided in this Article 9, distributions under the Plan shall be made in accordance with the elections made or deemed made by the Participant under Article 4. Subject to the provisions of Section 9.6 requiring a six month delay for certain distributions to Key Employees, distributions following a payment event shall commence at the time specified in Section 6.01(a) of the Adoption Agreement. If permitted by Section 6.01(g) of the Adoption Agreement, a Participant may elect, at least twelve months before a scheduled distribution event, to delay the payment date for a minimum period of sixty months from the originally scheduled date of payment, provided the election does not take effect for at least twelve months from the date on which the election is made. The distribution election change must be made in accordance with procedures and rules established by the Administrator. The Participant may, at the same time the date of payment is deferred, change the form of payment but such change in the form of payment may not effect an acceleration of payment in violation of Code Section 409A or the provisions of Reg. Sec. 1.409A-2(b). For purposes of this Section 9.2, a series of installment payments is always treated as a single payment and not as a series of separate payments.

9.3 Unforeseeable Emergency. A Participant may request a distribution due to an Unforeseeable Emergency if the Plan Sponsor has elected to permit Unforeseeable Emergency withdrawals under Section 8.01(a) of the Adoption Agreement. The request must be in writing and must be submitted to the Administrator along with evidence that the circumstances constitute an Unforeseeable Emergency. The Administrator has the discretion to require whatever evidence it deems necessary to determine whether a distribution is warranted, and may require the Participant to certify that the need cannot be met from other sources reasonably available to the Participant. Whether a Participant has incurred an Unforeseeable Emergency will be determined by the Administrator on the basis of the relevant facts and circumstances in its sole discretion, but, in no event, will an Unforeseeable Emergency be deemed to exist if the hardship can be relieved: (a) through reimbursement or compensation by insurance or otherwise, (b) by liquidation of the Participant's assets to the extent such liquidation would not itself cause severe financial hardship, or (c) by cessation of deferrals under the Plan. A distribution due to an Unforeseeable Emergency must be limited to the amount reasonably necessary to satisfy the emergency need and may include any amounts necessary to pay any federal, state, foreign or local income taxes and penalties reasonably anticipated to result from the distribution. The distribution will be made in the form of a single lump sum cash payment. If permitted by Section 8.01(b) of the Adoption Agreement, a Participant's deferral elections for the remainder of the Plan Year will be cancelled upon a withdrawal due to an Unforeseeable Emergency. If the payment of all or any portion of the Participant's vested Account is being delayed in accordance with Section 9.6 at the time he experiences an Unforeseeable Emergency, the amount being delayed shall not be subject to the provisions of this Section 9.3 until the expiration of the six month period of delay required by section 9.6.

9.4 Payment Election Overrides. If the Plan Sponsor has elected one or more payment election overrides in accordance with Section 6.01(d) of the Adoption Agreement, the following provisions apply. Upon the occurrence of the first event selected by the Plan Sponsor, the remaining vested amount credited to the Participant's Account shall be paid in the form designated to the Participant or his Beneficiary regardless of whether the Participant had made different elections of time and /or form of payment or whether the Participant was receiving installment payments at the time of the event.

9.5 Cashouts Of Amounts Not Exceeding Stated Limit. If the vested amount credited to the Participant's Account does not exceed the limit established for this purpose by the Plan Sponsor in Section 6.01(e) of the Adoption Agreement at the time he incurs a Separation from Service for any reason, the Employer shall distribute such amount to the Participant at the time specified in Section 6.01(a) of the Adoption Agreement in a single lump sum cash payment following such Separation from Service regardless of whether the Participant had made different elections of time or form of payment as to the vested amount credited to his Account or whether the Participant was receiving installments at the time of such termination. A Participant's Account, for purposes of this Section 9.5, shall include any amounts described in Section 1.3.

9.6 Required Delay in Payment to Key Employees Except as otherwise provided in this Section 9.6, a distribution made on account of Separation from Service (or Retirement, if applicable) to a Participant who is a Key Employee as of the date of his Separation from Service (or Retirement, if applicable) shall not be made before the date which is six months after the Separation from Service (or Retirement, if applicable).

- (a) A Participant is treated as a Key Employee if (i) he is employed by a Related Employer any of whose stock is publicly traded on an established securities market, and (ii) he satisfies the requirements of Code Section 416(i)(1)(A)(i), (ii) or (iii), determined without regard to Code Section 416(i)(5), at any time during the twelve month period ending on the Identification Date.
- (b) A Participant who is a Key Employee on an Identification Date shall be treated as a Key Employee for purposes of the six month delay in distributions for the twelve month period beginning on the first day of a month no later than the fourth month following the Identification Date. The Identification Date and the effective date of the delay in distributions shall be determined in accordance with Section 1.06 of the Adoption Agreement.
- (c) The Plan Sponsor may elect to apply an alternative method to identify Participants who will be treated as Key Employees for purposes of the six month delay in distributions if the method satisfies each of the following requirements. The alternative method is reasonably designed to include all Key Employees, is an objectively determinable standard providing no direct or indirect election to any Participant regarding its application, and results in either all Key Employees or no more than 200 Key Employees being identified in the class as of any date. Use of an alternative method that satisfies the requirements of this Section 9.6(c) will not be treated as a change in the time and form of payment for purposes of Reg. Sec. 1.409A-2(b).

- (d) The six month delay does not apply to payments described in Section 9.9(a),(b) or (d) or to payments that occur after the death of the Participant. If the payment of all or any portion of the Participant's vested Account is being delayed in accordance with this Section 9.6 at the time he incurs a Disability which would otherwise require a distribution under the terms of the Plan, no amount shall be paid until the expiration of the six month period of delay required by this Section 9.6.

9.7 Change in Control. If the Plan Sponsor has elected to permit distributions upon a Change in Control, the following provisions shall apply. A distribution made upon a Change in Control will be made at the time specified in Section 6.01(a) of the Adoption Agreement in the form elected by the Participant in accordance with the procedures described in Article 4. Alternatively, if the Plan Sponsor has elected in accordance with Section 11.02 of the Adoption Agreement to require distributions upon a Change in Control, the Participant's remaining vested Account shall be paid to the Participant or the Participant's Beneficiary at the time specified in Section 6.01(a) of the Adoption Agreement as a single lump sum payment. A Change in Control, for purposes of the Plan, will occur upon a change in the ownership of the Plan Sponsor, a change in the effective control of the Plan Sponsor or a change in the ownership of a substantial portion of the assets of the Plan Sponsor, but only if elected by the Plan Sponsor in Section 11.03 of the Adoption Agreement. The Plan Sponsor, for this purpose, includes any corporation identified in this Section 9.7. All distributions made in accordance with this Section 9.7 are subject to the provisions of Section 9.6.

If a Participant continues to make deferrals in accordance with Article 4 after he has received a distribution due to a Change in Control, the residual amount payable to the Participant shall be paid at the time and in the form specified in the elections he makes in accordance with Article 4 or upon his death or Disability as provided in Article 8.

Whether a Change in Control has occurred will be determined by the Administrator in accordance with the rules and definitions set forth in this Section 9.7. A distribution to the Participant will be treated as occurring upon a Change in Control if the Plan Sponsor terminates the Plan in accordance with Section 10.2 and distributes the Participant's benefits within twelve months of a Change in Control as provided in Section 10.3.

- (a) **Relevant Corporations.** To constitute a Change in Control for purposes of the Plan, the event must relate to (i) the corporation for whom the Participant is performing services at the time of the Change in Control, (ii) the corporation that is liable for the payment of the Participant's benefits under the Plan (or all corporations liable if more than one corporation is liable) but only if either the deferred compensation is attributable to the performance of services by the Participant for such corporation (or corporations) or there is a bona fide business purpose for such corporation (or corporations) to be liable for such payment and, in either case, no significant purpose of making such corporation (or corporations) liable for such payment is the avoidance of federal income tax, or (iii) a corporation that is a majority shareholder of a corporation identified in (i) or (ii), or any corporation in a chain of corporations in which each corporation is a majority shareholder of another corporation in the chain, ending in a corporation identified in (i) or (ii). A majority shareholder is defined as a shareholder owning more than fifty percent (50%) of the total fair market value and voting power of such corporation.
- (b) **Stock Ownership.** Code Section 318(a) applies for purposes of determining stock ownership. Stock underlying a vested option is considered owned by the individual who owns the vested option (and the stock underlying an unvested option is not considered owned by the individual who holds the unvested option). If, however, a vested option is exercisable for stock that is not substantially vested (as defined by Treasury Regulation Section 1.83-3(b) and (j)) the stock underlying the option is not treated as owned by the individual who holds the option.

- (c) **Change in the Ownership of a Corporation.** A change in the ownership of a corporation occurs on the date that any one person or more than one person acting as a group, acquires ownership of stock of the corporation that, together with stock held by such person or group, constitutes more than fifty percent (50%) of the total fair market value or total voting power of the stock of such corporation. If any one person or more than one person acting as a group is considered to own more than fifty percent (50%) of the total fair market value or total voting power of the stock of a corporation, the acquisition of additional stock by the same person or persons is not considered to cause a change in the ownership of the corporation (or to cause a change in the effective control of the corporation as discussed below in Section 9.7(d)). An increase in the percentage of stock owned by any one person, or persons acting as a group, as a result of a transaction in which the corporation acquires its stock in exchange for property will be treated as an acquisition of stock. Section 9.7(c) applies only when there is a transfer of stock of a corporation (or issuance of stock of a corporation) and stock in such corporation remains outstanding after the transaction. For purposes of this Section 9.7(c), persons will not be considered to be acting as a group solely because they purchase or own stock of the same corporation at the same time or as a result of a public offering. Persons will, however, be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase or acquisition of stock, or similar business transaction with the corporation. If a person, including an entity, owns stock in both corporations that enter into a merger, consolidation, purchase or acquisition of stock, or similar transaction, such shareholder is considered to be acting as a group with other shareholders in a corporation only with respect to ownership in that corporation prior to the transaction giving rise to the change and not with respect to the ownership interest in the other corporation.

- (d) **Change in the effective control of a corporation.** A change in the effective control of a corporation occurs on the date that either (i) any one person, or more than one person acting as a group, acquires (or has acquired during the twelve month period ending on the date of the most recent acquisition by such person or persons) ownership of stock of the corporation possessing thirty percent (30%) or more of the total voting power of the stock of such corporation, or (ii) a majority of members of the corporation's board of directors is replaced during any twelve month period by directors whose appointment or election is not endorsed by a majority of the members of the corporation's board of directors prior to the date of the appointment or election, provided that for purposes of this paragraph (ii), the term corporation refers solely to the relevant corporation identified in Section 9.7(a) for which no other corporation is a majority shareholder for purposes of Section 9.7(a). In the absence of an event described in Section 9.7(d)(i) or (ii), a change in the effective control of a corporation will not have occurred. A change in effective control may also occur in any transaction in which either of the two corporations involved in the transaction has a change in the ownership of such corporation as described in Section 9.7(c) or a change in the ownership of a substantial portion of the assets of such corporation as described in Section 9.7(e). If any one person, or more than one person acting as a group, is considered to effectively control a corporation within the meaning of this Section 9.7(d), the acquisition of additional control of the corporation by the same person or persons is not considered to cause a change in the effective control of the corporation or to cause a change in the ownership of the corporation within the meaning of Section 9.7(c). For purposes of this Section 9.7(d), persons will or will not be considered to be acting as a group in accordance with rules similar to those set forth in Section 9.7(c) with the following exception. If a person, including an entity, owns stock in both corporations that enter into a merger, consolidation, purchase or acquisition of stock, or similar transaction, such shareholder is considered to be acting as a group with other shareholders in a corporation only with respect to the ownership in that corporation prior to the transaction giving rise to the change and not with respect to the ownership interest in the other corporation.

- (e) **Change in the ownership of a substantial portion of a corporation's assets.** A change in the ownership of a substantial portion of a corporation's assets occurs on the date that any one person, or more than one person acting as a group (as determined in accordance with rules similar to those set forth in Section 9.7(d)), acquires (or has acquired during the twelve month period ending on the date of the most recent acquisition by such person or persons) assets from the corporation that have a total gross fair market value equal to or more than forty percent (40%) of the total gross fair market value of all of the assets of the corporation immediately prior to such acquisition or acquisitions. For this purpose, gross fair market value means the value of the assets of the corporation or the value of the assets being disposed of determined without regard to any liabilities associated with such assets. There is no Change in Control event under this Section 9.7(e) when there is a transfer to an entity that is controlled by the shareholders of the transferring corporation immediately after the transfer. A transfer of assets by a corporation is not treated as a change in ownership of such assets if the assets are transferred to (i) a shareholder of the corporation (immediately before the asset transfer) in exchange for or with respect to its stock, (ii) an entity, fifty percent (50%) or more of the total value or voting power of which is owned, directly or indirectly, by the corporation, (iii) a person, or more than one person acting as a group, that owns, directly or indirectly, fifty percent (50%) or more of the total value or voting power of all the outstanding stock of the corporation, or (iv) an entity, at least fifty (50%) of the total value or voting power of which is owned, directly or indirectly, by a person described in Section 9.7(e)(iii). For purposes of the foregoing, and except as otherwise provided, a person's status is determined immediately after the transfer of assets.

9.8 Permissible Delays in Payment. Distributions may be delayed beyond the date payment would otherwise occur in accordance with the provisions of Articles 8 and 9 in any of the following circumstances as long as the Employer treats all payments to similarly situated Participants on a reasonably consistent basis.

- (a) The Employer may delay payment if it reasonably anticipates that its deduction with respect to such payment would be limited or eliminated by the application of Code Section 162(m). Payment must be made during the Participant's first taxable year in which the Employer reasonably anticipates, or should reasonably anticipate, that if the payment is made during such year the deduction of such payment will not be barred by the application of Code Section 162(m) or during the period beginning with the Participant's Separation from Service and ending on the later of the last day of the Employer's taxable year in which the Participant separates from service or the 15th day of the third month following the Participant's Separation from Service. If a scheduled payment to a Participant is delayed in accordance with this Section 9.8(a), all scheduled payments to the Participant that could be delayed in accordance with this Section 9.8(a) will also be delayed.
- (b) The Employer may also delay payment if it reasonably anticipates that the making of the payment will violate federal securities laws or other applicable laws provided payment is made at the earliest date on which the Employer reasonably anticipates that the making of the payment will not cause such violation.
- (c) The Employer reserves the right to amend the Plan to provide for a delay in payment upon such other events and conditions as the Secretary of the Treasury may prescribe in generally applicable guidance published in the Internal Revenue Bulletin.

9.9 Permitted Acceleration of Payment. The Employer may permit acceleration of the time or schedule of any payment or amount scheduled to be paid pursuant to a payment under the Plan provided such acceleration would be permitted by the provisions of Reg. Sec. 1.409A-3(j)(4), including the following events:

- (a) **Domestic Relations Order.** A payment may be accelerated if such payment is made to an alternate payee pursuant to and following the receipt and qualification of a domestic relations order as defined in Code Section 414(p).
- (b) **Compliance with Ethics Agreements and Legal Requirements.** A payment may be accelerated as may be necessary to comply with ethics agreements with the Federal government or as may be reasonably necessary to avoid the violation of Federal, state, local or foreign ethics law or conflicts of laws, in accordance with the requirements of Code Section 409A.

- (c) **De Minimis Amounts.** A payment will be accelerated if (i) the amount of the payment is not greater than the applicable dollar amount under Code Section 402(g)(1)(B), (ii) at the time the payment is made the amount constitutes the Participant's entire interest under the Plan and all other plans that are aggregated with the Plan under Reg. Sec. 1.409A-1(c)(2).
- (d) **FICA Tax.** A payment may be accelerated to the extent required to pay the Federal Insurance Contributions Act tax imposed under Code Sections 3101, 3121(a) and 3121(v)(2) of the Code with respect to compensation deferred under the Plan (the "FICA Amount"). Additionally, a payment may be accelerated to pay the income tax on wages imposed under Code Section 3401 of the Code on the FICA Amount and to pay the additional income tax at source on wages attributable to the pyramiding Code Section 3401 wages and taxes. The total payment under this subsection (d) may not exceed the aggregate of the FICA Amount and the income tax withholding related to the FICA Amount.
- (e) **Section 409A Additional Tax.** A payment may be accelerated if the Plan fails to meet the requirements of Code Section 409A; provided that such payment may not exceed the amount required to be included in income as a result of the failure to comply with the requirements of Code Section 409A.
- (f) **Offset.** A payment may be accelerated in the Employer's discretion as satisfaction of a debt of the Participant to the Employer, where such debt is incurred in the ordinary course of the service relationship between the Participant and the Employer, the entire amount of the reduction in any of the Employer's taxable years does not exceed \$5,000, and the reduction is made at the same time and in the same amount as the debt otherwise would have been due and collected from the Participant.
- (g) **Other Events.** A payment may be accelerated in the Administrator's discretion in connection with such other events and conditions as permitted by Code Section 409A.

ARTICLE 10 – AMENDMENT AND TERMINATION

- 10.1 Amendment by Plan Sponsor.** The Plan Sponsor reserves the right to amend the Plan (for itself and each Employer) through action of its Board of Directors. No amendment can directly or indirectly deprive any current or former Participant or Beneficiary of all or any portion of his Account which had accrued and vested prior to the amendment.
- 10.2 Plan Termination Following Change in Control or Corporate Dissolution.** If so elected by the Plan Sponsor in 11.01 of the Adoption Agreement, the Plan Sponsor reserves the right to terminate the Plan and distribute all amounts credited to all Participant Accounts within the 30 days preceding or the twelve months following a Change in Control as determined in accordance with the rules set forth in Section 9.7. For this purpose, the Plan will be treated as terminated only if all agreements, methods, programs and other arrangements sponsored by the Related Employer immediately after the Change in Control which are treated as a single plan under Reg. Sec. 1.409A-1(c)(2) are also terminated so that all participants under the Plan and all similar arrangements are required to receive all amounts deferred under the terminated arrangements within twelve months of the date the Plan Sponsor irrevocably takes all necessary action to terminate the arrangements. In addition, the Plan Sponsor reserves the right to terminate the Plan within twelve months of a corporate dissolution taxed under Code Section 331 or with the approval of a bankruptcy court pursuant to 11 U. S. C. Section 503(b)(1)(A) provided that amounts deferred under the Plan are included in the gross incomes of Participants in the latest of (a) the calendar year in which the termination and liquidation occurs, (b) the first calendar year in which the amount is no longer subject to a substantial risk of forfeiture, or (c) the first calendar year in which payment is administratively practicable.
- 10.3 Other Plan Terminations.** The Plan Sponsor retains the discretion to terminate the Plan if (a) all arrangements sponsored by the Plan Sponsor that would be aggregated with any terminated arrangement under Code Section 409A and Reg. Sec. 1.409A-1(c)(2) are terminated, (b) no payments other than payments that would be payable under the terms of the arrangements if the termination had not occurred are made within twelve months of the termination of the arrangements, (c) all payments are made within twenty-four months of the date the Plan Sponsor takes all necessary action to irrevocably terminate and liquidate the arrangements, (d) the Plan Sponsor does not adopt a new arrangement that would be aggregated with any terminated arrangement under Code Section 409A and the regulations thereunder at any time within the three year period following the date of termination of the arrangement, and (e) the termination does not occur proximate to a downturn in the financial health of the Plan sponsor. The Plan Sponsor also reserves the right to amend the Plan to provide that termination of the Plan will occur under such conditions and events as may be prescribed by the Secretary of the Treasury in generally applicable guidance published in the Internal Revenue Bulletin.

10.1

ARTICLE 11 – THE TRUST

- 11.1 Establishment of Trust.** The Plan Sponsor may but is not required to establish a trust to hold amounts which the Plan Sponsor may contribute from time to time to correspond to some or all amounts credited to Participants under Section 6.2. In the event that the Plan Sponsor wishes to establish a trust to provide a source of funds for the payment of Plan benefits, any such trust shall be constructed to constitute an unfunded arrangement that does not affect the status of the Plan as an unfunded plan for purposes of Title I of ERISA and the Code. If the Plan Sponsor elects to establish a trust in accordance with Section 10.01 of the Adoption Agreement, the provisions of Sections 11.2 and 11.3 shall become operative.
- 11.2 Rabbi Trust.** Any trust established by the Plan Sponsor shall be between the Plan Sponsor and a trustee pursuant to a separate written agreement under which assets are held, administered and managed, subject to the claims of the Plan Sponsor's creditors in the event of the Plan Sponsor's insolvency. The trust is intended to be treated as a rabbi trust in accordance with existing guidance of the Internal Revenue Service, and the establishment of the trust shall not cause the Participant to realize current income on amounts contributed thereto. The Plan Sponsor must notify the trustee in the event of a bankruptcy or insolvency.
- 11.3 Investment of Trust Funds.** Any amounts contributed to the trust by the Plan Sponsor shall be invested by the trustee in accordance with the provisions of the trust and the instructions of the Administrator. Trust investments need not reflect the hypothetical investments selected by Participants under Section 7.1 for the purpose of adjusting Accounts and the earnings or investment results of the trust need not affect the hypothetical investment adjustments to Participant Accounts under the Plan.

ARTICLE 12 – PLAN ADMINISTRATION

12.1 Powers and Responsibilities of the Administrator. The Administrator has the full power and the full responsibility to administer the Plan in all of its details, subject, however, to the applicable requirements of ERISA. The Administrator's powers and responsibilities include, but are not limited to, the following:

- (a) To make and enforce such rules and procedures as it deems necessary or proper for the efficient administration of the Plan;
- (b) To interpret the Plan, its interpretation thereof to be final, except as provided in Section 12.2, on all persons claiming benefits under the Plan;
- (c) To decide all questions concerning the Plan and the eligibility of any person to participate in the Plan;
- (d) To administer the claims and review procedures specified in Section 12.2;
- (e) To compute the amount of benefits which will be payable to any Participant, former Participant or Beneficiary in accordance with the provisions of the Plan;
- (f) To determine the person or persons to whom such benefits will be paid;
- (g) To authorize the payment of benefits;
- (h) To comply with the reporting and disclosure requirements of Part 1 of Subtitle B of Title I of ERISA;
- (i) To appoint such agents, counsel, accountants, and consultants as may be required to assist in administering the Plan;
- (j) By written instrument, to allocate and delegate its responsibilities, including the formation of an Administrative Committee to administer the Plan.

12.2 Claims and Review Procedures.

(a) Claims Procedure.

If any person believes he is being denied any rights or benefits under the Plan, such person may file a claim in writing with the Administrator. If any such claim is wholly or partially denied, the Administrator will notify such person of its decision in writing. Such notification will contain (i) specific reasons for the denial, (ii) specific reference to pertinent Plan provisions, (iii) a description of any additional material or information necessary for such person to perfect such claim and an explanation of why such material or information is necessary, and (iv) a description of the Plan's review procedures and the time limits applicable to such procedures, including a statement of the person's right to bring a civil action following an adverse decision on review. If the claim involves a Disability, the denial must also include the standards that governed the decision, including the basis for disagreeing with any health care professionals, vocational professionals or the Social Security Administration as well as an explanation of the scientific or clinical judgement underlying the denial. Such notification will be given within 90 days (45 days in the case of a claim regarding Disability) after the claim is received by the Administrator. The Administrator may extend the period for providing the notification by 90 days (30 days in the case of a claim regarding Disability, which may be extended an additional 30 days) if special circumstances require an extension of time for processing the claim and if written notice of such extension and circumstance is given to such person within the initial 90 day period (45 day period in the case of a claim regarding Disability). If such notification is not given within such period, the claim will be considered denied as of the last day of such period and such person may request a review of his claim.

(b) Review Procedure.

Within 60 days (180 days in the case of a claim regarding Disability) after the date on which a person receives a written notification of denial of claim (or, if written notification is not provided, within 60 days (180 days in the case of a claim regarding Disability) of the date denial is considered to have occurred), such person (or his duly authorized representative) may (i) file a written request with the Administrator for a review of his denied claim and of pertinent documents and (ii) submit written issues and comments to the Administrator. The Administrator will notify such person of its decision in writing. Such notification will be written in a manner calculated to be understood by such person and will contain specific reasons for the decision as well as specific references to pertinent Plan provisions. The notification will explain that the person is entitled to receive, upon request and free of charge, reasonable access to and copies of all pertinent documents and has the right to bring a civil action following an adverse decision on review. The decision on review will be made within 60 days (45 days in the case of a claim regarding Disability). The Administrator may extend the period for making the decision on review by 60 days (45 days in the case of a claim regarding Disability) if special circumstances require an extension of time for processing the request such as an election by the Administrator to hold a hearing, and if written notice of such extension and circumstances is given to such person within the initial 60-day period (45 days in the case of a claim regarding Disability). If the decision on review is not made within such period, the claim will be considered denied.

If the claim is regarding Disability, and the determination of Disability has not been made by the Social Security Administration or the Railroad Retirement Board, the person may, upon written request and free of charge, also receive the identification of medical or vocational experts whose advice was obtained in connection with the denial of a claim regarding Disability, even if the advice was not relied upon.

Before issuing any decision with respect to a claim involving Disability, the Administrator will provide to the person, free of charge, the following information as soon as possible and sufficiently in advance of the date on which the response is required to be provided to the person to allow the person a reasonable opportunity to respond prior to the due date of the response:

- Any new or additional evidence considered, relied upon, or generated by the Administrator or other person making the decision; and
- A new or addition rationale if the decision will be based on that rationale.

(c) Exhaustion of Claims Procedures and Right to Bring Legal Claim.

No action at law or equity shall be brought more than one (1) year after the Administrator's affirmation of a denial of a claim, or, if earlier, more than four (4) years after the facts or events giving rising to the claimant's allegation(s) or claim(s) first occurred.

12.3 Plan Administrative Costs. All reasonable costs and expenses (including legal, accounting, and employee communication fees) incurred by the Administrator in administering the Plan shall be paid by the Plan to the extent not paid by the Employer.

ARTICLE 13 – MISCELLANEOUS

- 13.1 Unsecured General Creditor of the Employer.** Participants and their Beneficiaries, heirs, successors and assigns shall have no legal or equitable rights, interests or claims in any property or assets of the Employer. For purposes of the payment of benefits under the Plan, any and all of the Employer's assets shall be, and shall remain, the general, unpledged, unrestricted assets of the Employer. Each Employer's obligation under the Plan shall be merely that of an unfunded and unsecured promise to pay money in the future.
- 13.2 Employer's Liability.** Each Employer's liability for the payment of benefits under the Plan shall be defined only by the Plan and by the deferral agreements entered into between a Participant and the Employer. An Employer shall have no obligation or liability to a Participant under the Plan except as provided by the Plan and a deferral agreement or agreements. An Employer shall have no liability to Participants employed by other Employers.
- 13.3 Limitation of Rights.** Neither the establishment of the Plan, nor any amendment thereof, nor the creation of any fund or account, nor the payment of any benefits, will be construed as giving to the Participant or any other person any legal or equitable right against the Employer, the Plan or the Administrator, except as provided herein; and in no event will the terms of employment or service of the Participant be modified or in any way affected hereby.
- 13.4 Anti-Assignment.** Except as may be necessary to fulfill a domestic relations order within the meaning of Code Section 414(p), none of the benefits or rights of a Participant or any Beneficiary of a Participant shall be subject to the claim of any creditor. In particular, to the fullest extent permitted by law, all such benefits and rights shall be free from attachment, garnishment, or any other legal or equitable process available to any creditor of the Participant and his or her Beneficiary. Neither the Participant nor his or her Beneficiary shall have the right to alienate, anticipate, commute, pledge, encumber, or assign any of the payments which he or she may expect to receive, contingently or otherwise, under the Plan, except the right to designate a Beneficiary to receive death benefits provided hereunder. Notwithstanding the preceding, the benefit payable from a Participant's Account may be reduced, at the discretion of the administrator, to satisfy any debt or liability to the Employer.

- 13.5 Facility of Payment.** If the Administrator determines, on the basis of medical reports or other evidence satisfactory to the Administrator, that the recipient of any benefit payments under the Plan is incapable of handling his affairs by reason of minority, illness, infirmity or other incapacity, the Administrator may direct the Employer to disburse such payments to a person or institution designated by a court which has jurisdiction over such recipient or a person or institution otherwise having the legal authority under State law for the care and control of such recipient. The receipt by such person or institution of any such payments therefore, and any such payment to the extent thereof, shall discharge the liability of the Employer, the Plan and the Administrator for the payment of benefits hereunder to such recipient.
- 13.6 Notices.** Any notice or other communication to the Employer or Administrator in connection with the Plan shall be deemed delivered in writing if addressed to the Plan Sponsor at the address specified in Section 1.03 of the Adoption Agreement and if either actually delivered at said address or, in the case of a letter, five (5) business days shall have elapsed after the same shall have been deposited in the United States mails, first-class postage prepaid and registered or certified.
- 13.7 Tax Withholding.** If the Employer concludes that tax is owing with respect to any deferral or payment hereunder, the Employer shall withhold such amounts from any payments due the Participant or from amounts deferred, as permitted by law, or otherwise make appropriate arrangements with the Participant or his Beneficiary for satisfaction of such obligation. Tax, for purposes of this Section 13.7 means any federal, state, local or any other governmental income tax, employment or payroll tax, excise tax, or any other tax or assessment owing with respect to amounts deferred, any earnings thereon, and any payments made to Participants under the Plan.
- 13.8 Indemnification.**
- (a) Each Indemnitee (as defined in Section 13.8(e)) shall be indemnified and held harmless by the Employer for all actions taken by him and for all failures to take action (regardless of the date of any such action or failure to take action), to the fullest extent permitted by the law of the jurisdiction in which the Employer is incorporated, against all expense, liability, and loss (including, without limitation, attorneys' fees, judgments, fines, taxes, penalties, and amounts paid or to be paid in settlement) reasonably incurred or suffered by the Indemnitee in connection with any Proceeding (as defined in Subsection (e)). No indemnification pursuant to this Section shall be made, however, in any case where (1) the act or failure to act giving rise to the claim for indemnification is determined by a court to have constituted willful misconduct or recklessness or (2) there is a settlement to which the Employer does not consent.

- (b) The right to indemnification provided in this Section shall include the right to have the expenses incurred by the Indemnitee in defending any Proceeding paid by the Employer in advance of the final disposition of the Proceeding, to the fullest extent permitted by the law of the jurisdiction in which the Employer is incorporated; provided that, if such law requires, the payment of such expenses incurred by the Indemnitee in advance of the final disposition of a Proceeding shall be made only on delivery to the Employer of an undertaking, by or on behalf of the Indemnitee, to repay all amounts so advanced without interest if it shall ultimately be determined that the Indemnitee is not entitled to be indemnified under this Section or otherwise.
- (c) Indemnification pursuant to this Section shall continue as to an Indemnitee who has ceased to be such and shall inure to the benefit of his heirs, executors, and administrators. The Employer agrees that the undertakings made in this Section shall be binding on its successors or assigns and shall survive the termination, amendment or restatement of the Plan.
- (d) The foregoing right to indemnification shall be in addition to such other rights as the Indemnitee may enjoy as a matter of law or by reason of insurance coverage of any kind and is in addition to and not in lieu of any rights to indemnification to which the Indemnitee may be entitled pursuant to the by-laws of the Employer.
- (e) For the purposes of this Section, the following definitions shall apply:
 - (1) "Indemnitee" shall mean each person serving as an Administrator (or any other person who is an employee, director, or officer of the Employer) who was or is a party to, or is threatened to be made a party to, or is otherwise involved in, any Proceeding, by reason of the fact that he is or was performing administrative functions under the Plan.
 - (2) "Proceeding" shall mean any threatened, pending, or completed action, suit, or proceeding (including, without limitation, an action, suit, or proceeding by or in the right of the Employer), whether civil, criminal, administrative, investigative, or through arbitration.

- 13.9 Successors.** The provisions of the Plan shall bind and inure to the benefit of the Plan Sponsor, the Employer and their successors and assigns and the Participant and the Participant's designated Beneficiaries.
- 13.10 Disclaimer.** It is the Plan Sponsor's intention that the Plan comply with the requirements of Code Section 409A. Neither the Plan Sponsor nor the Employer shall have any liability to any Participant should any provision of the Plan fail to satisfy the requirements of Code Section 409A.
- 13.11 Governing Law.** The Plan will be construed, administered and enforced according to the laws of the State specified by the Plan Sponsor in Section 12.01 of the Adoption Agreement.

ADOPTION AGREEMENT

1.01 PREAMBLE

By the execution of this Adoption Agreement the Plan Sponsor hereby [complete (a) or (b)]

- (a) adopts a new plan as of _____ [month, day, year]
- (b) amends and restates its existing plan as of January 1, 2019 [month, day, year] which is the Amendment Restatement Date. Except as otherwise provided in Appendix A, all amounts deferred under the Plan prior to the Amendment Restatement Date shall be governed by the terms of the Plan as in effect on the day before the Amendment Restatement Date.

Original Effective Date: April 15, 2012 [month, day, year]

Pre-409A Grandfathering: Yes No

1.02 PLAN

Plan Name: CBRE Deferred Compensation Plan

Plan Year: January 1 – December 31

1.03 PLAN SPONSOR

Name: CBRE Services, Inc.

Address: 2100 Ross Avenue, Suite 1600, Dallas, TX 75201

Phone #: _____

EIN: 52-1616016

Fiscal Yr: _____

Is stock of the Plan Sponsor, any Employer or any Related Employer publicly traded on an established securities market?

Yes No

1.04 EMPLOYER

The following entities have been authorized by the Plan Sponsor to participate in and have adopted the Plan (insert "Not Applicable" if none have been authorized):

<u>Entity</u>	<u>Publicly Traded on Est. Securities</u>	
	<u>Market</u>	
	<u>Yes</u>	<u>No</u>
<u>CBRE Group, Inc.</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>All direct and indirect subsidiaries of</u> <u>CBRE Group, Inc.</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>_____</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>_____</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>_____</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>_____</u>	<input type="checkbox"/>	<input type="checkbox"/>

1.05 ADMINISTRATOR

The Plan Sponsor has designated the following party or parties to be responsible for the administration of the Plan:

Name: Chief Executive Officer of CBRE Services, Inc. or a committee consisting of three or more individuals selected by the Chief Executive Officer of CBRE Services, Inc.
Address: _____

Note: The Administrator is the person or persons designated by the Plan Sponsor to be responsible for the administration of the Plan. Neither Fidelity Employer Services Company nor any other Fidelity affiliate can be the Administrator.

1.06 KEY EMPLOYEE DETERMINATION DATES

The Employer has designated _____ as the Identification Date for purposes of determining Key Employees.

In the absence of a designation, the Identification Date is December 31.

The Employer has designated _____ as the effective date for purposes of applying the six month delay in distributions to Key Employees.

In the absence of a designation, the effective date is the first day of the fourth month following the Identification Date.

2.01 PARTICIPATION

- (a) Employees [complete (i), (ii) or (iii)]
 - (i) Eligible Employees are selected by the Employer.
 - (ii) Eligible Employees are those employees of the Employer who satisfy the following criteria:
A select group of management or highly compensated employees as determined each year by the Administrator

 - (iii) Employees are not eligible to participate.
- (b) Directors [complete (i), (ii) or (iii)]
 - (i) All Directors are eligible to participate.
 - (ii) Only Directors selected by the Administrator each year are eligible to participate.
 - (iii) Directors are not eligible to participate.
- (c) Effective as of January 1, 2019, Qualified Real Estate Agents as selected by the Administrator each year are eligible to participate

3.01 COMPENSATION

For purposes of determining Participant contributions under Article 4 and Employer contributions under Article 5, Compensation shall be defined in the following manner [complete (a) or (b) and select (c) and/or (d), if applicable]:

- (a) Compensation is defined as:

Base Compensation
Annual Bonus
Commissions

- (b) Compensation as defined in ___[insert name of qualified plan] without regard to the limitation in Section 401(a)(17) of the Code for such Plan Year.

- (c) Director Compensation is defined as:

Retainer
Meeting Fees

- (d) Compensation shall, for all Plan purposes, be limited to \$___.

- (e) Not Applicable.

3.02 BONUSES

Compensation, as defined in Section 3.01 of the Adoption Agreement, includes the following type of bonuses that will be the subject of a separate deferral election:

<u>Type</u>	<u>Will be treated as Performance Based Compensation</u>	
	<u>Yes</u>	<u>No</u>
<u>Annual Bonus</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>

- Not Applicable.

4.01 PARTICIPANT CONTRIBUTIONS

If Participant contributions are permitted, complete (a), (b), and (c). Otherwise complete (d).

(a) Amount of Deferrals

A Participant may elect within the period specified in Section 4.01(b) of the Adoption Agreement to defer the following amounts of remuneration. For each type of remuneration listed, complete “dollar amount” and / or “percentage amount”.

(i) Compensation Other than Bonuses [do not complete if you complete (iii)]

Type of Remuneration	Dollar Amount		% Amount		Increment
	Min	Max	Min	Max	
(a) Base Compensation			1%	50%	1%
(b) Commissions			1%	50%	1%
(c)					

Note: The increment is required to determine the permissible deferral amounts. For example, a minimum of 0% and maximum of 20% with a 5% increment would allow an individual to defer 0%, 5%, 10%, 15% or 20%.

(ii) Bonuses [do not complete if you complete (iii)]

Type of Bonus	Dollar Amount		% Amount		Increment
	Min	Max	Min	Max	
(a) Annual Bonus			1	100%	1%
(b)					
(c)					

(iii) Compensation [do not complete if you completed (i) and (ii)]

Dollar Amount		% Amount		Increment
Min	Max	Min	Max	

(iv) Director Compensation

Type of Compensation	Dollar Amount		% Amount		Increment
	Min	Max	Min	Max	
Annual Retainer			1%	100%	1%
Meeting Fees			1%	100%	1%
Other:					
Other:					

(b) Election Period

(i) Performance Based Compensation

A special election period

Does Does Not

apply to each eligible type of performance based compensation referenced in Section 3.02 of the Adoption Agreement.

The special election period, if applicable, will be determined by the Employer.

(ii) Newly Eligible Participants

An employee who is classified or designated as an Eligible Employee during a Plan Year

May May Not

elect to defer Compensation earned during the remainder of the Plan Year by completing a deferral agreement within the 30 day period beginning on the date he is eligible to participate in the Plan.

(c) Revocation of Deferral Agreement

A Participant's deferral agreement

Will
 Will Not

be cancelled for the remainder of any Plan Year during which he receives a hardship distribution of elective deferrals from a qualified cash or deferred arrangement maintained by the Employer to the extent necessary to satisfy the requirements of Reg. Sec. 1.401(k)-1(d)(3). If cancellation occurs, the Participant may resume participation in accordance with Article 4 of the Plan.

(d) No Participant Contributions

Participant contributions are not permitted under the Plan.

5.01 EMPLOYER CONTRIBUTIONS

If Employer contributions are permitted, complete (a) and/or (b). Otherwise complete (c).

(a) Matching Contributions

(i) Amount

For each Plan Year, the Employer shall make a Matching Contribution on behalf of each Participant who defers Compensation for the Plan Year and satisfies the requirements of Section 5.01(a)(ii) of the Adoption Agreement equal to [complete the ones that are applicable]:

- (A) _____ [insert percentage] of the Compensation the Participant has elected to defer for the Plan Year
- (B) An amount determined by the Employer in its sole discretion
- (C) Matching Contributions for each Participant shall be limited to \$____and/or ____% of Compensation.
- (D) Other:

- (E) Not Applicable [Proceed to Section 5.01(b)]

(ii) Eligibility for Matching Contribution

A Participant who defers Compensation for the Plan Year shall receive an allocation of Matching Contributions determined in accordance with Section 5.01(a)(i) provided he satisfies the following requirements [complete the ones that are applicable]:

- (A) Describe requirements:

- (B) Is selected by the Employer in its sole discretion to receive an allocation of Matching Contributions
- (C) No requirements

(iii) Time of Allocation

Matching Contributions, if made, shall be treated as allocated [select one]:

- (A) As of the last day of the Plan Year
- (B) At such times as the Employer shall determine in its sole discretion
- (C) At the time the Compensation on account of which the Matching Contribution is being made would otherwise have been paid to the Participant
- (D) Other:

(b) Other Contributions

(i) Amount

The Employer shall make a contribution on behalf of each Participant who satisfies the requirements of Section 5.01(b)(ii) equal to [complete the ones that are applicable]:

- (A) An amount equal to _____ [insert number] % of the Participant's Compensation
- (B) An amount determined by the Employer in its sole discretion
- (C) Contributions for each Participant shall be limited to \$ _____
- (D) Other:

- (E) Not Applicable [Proceed to Section 6.01]

(ii) Eligibility for Other Contributions

A Participant shall receive an allocation of other Employer contributions determined in accordance with Section 5.01(b)(i) for the Plan Year if he satisfies the following requirements [complete the one that is applicable]:

(A) Describe requirements:

(B) Is selected by the Employer in its sole discretion to receive an allocation of other Employer contributions

(C) No requirements

(iii) Time of Allocation

Employer contributions, if made, shall be treated as allocated [select one]:

(A) As of the last day of the Plan Year

(B) At such time or times as the Employer shall determine in its sole discretion

(C) Other:

(c) No Employer Contributions

Employer contributions are not permitted under the Plan.

6.01 DISTRIBUTIONS

The timing and form of payment of distributions made from the Participant's vested Account shall be made in accordance with the elections made in this Section 6.01 of the Adoption Agreement except when Section 9.6 of the Plan requires a six month delay for certain distributions to Key Employees of publicly traded companies.

(a) Timing of Distributions

- (i) All distributions shall commence in accordance with the following [choose one]:
 - (A) As soon as administratively feasible following the distribution event but in no event later than the time prescribed by Treas. Reg. Sec. 1.409A-3(d).
 - (B) Monthly on specified day ____ [insert day]
 - (C) Annually on specified month and day ____ [insert month and day]
 - (D) Calendar quarter on specified month and day [____month of quarter (insert 1,2 or 3); ____ day (insert day)]

- (ii) The timing of distributions as determined in Section 6.01(a)(i) shall be modified by the adoption of:
 - (A) Event Delay – Distribution events other than those based on Specified Date or Specified Age will be treated as not having occurred for 6 months [insert number of months].
 - (B) Hold Until Next Year – Distribution events other than those based on Specified Date or Specified Age will be treated as not having occurred for twelve months from the date of the event if payment pursuant to Section 6.01(a)(i) will thereby occur in the next calendar year or on the first payment date in the next calendar year in all other cases.
 - (C) Immediate Processing – The timing method selected by the Plan Sponsor under Section 6.01(a)(i) shall be overridden for the following distribution events [insert events]:

 - (D) Not applicable.

(b) Distribution Events

Participants may elect one of the following payment events and the associated form or forms of payment. For installments, insert the range of available periods (e.g., 5-15) or insert the periods available (e.g., 5,7,9).

		<u>Lump Sum</u>	<u>Installments</u>
(i)	<input checked="" type="checkbox"/> Specified Date	<u>x</u>	<u>2-5</u> years
(ii)	<input type="checkbox"/> Specified Age		____ years
(iii)	<input type="checkbox"/> Separation from Service		____ years
(iv)	<input checked="" type="checkbox"/> Separation from Service plus 6 months	<u>x</u>	<u>2-5</u> years
(v)	<input type="checkbox"/> Separation from Service plus ____ months [not to exceed ____ months]		____ years
(vi)	<input type="checkbox"/> Retirement		____ years
(vii)	<input type="checkbox"/> Retirement plus 6 months		____ years
(viii)	<input type="checkbox"/> Retirement plus ____ months [not to exceed ____ months]		____ years
(ix)	<input type="checkbox"/> Disability		____ years
(x)	<input type="checkbox"/> Death		____ years
(xi)	<input type="checkbox"/> Change in Control		____ years

The minimum deferral period for Specified Date or Specified Age event shall be two (2) years.

Installments may be paid [select each that applies]

- Monthly
- Quarterly
- Annually

- (c) Specified Date and Specified Age elections may not extend beyond age Not Applicable [insert age or "Not Applicable" if no maximum age applies].

(d) Payment Election Override

Payment of the remaining vested balance of the Participant's Account will automatically occur at the time specified in Section 6.01(a) of the Adoption Agreement in the form indicated upon the earliest to occur of the following events [check each event that applies and for each event include only a single form of payment]:

<u>EVENTS</u>		<u>FORM OF PAYMENT</u>
<input type="checkbox"/> Separation from Service plus six months	_____ Lump sum	_____ Installments
<input checked="" type="checkbox"/> Separation from Service before Retirement plus six (6) months	x _____ Lump sum	_____ Installments
<input type="checkbox"/> Death	_____ Lump sum	_____ Installments
<input type="checkbox"/> Disability	_____ Lump sum	_____ Installments
<input type="checkbox"/> Not Applicable		

The provisions of this Section 6.01(d) shall not apply to Participants who are non-employee Directors.

(e) Involuntary Cashouts

- If the Participant's vested Account at the time of his Separation from Service does not exceed \$_____ distribution of the vested Account shall automatically be made in the form of a single lump sum in accordance with Section 9.5 of the Plan.
- There are no involuntary cashouts.

(f) Retirement

- Retirement shall be defined as a Separation from Service that occurs on or after the Participant [insert description of requirements]:
- Attainment of age 62 and completion of ten (10) years of service (using the elapsed time method from date of hire)
- No special definition of Retirement applies.

(g) Distribution Election Change

A Participant

- Shall
 Shall Not

be permitted to modify a scheduled distribution date and/or payment option in accordance with Section 9.2 of the Plan.

A Participant shall generally be permitted to elect such modification _____ number of times.

Administratively, allowable distribution events will be modified to reflect all options necessary to fulfill the distribution change election provision.

(h) Frequency of Elections

The Plan Sponsor

- Has
 Has Not

Elected to permit annual elections of a time and form of payment for amounts deferred under the Plan. If a single election of a time and/or form of payment is required, the Participant will make such election at the time he first completes a deferral agreement which, in all cases, will be no later than the time required by Reg. Sec. 1.409A-2.

7.01 **VESTING**

(a) Matching Contributions

The Participant's vested interest in the amount credited to his Account attributable to Matching Contributions shall be based on the following schedule:

<input type="checkbox"/>	Years of Service	Vesting %	(insert '100' if there is immediate vesting)
	0		
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		

Other:

Class year vesting applies.

Not applicable.

(b) Other Employer Contributions

The Participant's vested interest in the amount credited to his Account attributable to Employer contributions other than Matching Contributions shall be based on the following schedule:

<input type="checkbox"/>	Years of Service	Vesting %	(insert '100' if there is immediate vesting)
	0		
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		

Other:

Class year vesting applies.

Not applicable.

(c) Acceleration of Vesting

A Participant's vested interest in his Account will automatically be 100% upon the occurrence of the following events: [select the ones that are applicable]:

- (i) Death
- (ii) Disability
- (iii) Change in Control
- (iv) Eligibility for Retirement
- (v) Other: _____

- (vi) Not applicable.

(d) Years of Service

(i) A Participant's Years of Service shall include all service performed for the Employer and

- Shall
- Shall Not

include service performed for the Related Employer.

(ii) Years of Service shall also include service performed for the following entities:

(iii) Years of Service shall be determined in accordance with (select one)

- (A) The elapsed time method in Treas. Reg. Sec. 1.410(a)-7
- (B) The general method in DOL Reg. Sec. 2530.200b-1 through b-4
- (C) The Participant's Years of Service credited under [insert name of plan]
- (D) Other: _____

(iv) Not applicable.

8.01 UNFORESEEABLE EMERGENCY

(a) A withdrawal due to an Unforeseeable Emergency as defined in Section 2.24:

Will

Will Not [if Unforeseeable Emergency withdrawals are not permitted, proceed to Section 9.01]

be allowed.

(b) Upon a withdrawal due to an Unforeseeable Emergency, a Participant's deferral election for the remainder of the Plan Year:

Will

Will Not

be cancelled. If cancellation occurs, the Participant may resume participation in accordance with Article 4 of the Plan.

9.01 **INVESTMENT DECISIONS**

Investment decisions regarding the hypothetical amounts credited to a Participant's Account shall be made by [select one]:

- (a) The Participant or his Beneficiary
- (b) The Employer

10.01 **TRUST**

The Employer [select one]:

- Does
- Does Not

intend to establish a rabbi trust as provided in Article 11 of the Plan.

11.01 TERMINATION UPON CHANGE IN CONTROL

The Plan Sponsor

- Reserves
- Does Not Reserve

the right to terminate the Plan and distribute all vested amounts credited to Participant Accounts upon a Change in Control as described in Section 9.7.

11.02 AUTOMATIC DISTRIBUTION UPON CHANGE IN CONTROL

Distribution of the remaining vested balance of each Participant's Account

- Shall
- Shall Not

automatically be paid as a lump sum payment upon the occurrence of a Change in Control as provided in Section 9.7.

11.03 CHANGE IN CONTROL

A Change in Control for Plan purposes includes the following [select each definition that applies]:

- (a) A change in the ownership of the Employer as described in Section 9.7(c) of the Plan.
- (b) A change in the effective control of the Employer as described in Section 9.7(d) of the Plan.
- (c) A change in the ownership of a substantial portion of the assets of the Employer as described in Section 9.7(e) of the Plan.
- (d) Not Applicable.

12.01 **GOVERNING STATE LAW**

The laws of Delaware shall apply in the administration of the Plan to the extent not preempted by ERISA.

EXECUTION PAGE

The Plan Sponsor has caused this Adoption Agreement to be executed this 19th day of Nov, 2018.

PLAN SPONSOR: CBRE

By: /s/ J. Christopher Kirk

Title: Chief Administrative Officer

APPENDIX A

SPECIAL EFFECTIVE DATES

The plan document effective April 15, 2012, as amended prior to January 1, 2019, is hereby incorporated by reference as if fully rewritten herein.

SUBSIDIARIES OF CBRE GROUP, INC.

At December 31, 2018

The following is a list of subsidiaries of the company as of December 31, 2018, omitting subsidiaries which, considered in the aggregate as if they were a single subsidiary, would not constitute a significant subsidiary.

<u>NAME</u>	<u>State (or Country) of Incorporation</u>
CBRE Services, Inc.	Delaware
CB/TCC, LLC	Delaware
CBRE, Inc.	Delaware
CBRE Partner, Inc.	Delaware
CBRE Capital Markets, Inc.	Texas
CB/TCC Global Holdings Limited	United Kingdom
CBRE Holdings Limited	United Kingdom
CBRE Limited	United Kingdom
CBRE Finance Europe LLP	United Kingdom
CBRE Global Holdings SARL	Luxembourg
CBRE Luxembourg Holdings SARL	Luxembourg
CBRE Global Acquisition Company SARL	Luxembourg
Relam Amsterdam Holdings	The Netherlands
CBRE Limited Partnership	Jersey

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors
CBRE Group, Inc.:

We consent to the incorporation by reference in the registration statements (Nos. 333-116398, 333-119362, 333-161744, 333-181235 and 333-218113) on Form S-8 and No. 333-222163 on Form S-3 of CBRE Group, Inc. of our report dated March 1, 2019, with respect to the consolidated balance sheets of CBRE Group, Inc. and subsidiaries as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive income, cash flows and equity for each of the years in the three-year period ended December 31, 2018, and the related notes and financial statement schedule II, and the effectiveness of internal control over financial reporting as of December 31, 2018, which report appears in the December 31, 2018 annual report on Form 10-K of CBRE Group, Inc. Our report dated March 1, 2019, on the effectiveness of internal control over financial reporting as of December 31, 2018, contains an explanatory paragraph that states our audit of internal control over financial reporting of CBRE Group, Inc. excluded an evaluation of FacilitySource (the Acquired Business) as management excluded the Acquired Business from its assessment of the effectiveness of CBRE Group, Inc.'s internal control over financial reporting as of December 31, 2018. Additionally, our report refers to a change in method of accounting for revenue from contracts with customers due to the adoption of Accounting Standards Codification Topic 606, *Revenue from Contracts with Customers*.

/s/ KPMG LLP

Los Angeles, California
March 1, 2019

CERTIFICATIONS

I, Robert E. Sulentic, certify that:

- 1) I have reviewed this annual report on Form 10-K of CBRE Group, Inc.;
- 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 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 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: March 1, 2019

/s/ ROBERT E. SULENTIC

Robert E. Sulentic
President and Chief Executive Officer

CERTIFICATIONS

I, James R. Groch, certify that:

- 1) I have reviewed this annual report on Form 10-K of CBRE Group, Inc.;
- 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 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 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: March 1, 2019

/s/ JAMES R. GROCH
James R. Groch
Chief Financial Officer

CERTIFICATIONS PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002
(18 U.S.C. SECTION 1350)

The undersigned, Robert E. Sulentic, Chief Executive Officer, and James R. Groch, Chief Financial Officer of CBRE Group, Inc. (the "Company"), hereby certify as of the date hereof, solely for the purposes of 18 U.S.C. §1350, that:

- (i) the Annual Report on Form 10-K for the period ended December 31, 2018, of the Company (the "Report") fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934; and
- (ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company at the dates and for the periods indicated.

Dated: March 1, 2019

/s/ ROBERT E. SULENTIC

Robert E. Sulentic
President and Chief Executive Officer

/s/ JAMES R. GROCH

James R. Groch
Chief Financial Officer

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Report or as a separate disclosure document.