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, 2019

OR

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

For the Transition Period from ______________ to ______________

Commission File Number 001-32205

CBRE

CBRE GROUP, INC.
(Exact name of registrant as specified in its charter)

Delaware	**94-3391143**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
400 South Hope Street, 25th Floor Los Angeles, California	**90071**
(Address of principal executive offices)	**(Zip Code)**

(213) 613-3333
(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class A Common Stock, $0.01 par value per share	"CBRE"	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:
None

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 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 28, 2019, the aggregate market value of Class A Common Stock held by non-affiliates of the registrant was $17.3 billion based upon the last sales price on June 28, 2019 on the New York Stock Exchange of $51.30 for the registrant's Class A Common Stock.

As of February 14, 2020, the number of shares of Class A Common Stock outstanding was 334,790,842.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the proxy statement for the registrant's 2020 Annual Meeting of Stockholders to be held May 14, 2020 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 2019 revenue, with leading global market positions in our leasing, property sales, occupier outsourcing and valuation businesses. As of December 31, 2019, we operated in more than 530 offices worldwide and have more than 100,000 employees, excluding independent affiliates. We serve clients in more than 100 countries.

Our business is focused on providing services to real estate occupiers and investors. 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, mortgage origination, sales and servicing), leasing, investment management, property management, valuation and development services, among others. We provide services under the following brand names: "CBRE" (real estate advisory and outsourcing services); "CBRE Global Investors" (investment management); "Trammell Crow Company" (U.S. development); "Telford Homes" (U.K. development) and "Hana" (flexible-space solutions).

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 substantial share of this growing market opportunity. 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 2019, 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 2019 we were ranked #146 on the *Fortune* 500. We have been voted the most recognized commercial real estate brand in the Lipsey Company survey for 19 years in a row (including 2020). We have also been rated a World's Most Ethical Company by the Ethisphere Institute for seven consecutive years (including 2020), and are included in the Dow Jones World Sustainability Index and the Bloomberg Gender Equality Index.

CBRE History

We will mark our 114th year of continuous operations in 2020, 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 2019 revenue) through organic growth and strategic acquisitions, including our recent acquisition of Telford Homes Plc, which closed in October 2019.

Our Business Segments and Primary 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.

We report our operations through the following business segments: (1) Advisory Services, (2) Global Workplace Solutions and (3) Real Estate Investments.

Advisory Services

Our Advisory Services segment provides a comprehensive range of services globally, including property leasing, capital markets (property sales and mortgage origination, sales and servicing), property management, project management services and valuation services. Most of our Advisory Services operations are conducted through our indirect wholly-owned subsidiary CBRE, Inc. Our mortgage loan origination, sales and servicing operations, the vast majority of which are in the U.S., are conducted exclusively through our indirect wholly-owned subsidiary operating under the name CBRE Capital Markets, Inc., or CBRE Capital Markets, and its affiliates.

The primary services within Advisory Services are further described below.

Leasing Services

We provide strategic advice and execution for owners/investors, and occupiers/tenants of real estate, primarily in connection with the leasing of office, industrial and retail space. In 2019, we negotiated leases valued at approximately $168.2 billion globally. While the majority of our leasing revenue is reported in the Advisory Services segment, we do earn leasing revenue for certain contractual occupier clients in the Global Workplace Solutions segment that arises as a direct result of a business relationship with that segment.

We generate significant business from account-based occupier clients, where we are retained to negotiate leases for all or a portion of their portfolio. This results in recurring revenue over time. We believe we are the market leader for leasing services in most leading U.S. metropolitan statistical areas (as defined by the U.S. Census Bureau), including Atlanta, Austin, Boston, Chicago, Dallas, Denver, Houston, Los Angeles, Miami/South Florida, New York, Philadelphia, Phoenix, Portland and Seattle.

Capital Markets

We offer clients property sales and mortgage services. The tight integration of these services helps to meet marketplace demand for comprehensive capital markets solutions. During 2019, we closed approximately $322.6 billion of capital markets transactions globally, including $264.6 billion of property sales transactions and $58.0 billion of mortgage originations and loan sales.

We are the leading property sales advisor globally. In the United States, we accounted for approximately 17% of investment sales transactions greater than $2.5 million across all property types in 2019, according to Real Capital Analytics. Our mortgage brokerage professionals arrange, originate and service commercial mortgage loans through relationships established with investment banking firms, national and regional banks, credit companies, insurance companies, U.S. Government-Sponsored Enterprises, or GSEs, and pension funds.

Globally, our loan origination and sales volume in 2019 was $58.0 billion, including approximately $19.5 billion for U.S. 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 to be secured by the loan. We also oversee a loan servicing portfolio, which totaled approximately $230.1 billion globally at year-end 2019.

In many countries that we operate in (including the United States), 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 data/information, technology, branding and marketing.

Property and Project Management Services

We provide property management services on a contractual basis, primarily for owners of and investors in office, industrial and retail properties. These services include construction management, marketing, building engineering, accounting and financial services. As of December 31, 2019, we managed 2.6 billion square feet of properties globally for property owners/investors. 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.

Project management services are provided to owners, investors and occupiers of real estate in local markets. 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. While the majority of our project management revenue is reported in our Global Workplace Solutions segment, we also report one-off and non-contractual project management revenue in our Advisory Services segment. In 2019, project management revenue in our Advisory Services segment represented approximately 33% of total project management revenue for CBRE.

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 2019, we completed over 259,000 valuation, appraisal and advisory assignments, excluding residential valuations in Asia Pacific.

Global Workplace Solutions

Our Global Workplace Solutions segment provides a broad suite of integrated, contractually-based outsourcing services globally for occupiers of real estate, including facilities management, project management and transaction services (leasing and sales).

We believe the outsourcing of corporate real estate services is a long-term trend in our industry, with multi-national corporations, and other large occupiers of space utilizing global, full-service real estate firms to achieve better workplaces for their people, while attempting to lower their cost of occupancy. We typically enter into multi-year, often multi-service, outsourcing contracts with services delivered via dedicated account teams and/or an on-demand basis. The key outsourcing services offered through this business segment are described below.

Facilities Management Services

Facilities Management involves the day-to-day management of client-occupied space for traditional office space, such as headquarter buildings, regional offices and administrative offices, as well as facilities serving specialized industries, such as data centers, life science and medical facilities, distribution warehouses, government facilities and retail stores. 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-fee unit prices 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. We furnish facilities management services

to clients with single or multiple-location assets as well as regional, national and global portfolios. As of December 31, 2019, we managed approximately 4.2 billion square feet of facilities on behalf of occupiers.

Project Management Services

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, lump sum 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. In 2019, we were responsible for implementing project management contracts valued at approximately $124.3 billion. While the majority of our project management revenue is reported in our Global Workplace Solutions segment, as previously mentioned, we also report project management revenue in our Advisory Services segment. In 2019, project management revenue in our Global Workplace Solutions segment represented approximately 67% of total project management revenue for CBRE.

Transaction Services

We provide strategic advice and execution for occupiers of real estate in connection with the leasing, sale or acquisition of office, industrial and retail space. Within the Global Workplace Solutions business, transaction services are performed for account-based clients, often as a key part of an integrated suite of commercial real estate services (with leasing being the most meaningful revenue stream included in our Global Workplace Solutions revenue). In 2019, leasing revenue included in our Global Workplace Solutions revenue represented approximately 3% of global leasing revenue for CBRE.

Real Estate Investments

Our Real Estate Investments segment is comprised of investment management services provided globally, development services in the United States and United Kingdom and a service designed to help property occupiers and owners meet the growing demand for flexible office space solutions on a global basis.

Investment Management Services

Investment management services are conducted through our indirect wholly-owned subsidiary, CBRE Global Investors, LLC and its global affiliates. 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, infrastructure, master limited partnerships and other assets. 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 $112.9 billion at December 31, 2019 as compared to $105.5 billion at December 31, 2018, an increase of $7.4 billion ($7.3 billion in local currency).

Development Services

Development services are conducted through our indirect wholly-owned subsidiary Trammell Crow Company, LLC, which provides commercial real estate development services in the United States, and Telford Homes Plc, a developer of residential multi-family properties in the United Kingdom.

Trammell Crow Company pursues opportunistic, risk-mitigated development and investment strategies for users of and investors in commercial real estate, as well as for its own account. The company is active in industrial, office and retail properties; healthcare facilities of all types (medical office buildings, hospitals and ambulatory surgery centers); and residential multi-family/mixed-use projects. Trammell Crow Company is compensated by 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.

Telford Homes is a developer of residential-led, mixed-use sites in locations across London, where the need for homes exceeds supply. In recent years, Telford has undertaken a strategic shift to focus on the growing build-to-rent/multifamily market and is pursuing such opportunities with a number of third-party investors.

At December 31, 2019, we had $13.0 billion of development projects in process, and a development pipeline (prospective projects that we estimate have a greater than 50% chance of closing or where land has been acquired and the projected construction start date is more than one year out) totaled $5.8 billion at December 31, 2019.

Flexible-Space Solutions

Flexible-space solutions operations are conducted through our indirect wholly-owned subsidiary, CBRE Hana, LLC, which we also refer to as Hana. Hana develops and operates integrated, scalable, flexible workspaces, which contain office suites, conference rooms and event space and communal co-working space. Hana helps institutional property owners meet the rapidly growing demand from real estate occupiers for flexible office space solutions.

Competition

We face competition across all our lines of business on an international, national, regional and local level. Although we are the largest commercial real estate services firm in the world in terms of 2019 revenue, our relative competitive position varies significantly across geographic markets, property types and services. We face competition from other global, national, regional and local commercial real estate service providers; companies that traditionally competed in limited portions of our facilities management business and have expanded into other outsourcing offerings; 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-market 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, 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 flexible office-space solutions, such as WeWork, IWG/Regus/Spaces, Industrious and Knotel, have offered services directly to occupiers, providing competition, particularly for smaller space requirements. These providers also compete directly with our flexible-space solutions subsidiary, CBRE Hana, LLC, which launched in 2019.

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, 2019, excluding our independent affiliates, we had more than 100,000 employees worldwide, approximately 47% of whose costs are fully reimbursed by clients and are mostly in our Global Workplace Solutions segment and our property management line of business within our Advisory Services segment. At December 31, 2019, approximately 12% 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,” “Hana” and “Telford” marks. 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” marks. We maintain trademark registrations for the “CBRE,” “Hana” and “Telford” service marks 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 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. On the Investor Relations section of our website (https://ir.cbre.com), 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 website is available to be viewed free of charge.

Investors and others should note that we routinely announce financial and other material information using our investor relations website, SEC filings, press releases, public conference calls and webcasts. We use these channels of distribution to communicate with our investors and members of the public about our company, our services and other items of interest. 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.

Risks Related to our Business Environment

Our performance is significantly related to general economic, political and regulatory conditions and, accordingly, our business, operations and financial condition could be adversely affected by economic slowdowns, liquidity constraints, significant public health events, such as pandemics, fiscal or political uncertainty and possible subsequent downturns in commercial real estate asset values, property sales and leasing activities in 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 operate, which can result in a 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, in 2019, continued uncertainty throughout the year about the date and the terms on which the United Kingdom would leave the European Union led to lower lease and sales volumes. Following the United Kingdom's exit from the European Union on January 31, 2020, ongoing uncertainty over the country's long-term economic and trade relationship with the European Union may continue to cause market volatility and currency fluctuations and adversely impact business and consumer confidence or the economy in general, which may adversely affect business in the United Kingdom and other European businesses. These uncertainties and any perception of weakness in the British economy could not only impact the performance of commercial real estate assets located in the United Kingdom, but access to funds from investors located in the United Kingdom.

Adverse economic conditions or political or regulatory uncertainty or significant public health events, such as pandemics, could also lead to a decline in leasing volume, property sales prices, funds invested in commercial real estate assets or planned development activity, which in turn could reduce the commissions and fees we earn. During 2019, our Asia Pacific business experienced declines in leasing activity amid rising geopolitical and trade uncertainty and slowing regional economies. Furthermore, in December 2019, a strain of coronavirus was reported to have surfaced in Wuhan, China, resulting in decreased economic activity in China and concerns about a potential pandemic, which would adversely affect the broader global economy. At this point, the extent to which this coronavirus may impact the global economy and our results is uncertain, but pandemics or other significant public health events, or the perception that such events may occur, could have a material adverse effect on our business.

We also make co-investments alongside our investor clients in our development and investment management businesses. During an economic downturn, capital for our investment activities could be constrained and it may take longer for us to dispose of real estate investments or sale prices we achieve 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 volume of loans our capital markets business originates and/or services. Fees within our property management business are generally based on a percentage of rent collections, making them sensitive to macro-economic conditions that negatively impact rent collections and the performance of the properties we manage.

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 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 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 financial 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 markets.

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 obtain credit on favorable terms, there may be fewer property leasing, disposition and acquisition transactions. In addition, under such conditions, our investment management and development services businesses may be unable to attract capital or achieve returns sufficient to earn incentive fees and we may also experience losses of co-invested equity capital if the disruption causes a prolonged 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 2019, approximately 42% 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 revenue and earnings as well as the assets under management for our investment management business. Over time, fluctuations in the value of the U.S. dollar relative to the other currencies in which we 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.

In addition, we are exposed to international economic trends, foreign governmental policy actions and the following factors that may adversely affect the performance of our business:

- 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;
- responsibility for 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, including those related to public health or safety events;
- greater difficulty in collecting accounts receivable in some geographic regions, such as Asia;
- a tendency for clients to delay payments in some European and Asian countries;
- political and economic instability in certain countries;
- foreign ownership restrictions 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 throughout the company as well as programs designed to enable us to comply with any potential government economic sanctions, embargoes or other import/export controls. 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 established operations and seek to grow our presence in many 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.

Risks Related to Our Operations

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 2019 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 and financial performance have benefited significantly from acquisitions, which may not perform as expected and similar opportunities may not be available in the future.

Acquisitions have accounted for a significant component of our growth over time. Any future growth through acquisitions will depend in part upon the continued availability of suitable acquisition candidates at attractive prices, terms and conditions, 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 made concerning the value, strengths and weaknesses of businesses acquired may prove to be incorrect. Future acquisitions and any necessary related financings also may involve significant transaction-related expenses, which could 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 adversely impact our business and the acquired company's business as it requires coordination of geographically diverse organizations and implementation of new accounting and information technology systems. 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.

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, which often 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 personnel in all areas of our business. We and our competitors 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, which could negatively impact our profitability, or result in our inability 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. If we are unable to attract and retain these qualified personnel, our growth may be limited and our business and operating results could suffer.

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 and reputational risks. 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, 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 complaints, regulatory compliance, such as compliance with government sanctions, the Foreign Corrupt Practices Act, or 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 or others in response to such conduct. 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 abroad. 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. Social media channels can also cause rapid, widespread reputational harm to our brand. Our brand and reputation may also be harmed by the actions of third parties that are outside of our control, including vendors and joint venture partners.

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 Real Estate Investments businesses, including our real estate investment programs and co-investment activities, subject us to performance and real estate investment risks which could cause fluctuations in our earnings and cash flow and impact our ability to raise capital for future investments.

The revenue, net income and cash flow generated by our investment management business line within our Real Estate Investments segment can be volatile primarily because the management, transaction and incentive fees can vary as a result of market movements. In the event that any of the investment programs that our 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.

An important part of the strategy for our 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, 2019, we had committed $72.1 million to fund future co-investments in our Real Estate Investments segment, approximately $46.3 million of which is expected to be funded during 2020. 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 investment management line of business, which might suffer if we were unable to make these investments.

Selective investment in real estate projects is critical to our development services business strategy within our Real Estate Investments segment, and there is an inherent risk of loss of our investments. As of December 31, 2019, we had 16 real estate projects consolidated in our financial statements. In addition, as of December 31, 2019, we were involved as a principal (in most cases, co-investing with our clients) in approximately 70 unconsolidated real estate subsidiaries with invested equity of $176.5 million and had committed additional capital to these unconsolidated subsidiaries of $50.1 million. As of December 31, 2019, we also had guarantees of $21.8 million in our U.K. development business, which relate to our share of certain cost overrun guarantees of unconsolidated subsidiaries, as well as guaranteed outstanding notes payable of these unconsolidated subsidiaries in our U.S. development business with outstanding balances of $6.6 million.

During the ordinary course of business within our development services business line, 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. 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.

The success of our Global Workplace Solutions segment depends on our ability to enter into mutually beneficial contracts, deliver high quality levels of service and accurately assess working capital requirements.

Contracts for our Global Workplace Solutions clients often include complex terms regarding payment of fees, risk transfer, liability limitations, termination, due diligence and transition timeframe. Further, the facilities management and project management businesses within our Global Workplace Solutions segment are often impacted by transition activities in the first year of a contract as well as the timing of starting operations on these large client contracts. If we are unable to negotiate contracts with our clients in a timely manner and on mutually beneficial terms, or there is a delay in becoming fully operational, our business and results of operation may be negatively impacted. Further, if we fail to deliver the high quality levels of service expected by our clients, it may result in reputational and financial damage, and could impact our ability to retain existing clients and attract new clients.

The success of our Global Workplace Solutions segment also requires us to accurately model the working capital needs of this business. Should we fail to accurately assess working capital requirements, the cash flow generated by this business may be adversely impacted. In addition, if we do not accurately assess the creditworthiness of a client or if a client's creditworthiness changes during the term of the contract, we could potentially be unable to collect on any outstanding payments.

A significant portion of our loan origination and servicing business depends upon our relationships with U.S. Government Sponsored Enterprises.

A significant portion of our loan origination and servicing business depends upon our relationship with the Federal National Mortgage Association, or Fannie Mae, and the Federal Home Loan Mortgage Corporation, or Freddie Mac, collectively the Government Sponsored Enterprises, or GSEs. Numerous pieces of legislation seeking various types of changes designed to reform the GSEs and the U.S. housing finance system have been introduced in Congress including among other things, changes to the role the GSEs play in the U.S. housing finance system and the winding down or conservatorship of Fannie Mae and Freddie Mac over a period of years. Legislation which curtails the GSEs activities and/or alters the structure or existence of the GSEs, if enacted, may result in a significant

decrease in our loan origination and servicing revenue and could have a significant impact on our loan origination and servicing business. Further, as an approved seller/servicer for the GSEs, we are required to comply with various eligibility criteria and are required to originate and service loans in accordance with their individual program requirements. Failure to comply with these requirements may result in termination or withdrawal of our approval to sell and service the GSEs loans. Our status as an approved seller/servicer may be terminated by the applicable GSE at any time for cause.

Our investments in our flexible workspace offering, Hana, may prove to be unsuccessful.

While we have taken a measured approach regarding our investment into our flexible workspace offering, Hana, there is a possibility that these investments will prove to be unsuccessful. Given our measured approach, we believe the impact to our overall business would not be material at this time, but we expect to continue opening new Hana locations during the course of 2020. As this product offering expands, the potential impact to our overall financial condition will increase. Should these locations be unsuccessful, we may not earn a positive return on the capital invested and we may incur future operating losses associated with the cost of operating leases required for this business.

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.

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.

Our ability to conduct a global business may be adversely impacted by disruptions to the infrastructure that supports our businesses and the communities in which they are located. This may include disruptions as a result of political instability, public health crises, attacks on our information technology systems, terrorist attacks, interruptions or delays in services from third-party data center hosting facilities or cloud computing platform providers, employee errors or malfeasance, building defects, utility outages and natural disasters such as fires, earthquakes, floods and hurricanes. The infrastructure disruptions we may experience as a result of such disasters could also disrupt our ability to manage real estate for clients or may adversely affect the value of the real estate investments we make through our investment management and development services businesses.

The buildings we manage for clients, which include some of the world's largest office properties and retail centers, are used by people daily. We also manage the critical facilities (including data centers) that our clients rely on to serve the public and their customers, where unplanned downtime could potentially disrupt other parts of their businesses or society. As a result, fires, earthquakes, floods, other natural disasters, building defects, terrorist attacks, mass shootings or infrastructure disruptions can result in significant loss of life or injury, 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 policies, procedures and programs to safeguard the health, safety and security of our employees and others may not be adequate.

We have more than 100,000 employees as well as independent contractors working in over 100 countries. We have undertaken to implement what we believe to be best practices to safeguard the health, safety and security of our employees, independent contractors, clients and others at our worksites. However, if these policies, procedures and programs are not adequate, or employees do not receive related adequate training or follow them for any reason, the consequences may be severe to us, including serious injury or loss of life, which could impair our operations and cause us to incur significant legal liability or fines as well as reputational damage. Our insurance may not cover, or may be insufficient to cover, any legal liability or fines that we incur for health, safety or security incidents.

Our joint venture activities and affiliate program involve 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.

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, particularly those that impact our ability to close large transactions, may have a proportionally larger effect on our financial condition and results of operations.

Risks Related to Our Indebtedness

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.

As of December 31, 2019, 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, 2019, our interest expense was $103.0 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 22.62x for the year ended December 31, 2019, and our leverage ratio of total debt less available cash to consolidated EBITDA was 0.44x as of December 31, 2019. 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 the calculation of LIBOR after 2021. The Alternative Reference Rates Committee, or ARRC, has proposed that the Secured Overnight Financing Rate, or 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. 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. Establishing a replacement rate for LIBOR in this manner may result in interest obligations which are more than or do not otherwise correlate over time with the payments that would have been made on our debt if LIBOR was available in its current form.

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.

Risks Related to our Information Technology, Cybersecurity and Data Protection

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 heavily 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, as well as that of third-party vendors, 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 are critical to our operations. Although we and our vendors 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, China’s Cyber Security Law, various U.S. federal and state laws governing the protection of health or other personally identifiable information, including the California Consumer Privacy Act, 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.

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.

Legal and Regulatory Related Risks

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, especially within our valuations business. 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.

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 resulted in increased government and legislative activity and we expect that we will continue to see the introduction of new legislation and additional changes to rules and regulations in 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. 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.

Risks Related to our Internal Controls and Accounting Policies

If we are unable to implement and maintain effective internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports and our results of operations and stock price could be adversely affected.

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 our internal control over financial reporting that includes an assessment of the effectiveness of these controls. As disclosed in Part II, Item 9A, during the fourth quarter of 2019, management identified several material weaknesses in internal control related to our Global Workplace Solutions segment in the Europe, Middle East & Africa region, or GWS EMEA. Management concluded that during 2019, as GWS EMEA increased in complexity and grew in both size and scale, management did not prioritize an appropriate level of oversight, a sufficient number of capable resources or training for control preparers and reviewers to address internal controls over financial reporting. As a result, even though a material misstatement was not identified in the GWS EMEA financial statements, it was determined that there was a reasonable possibility that a material misstatement in the GWS EMEA financial statements would not have been prevented or detected on a timely basis and, therefore, management concluded that our internal control over financial reporting was not effective as of December 31, 2019. We are committed to remediating the GWS EMEA material weaknesses in a timely manner and have begun the process of executing remediation plans. These measures will result in additional administrative expenses related to enhanced training and hiring of additional personnel. Internal control 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 control over financial reporting might not prevent or detect all misstatements or fraud. If we are unable to remediate the material weaknesses in a timely manner, or are otherwise unable to 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.

Cautionary Note on Forward-Looking Statements

This Annual Report on Form 10-K 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 on Form 10-K to identify forward-looking statements. Except for historical information contained herein, the matters addressed in this Annual Report on Form 10-K 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, political and regulatory conditions, particularly in geographies or industry sectors where our business may be concentrated;
- volatility or adverse developments in the securities, capital or credit markets, interest rate increases and conditions affecting the value of real estate assets, inside and outside the United States;
- poor performance of real estate investments or other conditions that negatively impact clients' willingness to make real estate or long-term contractual commitments and the cost and availability of capital for investment in real estate;
- foreign currency fluctuations and changes in currency restrictions, trade sanctions and import-export and transfer pricing rules;
- changes in U.S. 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 Asia, Africa, Russia, Eastern Europe and the Middle East, due to the level of political instability in those regions;
- our ability to compete globally, or in specific geographic markets or business segments that are material to us;
- our ability to identify, acquire and integrate accretive businesses;
- costs and potential future capital requirements relating to businesses we may acquire;
- integration challenges arising out of companies we may acquire;
- our ability to retain and incentivize key personnel;
- our ability to manage organizational challenges associated with our size;
- negative publicity or harm to our brand and reputation;
- increases in unemployment and general slowdowns in commercial activity;
- trends in pricing and risk assumption for commercial real estate services;
- the effect of significant changes in capitalization 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 further 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 continue investing in our platform and client service offerings;
- our ability to maintain expense discipline;
- the emergence of disruptive business models and technologies;
- the ability of our 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 or other threats to our information technology networks, including the potential misappropriation of assets or sensitive information, corruption of data or operational disruption;
- 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;
- changes in applicable tax or accounting requirements;
- any inability for us to implement and maintain effective internal controls over financial reporting;
- the effect of implementation of new accounting rules and standards or the impairment of our goodwill and intangible assets; and
- the other factors described elsewhere in this Annual Report on Form 10-K, 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.

As of December 31, 2019, we occupied offices, excluding affiliates, in the following geographical regions:

	Sales Offices	Corporate Offices	Total
Americas	255	3	258
Europe, Middle East and Africa (EMEA)	182	1	183
Asia Pacific	95	1	96
Total	532	5	537

Some of our offices house employees from more than one of our business segments (i.e. an office might house employees from all three of our business segments). As such, we have provided above office totals by geographic region rather than by business segment in order to avoid double counting or triple counting our 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 therefore 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 "CBRE" since March 19, 2018. Prior to that, from June 10, 2004 to March 18, 2018, our Class A common stock traded on the New York Stock Exchange under the "CBG" symbol.

As of February 14, 2020, there were 52 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 shares of our 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

None.

Issuer Purchases of Equity Securities

Open market share repurchase activity during the three months ended December 31, 2019 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, 2019 - October 31, 2019	1,003,485	$ 50.85	1,003,485	
November 1, 2019 - November 30, 2019	—	$ —	—	
December 1, 2019 - December 31, 2019	—	$ —	—	
Total	1,003,485	$ 50.85	1,003,485	$ 400,000

(1) In February 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. In both August and November 2019, our board of directors authorized an additional $100.0 million under our new program, bringing the total authorized amount under the new program to a total of $500.0 million. The remaining $400.0 million in the table represents the amount available to repurchase shares under the authorized repurchase program as of December 31, 2019.

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, 2019. 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)	10,309,128	$ —	7,538,712
Equity compensation plans not approved by security holders	—	—	—
Total	10,309,128	$ —	7,538,712

(1) Consists of restricted stock units, or RSUs, issued under our 2019 Equity Incentive Plan, or the 2019 Plan, our 2017 Equity Incentive Plan, or the 2017 Plan, and our 2012 Equity Incentive Plan, or the 2012 Plan. Our 2012 Plan terminated in May 2017 in connection with the adoption of the 2017 Plan. Our 2017 Plan terminated in May 2019 in connection with the adoption of the 2019 Plan. We cannot issue any further awards under both the 2017 Plan and the 2012 Plan.

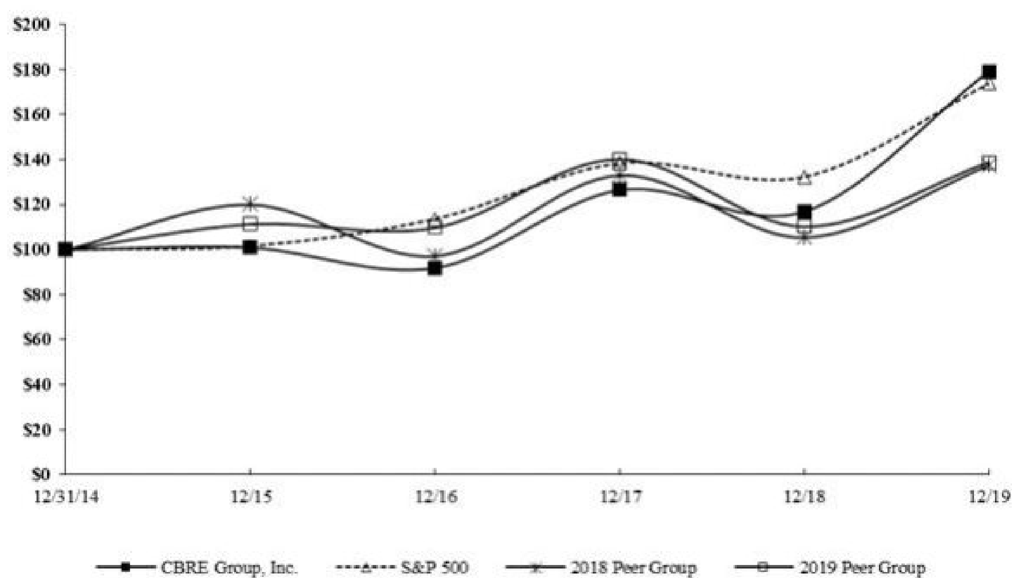
In addition:

- The figures in the foregoing table include:
  - 6,209,669 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
  - 4,099,459 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, 2014 and ending on December 31, 2019. 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, 2014 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 2019 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) , ISS A/S (ISS), Marcus & Millichap, Inc. (MMI), Newmark Group Inc. (NMRK), Savills plc (SVS.L, traded on the London Stock Exchange), Sodexo S.A. (SW.PA) 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. In 2019, we elected to remove HFF, L.P. from our peer group (given JLL acquired them) and replaced it with SW.PA.



	12/31/14	12/15	12/16	12/17	12/18	12/19
CBRE Group, Inc.	100.00	100.96	91.94	126.45	116.91	178.95
S&P 500	100.00	101.38	113.51	138.29	132.23	173.86
2018 Peer Group	100.00	120.09	97.31	133.11	105.56	137.39
2019 Peer Group	100.00	111.30	109.75	140.04	110.26	138.59

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

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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, 2019. The statement of operations data, the statement of cash flows data and the other data for the years ended December 31, 2019, 2018 and 2017 and the balance sheet data as of December 31, 2019 and 2018 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, 2016 and 2015, and the balance sheet data as of December 31, 2017, 2016 and 2015 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,				
	2019 (1)	2018	2017	2016	2015 (2)
STATEMENTS OF OPERATIONS DATA:					
Revenue	$ 23,894,091	$ 21,340,088	$ 18,628,787	$ 17,369,108	$ 10,855,810
Operating income	1,259,875	1,087,989	1,078,682	816,831	835,944
Interest expense, net of interest income	85,754	98,685	126,961	136,800	112,569
Write-off of financing costs on extinguished debt	2,608	27,982	—	—	2,685
Net income	1,291,450	1,065,948	703,576	585,170	558,877
Net income attributable to non-controlling interests	9,093	2,729	6,467	12,091	11,745
Net income attributable to CBRE Group, Inc.	1,282,357	1,063,219	697,109	573,079	547,132
Income per share attributable to CBRE Group, Inc. (3)					
Basic income per share	$ 3.82	$ 3.13	$ 2.06	$ 1.71	$ 1.64
Diluted income per share	3.77	3.10	2.05	1.69	1.63
Weighted average shares:					
Basic	335,795,654	339,321,056	337,658,017	335,414,831	332,616,301
Diluted	340,522,871	343,122,741	340,783,556	338,424,563	336,414,856
STATEMENTS OF CASH FLOWS DATA (4):					
Net cash provided by operating activities	$ 1,223,380	$ 1,131,249	$ 894,411	$ 616,985	$ 651,897
Net cash used in investing activities	(721,024)	(560,684)	(302,600)	(150,524)	(1,618,959)
Net cash (used in) provided by financing activities	(271,949)	(506,600)	(627,742)	(220,677)	789,548
OTHER DATA:					
Adjusted EBITDA (5)	$ 2,063,783	$ 1,905,168	$ 1,716,774	$ 1,562,347	$ 1,412,724
BALANCE SHEET DATA:					
Cash and cash equivalents	$ 971,781	$ 777,219	$ 751,774	$ 762,576	$ 540,403
Total assets	16,197,196	13,456,793	11,718,396	10,994,338	11,017,943
Long-term debt, including current portion, net	1,763,059	1,770,406	1,999,611	2,548,137	2,679,539
Total liabilities	9,924,084	8,446,891	7,543,782	7,848,438	8,258,873
Total CBRE Group, Inc. stockholders' equity	6,232,693	4,938,797	4,114,496	3,103,142	2,712,652

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

(1) We adopted new lease accounting guidance in the first quarter of 2019 using the optional transitional method. Accordingly, no adjustments were made to the financial statements presented for prior periods. As a result of the adoption of the leasing guidance, the consolidated balance sheet as of January 1, 2019 reflected $1.2 billion of additional lease liabilities, along with corresponding right-of-use assets of $1.0 billion, reflecting adjustments for items such as prepaid and deferred rent, unamortized initial direct costs, and unamortized lease incentive balances. The adoption of the leasing guidance did not have a material impact on our consolidated statement of operations. See Note 3 of our Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

(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.

We also adopted new revenue recognition guidance in 2018 and restated 2017 and 2016 financial statements to conform with the new guidance. Amounts for the year ended December 31, 2015 have not been restated. See our Annual Report on Form 10-K for the year ended December 31, 2018 for additional information.

(3) See Income Per Share information in Note 17 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 were made to the 2017 and 2016 statements of cash flows to conform with the 2018 presentation. Amounts for the year ended December 31, 2015 have not been reclassified.

(5) Adjusted EBITDA is not a recognized measurement under accounting principles generally accepted in the United States, or GAAP. When analyzing our operating performance, investors should use this measure in addition to, and not as an alternative for, the most directly comparable financial measure calculated and presented in accordance with GAAP. We generally use this non-GAAP financial measure to evaluate operating performance and for other discretionary purposes. We believe this measure provides a more complete understanding of ongoing operations, enhances comparability of current results to prior periods and may be useful for investors to analyze our financial performance because it eliminates 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 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 and intangible asset impairments. Amounts shown for adjusted EBITDA further remove (from EBITDA) the impact of certain cash and non-cash items related to acquisitions, certain carried interest incentive compensation (reversal) expense to align with the timing of associated revenue, costs associated with our reorganization, including cost-savings initiatives, cost-elimination expenses 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.

Adjusted EBITDA is not intended to be a measure of free cash flow for our discretionary use because it does not consider certain cash requirements such as tax and debt service payments. This measure may also differ from amounts calculated under similarly titled definitions in our debt instruments, which 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.

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

	Year Ended December 31,				
	2019	2018	2017	2016	2015 (2)
Net income attributable to CBRE Group, Inc.	$ 1,282,357	$ 1,063,219	$ 697,109	$ 573,079	$ 547,132
Add:					
Depreciation and amortization	439,224	451,988	406,114	366,927	314,096
Intangible asset impairment	89,787	—	—	—	—
Interest expense, net of interest income	85,754	98,685	126,961	136,800	112,569
Write-off of financing costs on extinguished debt	2,608	27,982	—	—	2,685
Provision for income taxes	69,895	313,058	467,757	296,900	320,853
EBITDA	1,969,625	1,954,932	1,697,941	1,373,706	1,297,335
Adjustments:					
Costs associated with our reorganization, including cost-savings initiatives (i)	49,565	37,925	—	—	—
Integration and other costs related to acquisitions	15,292	9,124	27,351	125,743	48,865
Carried interest incentive compensation expense (reversal) to align with the timing of associated revenue	13,101	(5,261)	(8,518)	(15,558)	26,085
Impact of fair value adjustments to real estate assets acquired in the Telford Acquisition (purchase accounting) that were sold in period	9,301	—	—	—	—
Costs incurred related to legal entity restructuring	6,899	—	—	—	—
Costs incurred in connection with litigation settlement	—	8,868	—	—	—
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	$ 2,063,783	$ 1,905,168	$ 1,716,774	$ 1,562,347	$ 1,412,724

(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.

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 2019 revenue, with leading global market positions in our leasing, property sales, occupier outsourcing and valuation businesses. As of December 31, 2019, we operated in more than 530 offices worldwide and have more than 100,000 employees, excluding independent affiliates.

Our business is focused on providing services to real estate occupiers and investors. 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, mortgage origination, sales and servicing), leasing, investment management, property management, valuation and development services, among others. We provide services under the following brand names: "CBRE" (real estate advisory and outsourcing services); "CBRE Global Investors" (investment management); "Trammell Crow Company" (U.S. development); "Telford Homes" (U.K. development) and "Hana" (flexible-space solutions).

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 substantial share of growing market opportunities. 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 2019, 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 2019 we were ranked #146 on the *Fortune* 500. We have been voted the most recognized commercial real estate brand in the Lipsey Company survey for 19 years in a row (including 2020). We have also been rated a World's Most Ethical Company by the Ethisphere Institute for seven consecutive years (including 2020), and are included in the Dow Jones World Sustainability Index and the Bloomberg Gender Equality Index.

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, 2019 and 2018 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 a decrease to the U.S. corporate tax rate from 35% to 21% and a one-time transition tax (i.e. toll charge or, the Transition Tax) on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017. We are paying the federal tax liability for the Transition Tax in annual interest-free installments over a period of eight years through 2025 as allowed by the Tax Act.

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.

See Note 15 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 believe that general inflation has not 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. Additionally, our contractual revenues have continued to increase primarily as a result of growth in our outsourcing business, and we believe this contractual revenue should help offset the negative impacts that macroeconomic deterioration could have on other parts of our business. Nevertheless, adverse global and regional economic trends could pose significant risks to the performance of our consolidated operations and 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. In 2019, U.S. sales market activity improved from 2018 levels, as significant capital continued to be targeted at commercial real estate and relatively low-cost financing remained plentiful. The market for commercial real estate leasing was solid in 2019, though leasing market volumes weakened somewhat in the latter stages of the year.

In Europe, leasing activity was relatively stable in 2019; sales market volumes were soft for much of the year, but rebounded strongly in the fourth quarter. The United Kingdom's economy and property market were generally solid from the June 2016 referendum to leave the European Union through 2018. However, in 2019, continued uncertainty throughout the year about the date and the terms on which the United Kingdom would leave the European Union led to lower lease and sales volumes. The December 2019 United Kingdom general election and exit from the European Union on January 31, 2020 brought some clarity and a return of investor confidence, but uncertainty remains over the United Kingdom's long-term economic and trade relationship with the European Union.

In Asia Pacific, leasing activity declined significantly in 2019 amid rising geopolitical uncertainty and slowing regional economies. However, investment activity was more resilient, declining only modestly from 2018 levels. Asia Pacific investors continue to be a significant source of real estate investment capital in the region and globally.

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 public real estate equity funds and programs have been pressured by a shift in investor preferences from active to passive portfolio strategies.

The performance of our global real estate services and investment businesses depends on sustained economic growth and solid job creation; stable global credit markets; and 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. On October 1, 2019, we acquired Telford Homes Plc (Telford) to expand our real estate development business outside the United States (Telford Acquisition). A leading developer of multifamily residential properties in the London area, Telford is reported in our Real Estate Investments segment. Telford was acquired for £267.1 million, or $328.5 million along with the assumption of $110.7 million (£90.0 million) of debt and the acquisition of cash from Telford of $7.9 million (£6.4 million). The Telford Acquisition was funded with borrowings under our revolving credit facility.

On June 12, 2018, we acquired FacilitySource through a stock purchase and merger agreement with its stockholders, including FacilitySource Holdings, LLC, WP X Finance, LP and Warburg Pincus X Partners, LP (FacilitySource Acquisition). FacilitySource, which is reported in our Global Workplace Solutions segment, was acquired to help us build a tech-enabled supply chain capability for the occupier outsourcing industry, which would drive meaningfully differentiated outcomes for leading occupiers of real estate. The net purchase price was approximately $266.5 million in cash, with $263.0 million paid in 2018 and $3.5 million paid in 2019. We financed the transaction with a combination of cash on hand and borrowings under our revolving credit facility.

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. In early 2020, we acquired leading local facilities management firms in Spain and Italy and a U.S. firm that helps companies reduce telecommunications costs.

During 2019, we completed eight in-fill acquisitions: a leading advanced analytics software company based in the United Kingdom, a commercial and residential real estate appraisal firm headquartered in Florida, our former affiliate in Omaha, a project management firm in Australia, a valuation and consulting business in Switzerland, a leading project management firm in Israel, a full-service real estate firm in San Antonio with a focus on retail, office, medical office and land, and a debt-focused real estate investment management business in the United Kingdom. During 2018, we completed six in-fill acquisitions, the largest of which was the purchase of the remaining 50% equity interest in our longstanding New England joint venture. We also 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, and a provider of real estate and facilities consulting services to healthcare companies across the United States.

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

Our acquisition agreements often require us to pay deferred and/or contingent purchase price payments, subject to the acquired company achieving certain performance metrics, and/or the passage of time as well as other conditions. As of December 31, 2019, we have accrued deferred consideration totaling $111.7 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 continue to monitor developments related to the United Kingdom's withdrawal from the European Union and the uncertainty of the long-term economic and trade relationship between the United Kingdom and European Union. The continued uncertainty has the potential to impact our businesses in the United Kingdom and the rest of Europe, particularly sales and leasing activity in the United Kingdom. In addition, any associated currency volatility could impact our results of operations. We are also monitoring the impact of a coronavirus that emerged in Wuhan, China in December 2019 on business conditions and operations in China and other regions in which we operate.

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 Real Estate Investments 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, 2019, approximately 42% 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,					
	2019		2018		2017	
United States dollar	$ 13,852,018	58.0%	$ 12,264,188	57.5%	$ 10,954,608	58.8%
British pound sterling	2,972,704	12.5%	2,586,890	12.1%	2,242,973	12.1%
euro	2,492,952	10.4%	2,329,832	10.9%	1,740,764	9.3%
Canadian dollar	774,825	3.2%	717,692	3.3%	617,923	3.3%
Indian rupee	503,630	2.1%	418,390	2.0%	370,705	2.0%
Australian dollar	453,847	1.9%	482,749	2.3%	467,623	2.5%
Chinese yuan	349,762	1.5%	303,600	1.4%	244,717	1.3%
Japanese yen	325,558	1.4%	277,636	1.3%	269,835	1.4%
Singapore dollar	300,116	1.3%	268,193	1.3%	256,319	1.4%
Brazilian real	197,981	0.8%	174,728	0.8%	198,270	1.1%
Swiss franc	194,354	0.8%	182,641	0.9%	153,078	0.8%
Hong Kong dollar	167,463	0.7%	169,449	0.8%	148,174	0.8%
Mexican peso	135,279	0.6%	135,187	0.6%	115,812	0.6%
Israeli shekel	125,402	0.5%	57,779	0.3%	22,628	0.1%
Polish zloty	117,697	0.5%	90,343	0.4%	71,849	0.4%
Thai baht	82,252	0.3%	79,373	0.4%	65,553	0.4%
Danish krone	80,026	0.3%	81,804	0.4%	82,061	0.4%
New Zealand dollar	71,192	0.3%	63,251	0.3%	51,353	0.3%
Swedish krona	70,101	0.3%	70,471	0.3%	71,849	0.4%
Korean won	62,572	0.3%	59,912	0.3%	48,475	0.3%
Czech koruna	55,984	0.2%	54,986	0.3%	42,008	0.2%
Other currencies	508,376	2.1%	470,994	2.1%	392,210	2.1%
Total revenue	$ 23,894,091	100.0%	$ 21,340,088	100.0%	$ 18,628,787	100.0%

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, 2019, the net impact would have been an increase in pre-tax income of $3.6 million. Had the euro-to-U.S. dollar exchange rates been 10% higher during the year ended December 31, 2019, 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.

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 affect 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, 2019, 2018 and 2017 (dollars in thousands):

	Year Ended December 31,					
	2019		2018		2017	
Revenue:						
Fee revenue:						
Global workplace solutions	$ 3,126,931	13.1%	$ 2,739,107	12.8%	$ 2,317,693	12.4%
Property and advisory project management	1,259,222	5.3%	1,181,152	5.5%	1,003,113	5.4%
Valuation	630,399	2.6%	598,806	2.8%	556,008	3.0%
Loan servicing	206,736	0.9%	183,366	0.9%	157,449	0.8%
Advisory leasing	3,269,993	13.7%	3,080,117	14.4%	2,592,203	13.9%
Capital markets:						
Advisory sales	2,130,979	8.9%	1,980,932	9.3%	1,869,872	10.0%
Commercial mortgage origination	575,963	2.4%	539,348	2.5%	455,599	2.4%
Investment management	424,882	1.8%	434,405	2.0%	377,644	2.0%
Development services	235,740	0.9%	100,319	0.6%	79,455	0.6%
Total fee revenue	11,860,845	49.6%	10,837,552	50.8%	9,409,036	50.5%
Pass through costs also recognized as revenue	12,033,246	50.4%	10,502,536	49.2%	9,219,751	49.5%
Total revenue	23,894,091	100.0%	21,340,088	100.0%	18,628,787	100.0%
Costs and expenses:						
Cost of revenue	18,689,013	78.2%	16,449,212	77.1%	14,305,099	76.8%
Operating, administrative and other	3,436,009	14.4%	3,365,773	15.8%	2,858,720	15.3%
Depreciation and amortization	439,224	1.8%	451,988	2.1%	406,114	2.2%
Intangible asset impairment	89,787	0.4%	—	0.0%	—	0.0%
Total costs and expenses	22,654,033	94.8%	20,266,973	95.0%	17,569,933	94.3%
Gain on disposition of real estate	19,817	0.1%	14,874	0.1%	19,828	0.1%
Operating income	1,259,875	5.3%	1,087,989	5.1%	1,078,682	5.8%
Equity income from unconsolidated subsidiaries	160,925	0.7%	324,664	1.5%	210,207	1.0%
Other income	28,907	0.1%	93,020	0.4%	9,405	0.1%
Interest expense, net of interest income	85,754	0.4%	98,685	0.4%	126,961	0.6%
Write-off of financing costs on extinguished debt	2,608	0.0%	27,982	0.1%	—	0.0%
Income before provision for income taxes	1,361,345	5.7%	1,379,006	6.5%	1,171,333	6.3%
Provision for income taxes	69,895	0.3%	313,058	1.5%	467,757	2.5%
Net income	1,291,450	5.4%	1,065,948	5.0%	703,576	3.8%
Less: Net income attributable to non-controlling interests	9,093	0.0%	2,729	0.0%	6,467	0.1%
Net income attributable to CBRE Group, Inc.	$ 1,282,357	5.4%	$ 1,063,219	5.0%	$ 697,109	3.7%
Adjusted EBITDA	$ 2,063,783	8.6%	$ 1,905,168	8.9%	$ 1,716,774	9.2%

Fee revenue 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 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 and intangible asset impairments. Amounts shown for adjusted EBITDA further remove (from EBITDA) the impact of certain cash and non-cash items related to acquisitions, certain carried interest incentive compensation expense (reversal) to align with the timing of associated revenue, costs associated with our reorganization, including cost-savings initiatives, 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.

Adjusted EBITDA is not intended to be a measure of free cash flow for our discretionary use because it does not consider certain cash requirements such as tax and debt service payments. This measure may also differ from the amounts calculated under similarly titled definitions in our debt instruments, which 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.

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

	Year Ended December 31,		
	2019	2018	2017
Net income attributable to CBRE Group, Inc.	$ 1,282,357	$ 1,063,219	$ 697,109
Add:			
Depreciation and amortization	439,224	451,988	406,114
Intangible asset impairment	89,787	—	—
Interest expense, net of interest income	85,754	98,685	126,961
Write-off of financing costs on extinguished debt	2,608	27,982	—
Provision for income taxes	69,895	313,058	467,757
EBITDA	1,969,625	1,954,932	1,697,941
Adjustments:			
Costs associated with our reorganization, including cost-savings initiatives (1)	49,565	37,925	—
Integration and other costs related to acquisitions	15,292	9,124	27,351
Carried interest incentive compensation expense (reversal) to align with the timing of associated revenue	13,101	(5,261)	(8,518)
Impact of fair value adjustments to real estate assets acquired in the Telford Acquisition (purchase accounting) that were sold in period	9,301	—	—
Costs incurred related to legal entity restructuring	6,899	—	—
Costs incurred in connection with litigation settlement	—	8,868	—
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)	—
Adjusted EBITDA	$ 2,063,783	$ 1,905,168	$ 1,716,774

(1) 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.

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018

We reported consolidated net income of $1.3 billion for the year ended December 31, 2019 on revenue of $23.9 billion as compared to consolidated net income of $1.1 billion on revenue of $21.3 billion for the year ended December 31, 2018.

Our revenue on a consolidated basis for the year ended December 31, 2019 increased by $2.6 billion, or 12.0%, as compared to the year ended December 31, 2018. The revenue increase reflects strong organic growth fueled by higher revenue in our Global Workplace Solutions segment (up 14.5%) and improved revenue in our Advisory Services segment due to property and advisory project management revenue (up 9.6%) as well as

increased advisory leasing (up 6.2%), advisory sales (up 7.6%) and commercial mortgage origination activity (up 12.7%). Higher revenue in our Real Estate Investments segment (up 23.5%) driven by the Telford Acquisition also contributed to the increase. Foreign currency translation had a 2.1% negative impact on total revenue during the year ended December 31, 2019, primarily driven by weakness in the Argentine peso, Australian dollar, Brazilian real, British pound sterling, Canadian dollar, euro and Indian rupee.

Our cost of revenue on a consolidated basis increased by $2.2 billion, or 13.6%, during the year ended December 31, 2019 as compared to the same period in 2018. This increase was primarily due to higher costs associated with our Global Workplace Solutions segment. In addition, our sales professionals generally are paid on a commission basis, which substantially correlates with our transaction revenue performance. Accordingly, the increase in advisory leasing and sales transaction revenue led to a corresponding increase in commission expense. Higher costs in our property and advisory project management business as well as higher costs in our Real Estate Investments segment (due to the Telford Acquisition) also contributed to the increase. These items were partially offset by the impact of foreign currency translation, which had a 2.2% positive impact on total cost of revenue during the year ended December 31, 2019. Cost of revenue as a percentage of revenue increased from 77.1% for the year ended December 31, 2018 to 78.2% for the year ended December 31, 2019, primarily driven by our mix of revenue, with revenue from our Global Workplace Solutions segment, which has a lower margin than our other revenue streams, comprising a higher percentage of revenue than in the prior period.

Our operating, administrative and other expenses on a consolidated basis increased by $70.2 million, or 2.1%, during the year ended December 31, 2019 as compared to the same period in 2018. During the year ended December 31, 2019, we incurred $47.0 million of costs in connection with our reorganization (including cost-savings initiatives) as compared to $35.2 million of such costs incurred in the prior year. Additionally, in the current year, we incurred higher payroll-related costs, higher integration and other costs associated with acquisitions (primarily due to the Telford Acquisition), costs related to a legal entity restructuring and increased occupancy costs. These items were partially offset by the impact of foreign currency translation, which had a 2.2% positive impact on total operating expenses during the year ended December 31, 2019, as well as lower bonuses in our Real Estate Investment segment (driven by lower property sales during 2019 as compared to the same period in the prior year, which were reflected in equity income from unconsolidated subsidiaries). During the year ended December 31, 2018, we also incurred $8.9 million of costs as a result of a litigation settlement, which did not recur during the year ended December 31, 2019. Operating expenses as a percentage of revenue decreased from 15.8% for the year ended December 31, 2018 to 14.4% for the year ended December 31, 2019, reflecting the operating leverage inherent in our business.

Our depreciation and amortization expense on a consolidated basis decreased by $12.8 million, or 2.8%, during the year ended December 31, 2019 as compared to the same period in 2018. This decrease was primarily attributable to $27.4 million of lower amortization expense largely associated with intangibles from prior acquisitions. The decrease in amortization expense was partially offset by a rise in depreciation expense of $14.6 million during the year ended December 31, 2019 driven by technology-related capital expenditures.

During the year ended December 31, 2019, we recorded an intangible asset impairment of $89.8 million in our Real Estate Investments segment. This non-cash write-off resulted from a review of the anticipated cash flows and the decrease in assets under management in our public securities business driven in part by continued industry-wide shift in investor preference for passive investment programs.

Our gain on disposition of real estate on a consolidated basis increased by $4.9 million, or 33.2%, during the year ended December 31, 2019 as compared to the same period in 2018. These gains resulted from property sales within our Real Estate Investments segment.

Our equity income from unconsolidated subsidiaries on a consolidated basis decreased by $163.7 million, or 50.4%, during the year ended December 31, 2019 as compared to the same period in 2018, primarily driven by lower equity earnings associated with gains on property sales reported in our Real Estate Investments segment.

Our other income on a consolidated basis was $28.9 million for the year ended December 31, 2019 versus $93.0 million for the same period in the prior year. The income during the year ended December 31, 2019 was primarily driven by net realized and unrealized gains related to co-investments in our real estate securities business within our Real Estate Investments segment. The income in the prior year included a one-time gain of $100.4 million associated with remeasuring our investment in a previously unconsolidated subsidiary in New England in our Advisory Services segment to fair value as of the date we acquired the remaining controlling interest.

Our consolidated interest expense, net of interest income, decreased by $12.9 million, or 13.1%, for the year ended December 31, 2019 as compared to the same period in 2018. 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. Lower interest expense associated with the term loans under our credit agreement (driven by more favorable interest rates stemming from our amendment to our credit agreement in 2019) also contributed to the decrease.

Our write-off of financing costs on extinguished debt on a consolidated basis was $2.6 million for the year ended December 31, 2019 as compared to $28.0 million for the year ended December 31, 2018. The costs for the year ended December 31, 2019 were incurred in connection with the refinancing of our credit agreement. The costs for the year ended December 31, 2018 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 $69.9 million for the year ended December 31, 2019 as compared to $313.1 million for the same period in 2018. Our effective tax rate decreased from 22.7% for the year ended December 31, 2018 to 5.1% for the year ended December 31, 2019. The lower tax rate for year ended December 31, 2019 was primarily driven by a $277.2 million net tax benefit recorded in 2019 attributable to outside basis differences recognized as a result of a legal entity restructuring.

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 revenue in our Global Workplace Solutions segment (up 14.6%) and improved revenue in our Advisory Services segment due to property and advisory project management revenue (up 17.7%), increased advisory leasing (up 18.8%), advisory sales (up 5.9%) and commercial mortgage origination activity (up 18.4%). Higher revenue in our Real Estate Investments segment (up 17.0%) also contributed to the increase. In addition, foreign currency translation had a 0.5% 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 revenue 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 Global Workplace Solutions segment. 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 advisory leasing and sales transaction revenue led to a corresponding increase in commission expense. Higher costs in our property and advisory project management business also contributed to the increase. Lastly, foreign currency translation had a 0.5% negative impact on total cost of revenue during the year ended December 31, 2018. Cost of revenue 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 revenue from our Global Workplace Solutions segment, which has a lower margin than our other revenue streams, comprising a higher percentage of revenue in 2018 than in 2017.

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 0.8% 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 Real Estate Investments 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 of $20.0 million 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 Real Estate Investments 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, net of interest income, decreased by $28.3 million, or 22.3%, 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 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, would have been 21.7% for the year ended December 31, 2018 compared to 27.7% 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.

Segment Operations

On August 17, 2018, we announced a new organizational structure that became effective on January 1, 2019. Under the new structure, we 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 additional information on our segments, see Note 19 of the Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

Advisory Services

The following table summarizes our results of operations for our Advisory Services operating segment for the years ended December 31, 2019, 2018 and 2017 (dollars in thousands):

	Year Ended December 31,					
	2019		2018		2017	
Revenue:						
Fee revenue:						
Property and advisory project management	$ 1,259,222	13.9%	$ 1,181,152	14.0%	$ 1,003,113	13.6%
Valuation	630,399	6.9%	598,806	7.1%	556,008	7.5%
Loan servicing	206,736	2.3%	183,366	2.1%	157,449	2.1%
Advisory leasing	3,269,993	36.0%	3,080,117	36.5%	2,592,203	35.1%
Capital markets:						
Advisory sales	2,130,979	23.5%	1,980,932	23.5%	1,869,872	25.4%
Commercial mortgage origination	575,963	6.4%	539,348	6.4%	455,599	6.2%
Total fee revenue	8,073,292	89.0%	7,563,721	89.6%	6,634,244	89.9%
Pass through costs also recognized as revenue	996,176	11.0%	876,281	10.4%	745,481	10.1%
Total revenue	9,069,468	100.0%	8,440,002	100.0%	7,379,725	100.0%
Costs and expenses:						
Cost of revenue	5,465,391	60.3%	5,043,807	59.8%	4,358,248	59.1%
Operating, administrative and other	2,169,980	23.9%	2,160,957	25.6%	1,894,133	25.7%
Depreciation and amortization	304,766	3.4%	280,921	3.3%	243,791	3.3%
Operating income	1,129,331	12.4%	954,317	11.3%	883,553	11.9%
Equity income from unconsolidated subsidiaries	6,894	0.1%	16,017	0.3%	20,740	0.3%
Other income (loss)	7,532	0.1%	103,808	1.2%	(31)	0.0%
Less: Net income attributable to non-controlling interests	1,021	0.0%	55	0.0%	461	0.0%
Add-back: Depreciation and amortization	304,766	3.4%	280,921	3.3%	243,791	3.3%
EBITDA	1,447,502	16.0%	1,355,008	16.1%	1,147,592	15.5%
Adjustments:						
Costs associated with our reorganization, including cost-savings initiatives (1)	11,088	0.1%	37,219	0.4%	—	0.0%
Costs incurred in connection with litigation settlement	—	0.0%	8,868	0.1%	—	0.0%
Costs incurred related to legal entity restructuring	6,899	0.1%	—	0.0%	—	0.0%
Integration and other costs related to acquisitions	303	0.0%	2,576	0.0%	27,351	0.4%
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	—	0.0%	(100,420)	(1.2%)	—	0.0%
Adjusted EBITDA and Adjusted EBITDA on revenue margin	$ 1,465,792	16.2%	$ 1,303,251	15.4%	$ 1,174,943	15.9%
Adjusted EBITDA on fee revenue margin		18.2%		17.2%		17.7%

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

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018

Revenue increased by $629.5 million, or 7.5%, for the year ended December 31, 2019 as compared to the year ended December 31, 2018. The revenue increase reflects strong organic growth fueled by higher leasing, sales and commercial mortgage origination activity as well as improved property and project management revenue. Foreign currency translation had a 1.7% negative impact on total revenue during the year ended December 31, 2019, primarily driven by weakness in the Australian dollar, Brazilian real, British pound sterling, Canadian dollar, Chinese yuan, euro and Indian rupee.

Cost of revenue increased by $421.6 million, or 8.4%, for the year ended December 31, 2019 as compared to the same period in 2018, primarily due to higher commission expense resulting from improved leasing and sales transaction revenue. Higher costs in our property and project management business also contributed to the increase. Foreign currency translation had a 1.7% positive impact on total cost of revenue during the year ended December 31, 2019. Cost of revenue as a percentage of revenue was relatively consistent at 60.3% for the year ended December 31, 2019 versus 59.8% for the same period in 2018.

Operating, administrative and other expenses increased by $9.0 million, or 0.4%, for the year ended December 31, 2019 as compared to the year ended December 31, 2018. The increase was largely driven by higher payroll-related costs (partially driven by increased headcount) and higher occupancy costs. Additionally, in the current year, we incurred $6.9 million of costs related to a legal entity restructuring. These items were partially offset by the impact of foreign currency translation, which had a 2.1% positive impact on total operating expenses during the year ended December 31, 2019. During the year ended December 31, 2019, we also incurred $10.5 million of costs in connection with our reorganization (including cost-savings initiatives) as compared to $34.5 million of such costs incurred in the prior year. Lastly, during the year ended December 31, 2018, we incurred $8.9 million of costs as a result of a litigation settlement, which did not recur in 2019.

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, 2019, MSRs contributed to operating income $182.4 million of gains recognized in conjunction with the origination and sale of mortgage loans, offset by $123.0 million of amortization of related intangible assets. 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.

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

Revenue increased by $1.1 billion, or 14.4%, 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 leasing, sales and commercial mortgage origination activity as well as improved property and project revenue. Foreign currency translation had a 0.3% positive impact on total revenue during the year ended December 31, 2018, primarily driven by the strength in the British pound sterling and euro, partially offset by weakness in the Australian dollar and Brazilian real.

Cost of revenue increased by $685.6 million, or 15.7%, for the year ended December 31, 2018 as compared to the same period in 2017, primarily due to higher commission expense resulting from improved leasing and sales transaction revenue. Higher costs in our property and project management business also contributed to the increase. Foreign currency translation had a 0.4% negative impact on total cost of revenue during the year ended December 31, 2018. Cost of revenue as a percentage of revenue was relatively consistent at 59.8% for the year ended December 31, 2018 versus 59.1% for the same period in 2017.

Operating, administrative and other expenses increased by $266.8 million, or 14.1%, for the year ended December 31, 2018 as compared to the year ended December 31, 2017. The increase was largely driven by higher payroll-related costs (partially driven by increased headcount) and higher occupancy costs. During the year ended December 31, 2018, we also incurred $34.5 million of severance costs in connection with our reorganization, including cost-savings initiatives, as well as $8.9 million of costs as a result of a litigation settlement. Foreign currency translation had a 0.7% negative impact on total operating expenses during the year ended December 31, 2018.

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.

Global Workplace Solutions

The following table summarizes our results of operations for our Global Workplace Solutions operating segment for the years ended December 31, 2019, 2018 and 2017 (dollars in thousands):

	Year Ended December 31,					
	2019		2018		2017	
Revenue:						
Fee revenue:						
Global workplace solutions	$ 3,126,931	22.1%	$ 2,739,107	22.2%	$ 2,317,693	21.5%
Total fee revenue	3,126,931	22.1%	2,739,107	22.2%	2,317,693	21.5%
Pass through costs also recognized as revenue	11,037,070	77.9%	9,626,255	77.8%	8,474,270	78.5%
Total revenue	14,164,001	100.0%	12,365,362	100.0%	10,791,963	100.0%
Costs and expenses:						
Cost of revenue	13,138,627	92.8%	11,405,405	92.2%	9,946,851	92.2%
Operating, administrative and other	637,282	4.5%	620,924	5.0%	511,133	4.7%
Depreciation and amortization	120,975	0.9%	147,222	1.2%	136,127	1.3%
Operating income	267,117	1.8%	191,811	1.6%	197,852	1.8%
Equity (loss) income from unconsolidated subsidiaries	(1,423)	0.0%	115	0.0%	—	0.0%
Other (loss) income	(1,170)	0.0%	52	0.0%	1	0.0%
Less: Net (loss) income attributable to non-controlling interests	(271)	0.0%	188	0.1%	(397)	0.0%
Add-back: Depreciation and amortization	120,975	0.9%	147,222	1.2%	136,127	1.3%
EBITDA	385,770	2.7%	339,012	2.7%	334,377	3.1%
Costs associated with our reorganization, including cost-savings initiatives (1)	38,256	0.3%	—	0.0%	—	0.0%
Integration and other costs related to acquisitions	—	0.0%	6,548	0.1%	—	0.0%
Adjusted EBITDA and Adjusted EBITDA on revenue margin	$ 424,026	3.0%	$ 345,560	2.8%	$ 334,377	3.1%
Adjusted EBITDA on fee revenue margin		13.6%		12.6%		14.4%

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

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018

Revenue increased by $1.8 billion, or 14.5%, for the year ended December 31, 2019 as compared to the year ended December 31, 2018. The revenue increase was fueled by growth in the market for real estate outsourcing services. Foreign currency translation had a 2.4% negative impact on total revenue during the year ended December 31, 2019, primarily driven by weakness in the Argentine peso, Australian dollar, Brazilian real, British pound sterling, Canadian dollar, Chinese yuan, euro, and Indian rupee.

Cost of revenue increased by $1.7 billion, or 15.2%, for the year ended December 31, 2019 as compared to the same period in 2018, driven by the higher revenue. Foreign currency translation had a 2.4% positive impact on total cost of revenue during the year ended December 31, 2019. Cost of revenue as a percentage of revenue was relatively consistent at 92.8% for the year ended December 31, 2019 versus 92.2% for the same period in 2018.

Operating, administrative and other expenses increased by $16.4 million, or 2.6%, for the year ended December 31, 2019 as compared to the year ended December 31, 2018. During the year ended December 31, 2019, we incurred $36.3 million of severance costs in connection with our reorganization, including cost-savings initiatives, as well as higher overall costs attributable to the FacilitySource acquisition (acquired in June 2018). These costs were partially offset by the impact of foreign currency translation, which had a 2.7% positive impact on total operating expenses during the year ended December 31, 2019.

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

Revenue increased by $1.6 billion, or 14.6%, for the year ended December 31, 2018 as compared to the year ended December 31, 2017. The revenue increase was fueled by growth in the market for real estate outsourcing services. Foreign currency translation had a 0.5% 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, Brazilian real and Indian rupee.

Cost of revenue increased by $1.5 billion, or 14.7%, for the year ended December 31, 2018 as compared to the same period in 2017, driven by the higher revenue. Foreign currency translation had a 0.5% negative impact on total cost of revenue during the year ended December 31, 2018. Cost of revenue as a percentage of revenue was constant at 92.2% for both the year ended December 31, 2018 and 2017.

Operating, administrative and other expenses increased by $109.8 million, or 21.5%, for the year ended December 31, 2018 as compared to the year ended December 31, 2017. This increase was primarily driven by higher payroll-related costs. Additionally, during the year ended December 31, 2018, we incurred $6.5 million of integration costs associated primarily with the FacilitySource acquisition (acquired in June 2018). These costs were also impacted by foreign currency translation, which had a 0.7% negative impact on total operating expenses during the year ended December 31, 2018.

Real Estate Investments

The following table summarizes our results of operations for our Real Estate Investments operating segment for the years ended December 31, 2019, 2018 and 2017 (dollars in thousands):

	Year Ended December 31,					
	2019		2018		2017	
Revenue:						
Investment management	$ 424,882	64.3%	$ 434,405	81.2%	$ 377,644	82.6%
Development services	235,740	35.7%	100,319	18.8%	79,455	17.4%
Total revenue	660,622	100.0%	534,724	100.0%	457,099	100.0%
Costs and expenses:						
Cost of revenue	84,995	12.9%	—	0.0%	—	0.0%
Operating, administrative and other	628,747	95.2%	583,892	109.2%	453,454	99.2%
Depreciation and amortization	13,483	2.0%	23,845	4.5%	26,196	5.7%
Intangible asset impairment	89,787	13.6%	—	0.0%	—	0.0%
Gain on disposition of real estate	19,817	3.0%	14,874	2.8%	19,828	4.3%
Operating loss	(136,573)	(20.7%)	(58,139)	(10.9%)	(2,723)	(0.6%)
Equity income from unconsolidated subsidiaries	155,454	23.5%	308,532	57.7%	189,467	41.4%
Other income (loss)	22,545	3.4%	(10,840)	(2.0%)	9,435	2.2%
Less: Net income attributable to non-controlling interests	8,343	1.2%	2,486	0.5%	6,403	1.4%
Add-back: Depreciation and amortization	13,483	2.0%	23,845	4.5%	26,196	5.7%
Add-back: Intangible asset impairment	89,787	13.6%	—	0.0%	—	0.0%
EBITDA	136,353	20.6%	260,912	48.8%	215,972	47.3%
Integration and other costs related to acquisitions	14,989	2.3%	—	0.0%	—	0.0%
Carried interest incentive compensation expense (reversal) to align with the timing of associated revenue	13,101	2.0%	(5,261)	(1.0%)	(8,518)	(1.9%)
Impact of fair value adjustments to real estate assets acquired in the Telford Acquisition (purchase accounting) that were sold in period	9,301	1.4%	—	0.0%	—	0.0%
Costs associated with our reorganization, including cost-savings initiatives (1)	221	0.0%	706	0.1%	—	0.0%
Adjusted EBITDA	$ 173,965	26.3%	$ 256,357	47.9%	$ 207,454	45.4%

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

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018

Revenue increased by $125.9 million, or 23.5%, for the year ended December 31, 2019 as compared to the year ended December 31, 2018, primarily driven by the Telford Acquisition in our development services line of business. Foreign currency translation had a 2.6% negative impact on total revenue during the year ended December 31, 2019, primarily driven by weakness in the British pound sterling and euro.

Cost of revenue was $85.0 million for the year ended December 31, 2019 and was attributable to Telford, which we acquired on October 1, 2019.

Operating, administrative and other expenses increased by $44.9 million, or 7.7%, for the year ended December 31, 2019 as compared to the same period in 2018, primarily driven by costs incurred in connection with the Telford Acquisition as well as higher carried interest expense. Higher costs (primarily payroll-related and occupancy) attributable to investments in our new flexible space offering also contributed to the increase. These items were partially offset by lower bonuses in our development services line of business (driven by lower property sales in 2019 as compared to 2018, which were reflected in equity income from unconsolidated subsidiaries). Foreign currency translation also had a 1.8% positive impact on total operating expenses during the year ended December 31, 2019.

A roll forward of our AUM by product type for the year ended December 31, 2019 is as follows (dollars in billions):

	Funds	Separate Accounts	Securities	Total
Balance at January 1, 2019	$ 35.0	$ 60.2	$ 10.3	$ 105.5
Inflows	5.0	10.1	0.7	15.8
Outflows	(2.0)	(6.6)	(5.3)	(13.9)
Market appreciation	2.1	1.2	2.2	5.5
Balance at December 31, 2019	$ 40.1	$ 64.9	$ 7.9	$ 112.9

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, 2018 Compared to Year Ended December 31, 2017

Revenue increased by $77.6 million, or 17.0%, 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 carried interest revenue in our global investment management line of business and higher incentive and development fees in our development services line of business. Foreign currency translation also had a 2.0% positive impact on total revenue during the year ended December 31, 2018, primarily driven by the strength of the British pound sterling and euro.

Operating, administrative and other expenses increased by $130.4 million, or 28.8%, for the year ended December 31, 2018 as compared to the same period in 2017, primarily driven by higher payroll-related costs (including bonuses) and higher carried interest expense. Foreign currency translation had a 1.5% 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):

	Funds	Separate Accounts	Securities	Total
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	$ 35.0	$ 60.2	$ 10.3	$ 105.5

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.

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 2020 include up to approximately $385 million of anticipated capital expenditures, net of tenant concessions. As of December 31, 2019, we had aggregate commitments of $72.1 million to fund future co-investments in our Real Estate Investments business, $46.3 million of which is expected to be funded in 2020. Additionally, as of December 31, 2019, we are committed to fund $50.1 million of additional capital to unconsolidated subsidiaries within our Real Estate Investments business, which we may be required to fund at any time. As of December 31, 2019, we had $2.8 billion of borrowings available under our 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.

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 three elements. The first is the repayment of the outstanding and anticipated principal amounts of our long-term indebtedness. If our cash flow is insufficient to repay our long-term debt when it comes due, 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, 2019 and 2018, we had accrued $111.7 million ($41.6 million of which was a current liability) and $136.3 million ($41.7 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.

Lastly, in October 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 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, under the October 2016 program, 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. In February 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 previous program terminated upon the effectiveness of the new program. In both August 2019 and November 2019, our board of directors authorized an additional $100.0 million under our new program, bringing the total authorized amount under the new program to a total of $500.0 million as of March 2, 2020.

During the year ended December 31, 2019, under the March 2019 program, we spent $100.0 million to repurchase 1,936,458 shares of our Class A common stock with an average price paid per share of $51.64. As of March 2, 2020, we had $400.0 million of capacity remaining under our current stock repurchase program. Our stock repurchases have been funded with cash on hand and we intend to continue funding future stock repurchases with existing cash. 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 $1.2 billion for the year ended December 31, 2019, an increase of $92.1 million as compared to the year ended December 31, 2018. The increase in net cash provided by operating activities was primarily due to improved operating performance, partially offset by lower distribution of earnings from unconsolidated subsidiaries during the year ended December 31, 2019.

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.

Investing Activities

Net cash used in investing activities totaled $721.0 million for the year ended December 31, 2019, an increase of $160.3 million as compared to the year ended December 31, 2018. This increase was largely driven by an increase of $65.7 million in capital expenditures and higher amounts paid for acquisitions (driven by the Telford Acquisition) during the year ended December 31, 2019. Additionally, higher contributions to unconsolidated subsidiaries and lower distributions received from unconsolidated subsidiaries during the year ended December 31, 2019 contributed to the higher net use of cash in 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.

Financing Activities

Net cash used in financing activities totaled $271.9 million for the year ended December 31, 2019, a decrease of $234.7 million as compared to the year ended December 31, 2018. This decrease was primarily due to the impact of the full redemption of the $800.0 million aggregate outstanding principal amount of our 5.00% senior notes (including $20.0 million premium) during the year ended December 31, 2018. This was partially offset by the impact of higher net borrowings of $552.7 million from our senior term loans during the year ended December 31, 2018 and the repayment of debt assumed in the Telford Acquisition of $110.7 million during the year ended December 31, 2019.

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.

Summary of Contractual Obligations and Other Commitments

The following is a summary of our various contractual obligations and other commitments as of December 31, 2019 (dollars in thousands):

	Payments Due by Period				
Contractual Obligations	**Total**	**Less than 1 year**	**1 - 3 years**	**3 - 5 years**	**More than 5 years**
Total gross long-term debt (1)	$ 1,775,392	$ 1,814	$ 47	$ 748,531	$ 1,025,000
Short-term borrowings (2)	981,709	981,709	—	—	—
Operating leases (3)	1,432,656	175,958	378,357	308,981	569,360
Financing leases (3)	99,041	35,532	46,578	16,931	—
Defined benefit pension liability (4)	107,996	107,996	—	—	—
Total gross notes payable on real estate (5)	13,271	6,773	6,498	—	—
Deferred purchase consideration (6)	111,664	41,569	25,211	40,100	4,784
Total Contractual Obligations	$ 4,521,729	$ 1,351,351	$ 456,691	$ 1,114,543	$ 1,599,144

	Amount of Other Commitments Expiration				
Other Commitments	**Total**	**Less than 1 year**	**1 - 3 years**	**3 - 5 years**	**More than 5 years**
Self-insurance reserves (7)	$ 125,837	$ 125,837	$ —	$ —	$ —
Tax liabilities (8)	108,301	14,654	38,198	55,449	—
Co-investments (9) (10)	122,270	96,487	14,939	4,567	6,277
Letters of credit (9)	91,766	91,766	—	—	—
Guarantees (9) (11)	80,143	80,143	—	—	—
Total Other Commitments	$ 528,317	$ 408,887	$ 53,137	$ 60,016	$ 6,277

(1) Reflects gross outstanding long-term debt balances as of December 31, 2019, 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): 2020 – $63,000; 2021 to 2022 – $126,000; 2023 to 2024 – $115,874 and thereafter – $38,582.

(2) The majority of this balance 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 14 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) Reflects gross outstanding notes payable on real estate as of December 31, 2019 (only $0.6 million of which is recourse to us, beyond being recourse to the single-purpose entity that held the real estate asset and was the primary obligor on the note payable), assumed to be paid at maturity, excluding unamortized deferred financing costs. Amounts do not include scheduled interest payments. The notes have either fixed or variable interest rates, ranging from 4.29% to 4.75% at December 31, 2019.

(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, 2019 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, 2019 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, 2019, we have a remaining federal tax liability of $107.8 million (of which $14.2 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. We are paying the federal tax liability for the Transition Tax in annual interest-free installments over a period of eight years through 2025 as allowed by the Tax Act.

In addition, as of December 31, 2019, our current and non-current tax liabilities (including interest and penalties) for uncertain tax positions, totaled $141.1 million. Of this amount, we can reasonably estimate that $0.5 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 $140.6 million. See Note 15 of our Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report.

(9) See Note 13 of our Notes to the Consolidated Financial Statements set forth in Item 8 of this Annual Report.

(10) Includes $72.1 million to fund future co-investments in our Real Estate Investments segment, $46.3 million of which is expected to be funded in 2020, and $50.1 million committed to invest in unconsolidated real estate subsidiaries as a principal, which is callable at any time.

(11) 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 October 31, 2017, CBRE Services, Inc. (CBRE Services), our wholly-owned subsidiary, entered into a Credit Agreement (the 2017 Credit Agreement), which refinanced and replaced our prior credit agreement (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 euro term loan facility under the 2017 Credit Agreement in an aggregate principal amount of €400.0 million. The proceeds from the euro term loan facility were used to repay a portion of the U.S. dollar denominated term loans outstanding under the 2017 Credit Agreement. On March 4, 2019, CBRE Services entered into an additional incremental assumption agreement with respect to the 2017 Credit Agreement (the 2017 Agreement as amended by such incremental assumption agreement, the 2019 Credit Agreement), which (i) extended the maturity of the U.S. dollar tranche A term loans under the 2017 Credit Agreement, (ii) extended the termination date of the revolving credit commitments available under the 2017 Credit Agreement and (iii) made certain changes to the interest rates and fees applicable to such tranche A term loans and revolving credit commitments. The proceeds from the new tranche A term loan facility under the 2019 Credit Agreement were used to repay the $300.0 million of tranche A term loans outstanding under the 2017 Credit Agreement.

The 2019 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, 2019, the 2019 Credit Agreement provided for the following: (1) a $2.8 billion incremental revolving credit facility, which includes the capacity to obtain letters of credit and swingline loans and terminates on March 4, 2024; (2) a $300.0 million incremental tranche A term loan facility maturing on March 4, 2024, requiring quarterly principal payments unless our leverage ratio (as defined in the 2019 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 and (3) a €400.0 million 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 2019 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 2019 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 $270.0 million of 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, N.A., TD Bank, N.A., Capital One, N.A. and MUFG Union Bank, 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. Historically, we have entered into interest rate swap agreements to attempt to hedge the variability of future interest payments due to changes in interest rates. As of December 31, 2019, we do not have any outstanding interest rate swap agreements.

The estimated fair value of our senior term loans was approximately $745.5 million at December 31, 2019. Based on dealers’ quotes, the estimated fair values of our 4.875% senior notes and 5.25% senior notes were $670.7 million and $478.3 million, respectively, at December 31, 2019.

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, 2019, the net impact of the additional interest cost would be a decrease of $7.5 million on pre-tax income and a decrease of $7.5 million in cash provided by operating activities for the year ended December 31, 2019.

Item 8. Financial Statements and Supplementary Data.

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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.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of CBRE Group, Inc. and subsidiaries (the Company) as of December 31, 2019 and 2018, 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, 2019, and the related notes and financial statement schedule II (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated March 2, 2020 expressed an adverse opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 3 to the consolidated financial statements, the Company has changed its method of accounting for leases in 2019 due to the adoption of Accounting Standards Codification Topic 842, *Leases*.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the 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. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgment. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Assessment of Gross Unrecognized Tax Benefits

As discussed in Notes 2 and 15 to the consolidated financial statements, the Company has recorded gross unrecognized tax benefits of $141.2 million as of December 31, 2019. The Company utilizes a two-step approach to recognizing and measuring uncertain tax positions. The first step is to evaluate the tax position for recognition by determining if the available evidence indicates there is more than a 50% likelihood that the position will be sustained upon examination, including resolution of related appeals or litigation processes. The second step is to measure the tax benefit as the largest amount which is more than 50% likely of being realized upon ultimate settlement.

We identified the assessment of the gross unrecognized tax benefits as a critical audit matter. Complex auditor judgment was required in evaluating the Company's interpretation of tax law and its estimate of the resolution of the tax positions underlying the unrecognized tax benefits.

The primary procedures we performed to address this critical audit matter included the following. We tested certain internal controls over the Company's unrecognized tax benefits process, including the interpretation of tax law and the estimate of the unrecognized tax benefits. Since tax law is complex and often subject to interpretations, we involved tax and valuation professionals with specialized skills and knowledge, who assisted in:

- Evaluating the Company's interpretation of tax law and the potential impact on the Company's tax positions,
- Assessing transfer pricing policies for compliance with applicable laws and regulations,
- Inspecting settlement documents with applicable taxing authorities, and assessing the expiration of statutes of limitations, and
- Performing an independent assessment of certain of the Company's tax positions and comparing the results to the Company's assessment.

/s/ KPMG LLP

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

Los Angeles, California
March 2, 2020

Report of Independent Registered Public Accounting Firm

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

Opinion on Internal Control Over Financial Reporting

We have audited CBRE Group, Inc. and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, because of the effect of the material weaknesses, described below, on the achievement of the objectives of the control criteria, the Company has not maintained effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, 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, 2019, and the related notes and financial statement schedule II (collectively, the consolidated financial statements), and our report dated March 2, 2020 expressed an unqualified opinion on those consolidated financial statements.

The Company acquired Telford Homes Plc during 2019 and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2019 Telford Homes Plc's internal control over financial reporting associated with total assets of $525.4 million and total revenues of $97.5 million included in the consolidated financial statements of the Company as of and for the year ended December 31, 2019. Our audit of internal control over financial reporting of the Company also excluded an evaluation of the internal control over financial reporting of Telford Homes Plc.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weaknesses have been identified and included in management's assessment:

- The Global Workplace Solutions segment in the Company's EMEA region (GWS EMEA) did not have sufficient resources with the appropriate reporting lines, roles and responsibilities, authority, training and skill sets to design and operate financial activities, including controls, in an appropriate and timely manner.

- GWS EMEA did not effectively assess and address the risks posed by changes in the business and the related effect on the GWS EMEA system of internal controls. In relation to this, specific to the rollout of GWS EMEA's primary financial system, GWS EMEA did not effectively operate general information technology controls related to financial data migrations, user access, system changes and financial data processing. Because of the deficiencies in general information technology controls, the business process controls (automated and manual) that are dependent on this system were also deemed ineffective because they could have been adversely impacted.

- GWS EMEA did not design or execute control activities that sufficiently mitigated the financial reporting risks related to GWS EMEA.

- GWS EMEA did not have an effective information and communication process to identify, capture and process relevant information necessary for financial accounting and reporting.

- The Company did not monitor the presentation and effectiveness of components of internal control through evaluation and remediation in an appropriate manner within GWS EMEA and GWS EMEA was not sufficiently integrated with the corporate oversight function.

Consequently, there were control failures for GWS EMEA in the areas of revenue and receivables, balance sheet account reconciliations, journal entries and general information technology controls. The material weaknesses were considered in determining the nature, timing, and extent of audit tests applied in our audit of the 2019 consolidated financial statements, and this report does not affect our report on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying *Management's Report on Internal Control Over Financial Reporting*. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

Los Angeles, California
March 2, 2020

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

	December 31, 2019	December 31, 2018
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 971,781	$ 777,219
Restricted cash	121,964	86,725
Receivables, less allowance for doubtful accounts of $72,725 and $60,348 at December 31, 2019 and 2018, respectively	4,466,674	3,668,591
Warehouse receivables	993,058	1,342,468
Contract assets	328,012	307,020
Prepaid expenses	282,741	254,892
Income taxes receivable	93,915	71,684
Other current assets	276,319	245,611
Total Current Assets	7,534,464	6,754,210
Property and equipment, net	836,206	721,692
Goodwill	3,753,493	3,652,309
Other intangible assets, net of accumulated amortization of $1,358,528 and $1,180,393 at December 31, 2019 and 2018, respectively	1,379,546	1,441,308
Operating lease assets	997,966	—
Investments in unconsolidated subsidiaries	426,711	216,174
Non-current contract assets	201,760	74,762
Real estate under development	185,508	4,586
Non-current income taxes receivable	139,136	—
Deferred tax assets, net	73,864	51,703
Other assets, net	668,542	540,049
Total Assets	$ 16,197,196	$ 13,456,793
LIABILITIES AND EQUITY		
Current Liabilities:		
Accounts payable and accrued expenses	$ 2,436,084	$ 1,919,827
Compensation and employee benefits payable	1,324,990	1,121,179
Accrued bonus and profit sharing	1,261,974	1,189,395
Operating lease liabilities	168,663	—
Contract liabilities	108,671	82,227
Income taxes payable	30,207	68,100
Short-term borrowings:		
Warehouse lines of credit (which fund loans that U.S. Government Sponsored Enterprises have committed to purchase)	977,175	1,328,761
Other	4,534	—
Total short-term borrowings	981,709	1,328,761
Current maturities of long-term debt	1,814	3,146
Other current liabilities	122,339	90,745
Total Current Liabilities	6,436,451	5,803,380
Long-term debt, net of current maturities	1,761,245	1,767,260
Non-current operating lease liabilities	1,057,758	—
Non-current income taxes payable	93,647	—
Non-current tax liabilities	85,966	172,626
Deferred tax liabilities, net	34,593	107,425
Other liabilities	454,424	596,200
Total Liabilities	9,924,084	8,446,891
Commitments and contingencies	—	—
Equity:		
CBRE Group, Inc. Stockholders' Equity:		
Class A common stock; $0.01 par value; 525,000,000 shares authorized; 334,752,283 and 336,912,783 shares issued and outstanding at December 31, 2019 and 2018, respectively	3,348	3,369
Additional paid-in capital	1,115,944	1,149,013
Accumulated earnings	5,793,149	4,504,684
Accumulated other comprehensive loss	(679,748)	(718,269)
Total CBRE Group, Inc. Stockholders' Equity	6,232,693	4,938,797
Non-controlling interests	40,419	71,105
Total Equity	6,273,112	5,009,902
Total Liabilities and Equity	$ 16,197,196	$ 13,456,793

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,		
	2019	2018	2017
Revenue	$ 23,894,091	$ 21,340,088	$ 18,628,787
Costs and expenses:			
Cost of revenue	18,689,013	16,449,212	14,305,099
Operating, administrative and other	3,436,009	3,365,773	2,858,720
Depreciation and amortization	439,224	451,988	406,114
Intangible asset impairment	89,787	—	—
Total costs and expenses	22,654,033	20,266,973	17,569,933
Gain on disposition of real estate	19,817	14,874	19,828
Operating income	1,259,875	1,087,989	1,078,682
Equity income from unconsolidated subsidiaries	160,925	324,664	210,207
Other income	28,907	93,020	9,405
Interest expense, net of interest income	85,754	98,685	126,961
Write-off of financing costs on extinguished debt	2,608	27,982	—
Income before provision for income taxes	1,361,345	1,379,006	1,171,333
Provision for income taxes	69,895	313,058	467,757
Net income	1,291,450	1,065,948	703,576
Less: Net income attributable to non-controlling interests	9,093	2,729	6,467
Net income attributable to CBRE Group, Inc.	$ 1,282,357	$ 1,063,219	$ 697,109
Basic income per share:			
Net income per share attributable to CBRE Group, Inc.	$ 3.82	$ 3.13	$ 2.06
Weighted average shares outstanding for basic income per share	335,795,654	339,321,056	337,658,017
Diluted income per share:			
Net income per share attributable to CBRE Group, Inc.	$ 3.77	$ 3.10	$ 2.05
Weighted average shares outstanding for diluted income per share	340,522,871	343,122,741	340,783,556

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,		
	2019	**2018**	**2017**
Net income	$ 1,291,450	$ 1,065,948	$ 703,576
Other comprehensive income (loss):			
Foreign currency translation (loss) gain	(14,092)	(161,384)	218,001
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 $471, $876 and $3,066 income tax expense for the years ended December 31, 2019, 2018 and 2017, respectively	1,320	2,439	4,964
Unrealized gains on interest rate swaps, net of $254 and $362 income tax expense for the years ended December 31, 2018 and 2017, respectively	—	708	585
Unrealized holding gains (losses) on available for sale debt securities, net of $559 income tax expense, $349 income tax benefit and $1,685 income tax expense for the years ended December 31, 2019, 2018 and 2017, respectively	2,101	(971)	2,737
Pension liability adjustments, net of $194, $269 and $2,601 income tax expense for the years ended December 31, 2019, 2018 and 2017, respectively	944	1,315	12,701
Legal entity restructuring, net of $17,694 income tax expense for the year ended December 31, 2019	63,149	—	—
Other, net of $3,795 and $3,550 income tax benefit and $342 income tax expense for the years ended December 31, 2019, 2018 and 2017, respectively	(14,946)	(5,070)	364
Total other comprehensive income (loss)	38,476	(166,927)	239,352
Comprehensive income	1,329,926	899,021	942,928
Less: Comprehensive income attributable to non-controlling interests	9,048	1,657	6,879
Comprehensive income attributable to CBRE Group, Inc.	$ 1,320,878	$ 897,364	$ 936,049

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,		
	2019	2018	2017
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net income	$ 1,291,450	$ 1,065,948	$ 703,576
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	439,224	451,988	406,114
Amortization and write-off of financing costs on extinguished debt	8,662	35,175	10,783
Gains related to mortgage servicing rights, premiums on loan sales and sales of other assets	(246,690)	(229,376)	(200,386)
Intangible asset impairment	89,787	—	—
Gain associated with remeasuring our investment in a joint venture entity to fair value at the date we acquired the remaining interest	—	(100,420)	—
Net realized and unrealized (gains) losses from investments	(28,907)	7,400	(9,405)
Provision for doubtful accounts	20,373	19,760	8,044
Compensation expense for equity awards	127,738	128,171	93,087
Equity income from unconsolidated subsidiaries	(160,925)	(324,664)	(210,207)
Distribution of earnings from unconsolidated subsidiaries	199,011	336,925	211,855
Proceeds from sale of mortgage loans	19,805,060	20,230,676	18,052,756
Origination of mortgage loans	(19,389,979)	(20,591,602)	(17,655,104)
(Decrease) increase in warehouse lines of credit	(351,586)	417,995	(343,887)
Tenant concessions received	21,249	38,400	19,337
Purchase of equity securities	(83,001)	(99,789)	(110,570)
Proceeds from sale of equity securities	46,949	75,120	68,547
Decrease (increase) in real estate under development	34,776	(4,586)	2,472
Increase in receivables, prepaid expenses and other assets (including contract and lease assets)	(824,490)	(773,361)	(534,190)
Increase in accounts payable and accrued expenses and other liabilities (including contract and lease liabilities)	306,677	273,782	159,145
Increase in compensation and employee benefits payable and accrued bonus and profit sharing	244,895	270,371	148,714
(Increase) decrease in net income taxes receivable/payable	(274,436)	(47,074)	108,151
Other operating activities, net	(52,457)	(49,590)	(34,421)
Net cash provided by operating activities	1,223,380	1,131,249	894,411
CASH FLOWS FROM INVESTING ACTIVITIES:			
Capital expenditures	(293,514)	(227,803)	(178,042)
Acquisition of businesses, including net assets acquired, intangibles and goodwill, net of cash acquired	(355,926)	(322,573)	(118,427)
Contributions to unconsolidated subsidiaries	(105,947)	(62,802)	(68,700)
Distributions from unconsolidated subsidiaries	33,289	61,709	63,664
Purchase of equity securities	(12,017)	(21,402)	(15,584)
Proceeds from sale of equity securities	15,623	16,314	15,587
Purchase of available for sale debt securities	(8,853)	(23,360)	(19,280)
Proceeds from the sale of available for sale debt securities	4,671	5,792	15,790
Other investing activities, net	1,650	13,441	2,392
Net cash used in investing activities	(721,024)	(560,684)	(302,600)

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,		
	2019	2018	2017
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from senior term loans	300,000	1,002,745	200,000
Repayment of senior term loans	(300,000)	(450,000)	(751,876)
Proceeds from revolving credit facility	3,609,000	3,258,000	1,521,000
Repayment of revolving credit facility	(3,609,000)	(3,258,000)	(1,521,000)
Repayment of 5.00% senior notes (including premium)	—	(820,000)	—
Repayment of debt assumed in acquisition of Telford Homes	(110,687)	—	—
Repayment of debt assumed in acquisition of FacilitySource	—	(26,295)	—
Repurchase of common stock	(145,137)	(161,034)	—
Acquisition of businesses (cash paid for acquisitions more than three months after purchase date)	(42,147)	(18,660)	(24,006)
Units repurchased for payment of taxes on equity awards	(18,426)	(29,386)	(29,549)
Non-controlling interest contributions	46,612	25,355	5,301
Non-controlling interest distributions	(3,957)	(13,413)	(8,715)
Other financing activities, net	1,793	(15,912)	(18,897)
Net cash used in financing activities	(271,949)	(506,600)	(627,742)
Effect of currency exchange rate changes on cash and cash equivalents and restricted cash	(606)	(24,840)	29,338
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS AND RESTRICTED CASH	229,801	39,125	(6,593)
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT BEGINNING OF PERIOD	863,944	824,819	831,412
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT END OF PERIOD	$ 1,093,745	$ 863,944	$ 824,819
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:			
Cash paid during the period for:			
Interest	$ 86,666	$ 104,165	$ 117,164
Income taxes, net	$ 365,065	$ 375,849	$ 356,997

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							
					Accumulated other comprehensive loss			
	Shares	Class A common stock	Additional paid-in capital	Accumulated earnings	Minimum pension liability	Foreign currency translation and other	Non-controlling interests	Total
Balance at December 31, 2016	337,279,449	$ 3,373	$ 1,145,226	$ 2,745,897	$ (165,670)	$ (625,684)	$ 42,758	$ 3,145,900
Net income	—	—	—	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
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	—	—	—	—	—	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	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	—	—	—	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)

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				Accumulated other comprehensive loss			
	Shares	Class A common stock	Additional paid-in capital	Accumulated earnings	Minimum pension liability	Foreign currency translation and other	Non-controlling interests	Total
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	336,912,783	3,369	1,149,013	4,504,684	(147,907)	(570,362)	71,105	5,009,902
Net income	—	—	—	1,282,357	—	—	9,093	1,291,450
Pension liability adjustments, net of tax	—	—	—	—	944	—	—	944
Restricted stock awards vesting	920,407	9	(9)	—	—	—	—	—
Compensation expense for equity awards	—	—	127,738	—	—	—	—	127,738
Units repurchased for payment of taxes on equity awards	—	—	(18,426)	—	—	—	—	(18,426)
Repurchase of common stock	(3,080,907)	(31)	(145,106)	—	—	—	—	(145,137)
Foreign currency translation loss	—	—	—	—	—	(14,047)	(45)	(14,092)
Amounts reclassified from accumulated other comprehensive loss to interest expense, net of tax	—	—	—	—	—	1,320	—	1,320
Unrealized holding gains on available for sale debt securities, net of tax	—	—	—	—	—	2,101	—	2,101
Contributions from non-controlling interests	—	—	—	—	—	—	46,612	46,612
Distributions to non-controlling interests	—	—	—	—	—	—	(3,957)	(3,957)
Deconsolidation of investments	—	—	—	—	—	—	(76,349)	(76,349)
Legal entity restructuring, net	—	—	—	—	—	63,149	—	63,149
Other	—	1	2,734	6,108	—	(14,946)	(6,040)	(12,143)
Balance at December 31, 2019	334,752,283	$ 3,348	$ 1,115,944	$ 5,793,149	$ (146,963)	$ (532,785)	$ 40,419	$ 6,273,112

The accompanying notes are an integral part of these 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 2019 revenue, with leading global market positions in our leasing, property sales, occupier outsourcing and valuation businesses. Our business is focused on providing services to real estate occupiers and investors. 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, mortgage origination, sales 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, 2019, we operated in more than 530 offices worldwide with more than 100,000 employees, excluding independent affiliates, providing services under the following brand names: "CBRE" (real estate advisory and outsourcing services); "CBRE Global Investors" (investment management); "Trammell Crow Company" (U.S. development); "Telford Homes" (U.K. development) and "Hana" (flexible-space solutions).

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: (i) the power to direct the activities of a VIE that most significantly impact such entity's economic performance; and (ii) 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.

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

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 income (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.

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. Equity instruments that do not have readily determinable fair values and do not qualify for using the net asset value per share practical expedient in the *"Fair Value Measurements and Disclosures"* topic (Topic 820) of the FASB ASC are measured at cost, less any impairment.

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, 2019, 2018 and 2017.

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, 2019 and 2018 is cash and cash equivalents of $70.5 million and $155.2 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, 2019 and 2018 is restricted cash of $122.0 million and $86.7 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 $6.1 billion and $5.9 billion at December 31, 2019 and 2018, 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.

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.

Real Estate

Classification and Impairment Evaluation

We classify real estate in accordance with the criteria of the "*Property, Plant and Equipment*" Topic of the FASB ASC (Topic 360) as follows: (i) real estate held for sale, which includes completed assets or land for sale in its present condition that meet all of Topic 360's "held for sale" criteria; (ii) real estate under development (current), which includes real estate that we are in the process of developing that is expected to be completed and disposed of within one year of the balance sheet date; (iii) real estate under development (non-current), which includes real estate that we are in the process of developing that is expected to be completed and disposed of more than one year from the balance sheet date; or (iv) real estate held for investment, which consists of land on which development activities have not yet commenced and completed assets or land held for disposition that do not meet the "held for sale" criteria. Any asset reclassified from real estate held for sale to real estate under development (current or non-current) or real estate held for investment is recorded individually at the lower of its fair value at the date of the reclassification or its carrying amount before it was classified as "held for sale," adjusted (in the case of real estate held for investment) for any depreciation that would have been recognized had the asset been continuously classified as real estate held for investment.

Real estate held for sale is recorded at the lower of cost or fair value less cost to sell. If an asset's fair value less cost to sell, based on discounted future cash flows, management estimates or market comparisons, is less than its carrying amount, an allowance is recorded against the asset. Real estate under development and real estate held for investment are carried at cost less depreciation, as applicable. Buildings and improvements included in real estate held for investment are depreciated using the straight-line method over estimated useful lives, generally up to 39 years. Tenant improvements included in real estate held for investment are amortized using the straight-line method over the shorter of their estimated useful lives or terms of the respective leases. Land improvements included in real estate held for investment are depreciated over their estimated useful lives, up to 15 years.

A summary of our real estate assets is as follows (dollars in thousands):

	December 31, 2019	December 31, 2018
Real estate under development, current (included in other current assets)	$ 14,757	$ —
Real estate and other assets held for sale (included in other current assets)	5,066	24
Real estate under development	185,508	4,586
Real estate held for investment (included in other assets, net)	8,101	9,923
Total real estate	$ 213,432	$ 14,533

Real estate under development and real estate held for investment are evaluated for impairment and losses are recorded when undiscounted cash flows estimated to be generated by an asset are less than the asset's carrying amount. The amount of the impairment loss, if any, is calculated as the excess of the asset's carrying value over its fair value, which is determined using a discounted cash flow analysis, management estimates or market comparisons.

Cost Capitalization and Allocation

When acquiring, developing and constructing real estate assets, we capitalize recoverable costs. Capitalization begins when the activities related to development have begun and ceases when activities are substantially complete and the asset is available for occupancy. Recoverable costs capitalized include pursuit costs, or pre-acquisition/pre-construction costs, taxes and insurance, interest, development and construction costs and costs of incidental operations. We do not capitalize any internal costs when acquiring, developing and constructing real estate assets. We expense transaction costs for acquisitions that qualify as a business in accordance with the "*Business Combinations*" Topic of the FASB ASC (Topic 805). Pursuit costs capitalized in connection with a potential development project that we have determined not to pursue are written off in the period that determination is made.

At times, we purchase bulk land that we intend to sell or develop in phases. The land basis allocated to each phase is based on the relative estimated fair value of the phases before construction. We allocate construction costs incurred relating to more than one phase between the various phases; if the costs cannot be specifically attributed to a certain phase or the improvements benefit more than one phase, we allocate the costs between the phases based on their relative estimated sales values, where practicable, or other value methods as appropriate under the circumstances. Relative allocations of the costs are revised as the sales value estimates are revised.

When acquiring real estate with existing buildings, we allocate the purchase price between land, land improvements, building and intangibles related to in-place leases, if any, based on their relative fair values. The fair values of acquired land and buildings are determined based on an estimated discounted future cash flow model with lease-up assumptions as if the building was vacant upon acquisition. The fair value of in-place leases includes the value of lease intangibles for above or below-market rents and tenant origination costs, determined on a lease by lease basis. The capitalized values for both lease intangibles and tenant origination costs are amortized over the term of the underlying leases. Amortization related to lease intangibles is recorded as either an increase to or a reduction of rental income and amortization for tenant origination costs is recorded to amortization expense.

Disposition of Real Estate

We account for gains and losses on the sale of real estate and other nonfinancial assets or in substance nonfinancial assets to noncustomers that are not a output of our ordinary activities and are not a business in accordance with Topic 610-20, *"Other Income – Gains and Losses from the Derecognition of Nonfinancial Assets"* Where we do not have a controlling financial interest in the entity that holds the transferred assets after the transaction, we derecognize the assets or in substance nonfinancial assets and recognize a gain or loss when control of the underlying assets transfer to the counterparty.

We may also dispose of real estate through the transfer of a long-term leasehold representing a major part of the remaining economic life of the property. We account for these transfers as sales-type leases in accordance with the "*Lease*s" Topic of the FASB ASC (Topic 842) by derecognizing the carrying amount of the underlying asset, recognizing any net investment in the lease and recognizing selling profit or loss in net income.

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, our acquisition of FacilitySource Holdings, LLC (FacilitySource) in 2018 and our acquisition of Telford Homes Plc (Telford) on October 1, 2019. 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 and trade names/trademarks, 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 FASB ASC Topic 350, "*Intangibles – Goodwill and Other*" (Topic 350). 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 $17.0 million and $18.3 million as of December 31, 2019 and 2018, respectively.

During 2019, we entered into an additional incremental assumption agreement with respect to our credit agreement which: (i) extended the maturity of the U.S. dollar tranche A term loans, (ii) extended the termination date of the revolving credit commitments available and (iii) made certain changes to the interest rates and fees applicable to such tranche A term loans and revolving credit commitments. During the year ended December 31, 2019, we incurred approximately $5.8 million of financing costs, of which $2.6 million were included in write-off of financing costs on extinguished debt in the accompanying consolidated statements of operations.

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. Additionally, during 2018, we entered into an incremental term loan assumption agreement with respect to our credit agreement in connection with which we incurred approximately $1.6 million of financing costs.

During 2017, we entered into a credit agreement in connection with which we incurred approximately $8.0 million of financing costs.

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

Revenue Recognition

We account for revenue with customers in accordance with FASB ASC Topic, "*Revenue from Contracts with Customers*" (Topic 606). 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 the new revenue recognition guidance on January 1, 2018, using the full retrospective method. 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 18 and 19.

Advisory Services

Our Advisory Services segment provides a comprehensive range of services globally, including property leasing, property sales, mortgage services, property management, project management services and valuation services.

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.

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.

Property Management and Project 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.

Project management services are often 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. 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 certain project management arrangements is presented gross (with offsetting expense recorded in cost of revenue) for reimbursements of costs of third-party services because we control those services that are delivered to the client. In the instances where 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.

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.

Global Workplace Solutions

Our Global Workplace Solutions segment provides a broad suite of integrated, contractually-based outsourcing services globally for occupiers of real estate, including facilities management, project management and transaction services.

Facilities Management and Project Management Services

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.

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 revenue) 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.

Transaction Services

We provide strategic advice and execution for occupiers of real estate in connection with the leasing, sale or acquisition of office, industrial and retail space. Within the Global Workplace Solutions business, transaction services are performed for account-based clients, often as a key part of an integrated suite of commercial real estate services (with leasing being the most meaningful revenue stream included in our Global Workplace Solutions revenue). Similar to the transaction services (leasing sale or acquisition of space) we perform in our Advisory Services segment, we are compensated for our services in the form of a commission whereby a portion of our leasing commission may be paid upon signing of the lease by the client, with the remaining paid upon occurrence of another future contingent event. 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.

Real Estate Investments

Our Real Estate Investments segment is comprised of investment management services provided globally; development services in the U.S. and United Kingdom (U.K.) and a service designed to help property occupiers and owners meet the growing demand for flexible office space solutions on a global basis.

Investment Management Services

Our investment management services are provided to pension funds, insurance companies, sovereign wealth funds, foundations, endowments and other institutional investors seeking to generate returns and diversification through investment in real assets. 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 consist 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. In addition, with our recent acquisition of Telford Homes, we also develop residential-led, mixed-use sites in locations across London.

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. Sales of real estate to customers which are considered an output of ordinary activities are recognized as revenue when or as control of the assets are transferred to the customer.

Flexible-Space Solutions

Flexible-space solutions operations are conducted through our indirect wholly-owned subsidiary, CBRE Hana, LLC, which we also refer to as Hana. Hana develops and operates integrated, scalable, flexible workspaces, which contain office suites, conference rooms and event space and communal co-working space. Hana helps institutional property owners meet the rapidly growing demand from real estate occupiers for flexible office space solutions. Member services represent a series of distinct daily services rendered over time. Revenue is recognized at the end of each period for the fees associated with the services performed.

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, 2019, 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, development and construction revenue in development services 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.

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 Global Workplace Solutions segment. 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 revenue 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 $76.1 million, $74.8 million and $63.1 million were included in operating, administrative and other expenses for the years ended December 31, 2019, 2018 and 2017, 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 15).

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 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, 2019 and 2018, 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 (MSRs)

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 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, 2019 and 2018 was as follows (dollars in thousands):

	Year Ended December 31,	
	2019	2018
Beginning balance, mortgage servicing rights	$ 424,470	$ 373,131
Mortgage servicing rights recognized	182,443	173,737
Mortgage servicing rights sold	—	—
Amortization expense	(123,008)	(115,743)
Other	(413)	(6,655)
Ending balance, mortgage servicing rights	$ 483,492	$ 424,470

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, 2019, 2018 and 2017 in measuring fair value were as follows:

	Year Ended December 31,		
	2019	2018	2017
Discount rate	10.12%	10.00%	10.06%
Conditional prepayment rate	10.34%	8.89%	8.88%

The estimated fair value of our MSRs was $579.8 million and $554.2 million as of December 31, 2019 and 2018, 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, 2019, 2018 or 2017. No valuation allowance was created previously and we did not record a valuation allowance for MSRs in 2019 or 2018.

Included in revenue in the accompanying consolidated statements of operations are contractually specified servicing fees from loans serviced for others of $191.8 million, $167.5 million and $144.2 million for the years ended December 31, 2019, 2018 and 2017, respectively, and prepayment fees/late fees/ancillary income earned from loans serviced for others of $14.9 million, $15.9 million and $13.2 million for the years ended December 31, 2019, 2018 and 2017, 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. We do not estimate forfeitures, but instead recognize forfeitures when they occur.

See Note 14 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.

We utilize a two-step approach to recognizing and measuring uncertain tax positions. The first step is to evaluate the tax position for recognition by determining if the available evidence indicates there is more than a 50% likelihood that the position will be sustained upon examination, including resolution of related appeals or litigation processes. The second step is to measure the tax benefit as the largest amount which is more than 50% likely of being realized upon ultimate settlement.

The Tax Cuts and Jobs Act (the Tax Act) 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"). 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.

See Note 15 for additional information on income taxes.

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, 2019 and 2018, our reserves for claims under these insurance programs were $125.8 million and $113.0 million, respectively, of which $1.8 million and $2.7 million, respectively, represented our estimated current liabilities.

Reclassifications

Certain reclassifications have been made to the 2018 and 2017 financial statements to conform with the 2019 presentation.

3. New Accounting Pronouncements

Recently Adopted Accounting Pronouncements

The FASB previously issued six ASUs related to leases. The ASUs issued were: (1) in February 2016, ASU 2016-02, "*Leases (Topic 842)*", (2) in January 2018, ASU 2018-01, "*Leases (Topic 842): Land Easement Practical Expedient for Transition to Topic 842*", (3) in July 2018, ASU 2018-10, "*Codification Improvements to Topic 842, Leases*", (4) in July 2018, ASU 2018-11, "*Targeted Improvements*", (5) in December 2018, ASU 2018-20, "*Leases (Topic 842): Narrow-Scope Improvements for Lessors*" and (6) in March 2019, ASU 2019-01, "*Leases (Topic 842): Codification Improvements.*" 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 previous lease accounting literature, but without relying upon the bright-line tests. The amendments in ASU 2018-01 specify how land easements are within the scope of Accounting Standards Codification (ASC) 842 and permit a practical expedient to not assess whether expired or existing land easements that were not previously accounted for as leases are leases under ASC 842. 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. The amendments in ASU 2019-01 affect narrow aspects of the guidance issued in the amendments in ASU 2016-02. These ASUs are effective for annual periods in fiscal years beginning after December 15, 2018.

We adopted these ASUs in the first quarter of 2019 by using the optional transitional method associated with no adjustment to comparative period financial statements presented for prior periods. We elected 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 also made 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.

As a result of the adoption of the leasing guidance, the consolidated balance sheet as of January 1, 2019 reflected $1.2 billion of additional lease liabilities, along with corresponding right-of-use assets of $1.0 billion, reflecting adjustments for items such as prepaid and deferred rent, unamortized initial direct costs, and unamortized

lease incentive balances. The adoption of the leasing guidance did not have a material impact on our consolidated statements of operations.

As of January 1, 2019, we account for leases in accordance with Topic 842. The present value of lease payments, which are either fixed payments, in-substance fixed payments, or variable payments tied to an index or rate are recognized on the balance sheet with corresponding lease liabilities and right-of-use assets upon the commencement of the lease. These lease costs are expensed over the respective lease term in accordance with the classification of the lease (i.e. operating versus finance classification). Variable lease payments not tied to an index or rate are expensed as incurred and not subject to capitalization.

Recent Accounting Pronouncements Pending Adoption

The FASB issued four 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"*, (2) in November 2018, ASU 2018-19 *"Codification Improvements to Topic 326, Financial Instruments—Credit Losses"*, (3) in May 2019, ASU 2019-05, "*Financial Instruments – Credit Losses (Topic 326): Targeted Transition Relief"* and (4) in November 2019, ASU 2019-11, *"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. Additionally, ASU 2019-04, discussed further below, also includes amendments to ASU 2016-13. 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. ASU 2019-05 provide entities that have certain instruments within the scope of Subtopic 326-20, *Financial Instruments—Credit Losses—Measured at Amortized Cost*, with an option to irrevocably elect the fair value option in Subtopic 825-10, *Financial Instruments—Overall*. ASU 2019-11 clarifies guidance around how to report expected recoveries and reinforces existing guidance that prohibits organizations from recording negative allowances for available-for-sale debt securities, among other narrow scope and technical improvements. These ASUs are effective for fiscal years beginning after December 15, 2019, and interim periods within those years, with early adoption permitted. We have completed our evaluation of ASU 2016-13, ASU 2018-19, ASU 2019-05 and ASU 2019-11 and concluded they will not have a material impact on our consolidated financial statements and related 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, but do not expect it to have a material impact.

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 have completed our evaluation of ASU 2018-18 and concluded it will not have a material impact on our consolidated financial statements and related disclosures.

In April 2019, the FASB issued ASU 2019-04, *"Codification Improvements to Topic 326, Financial Instruments—Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments."* The amendments in ASU 2019-04 clarify and improve areas of guidance related to the recently issued standards on financial instruments – credit losses, derivatives and hedging, and financial instruments. The amendments in this ASU that are related to financial instruments – credit losses are effective at the same time as the effective date of ASU 2016-13. We elected to early adopt the amendments in this ASU that are related to derivatives and hedging and financial instruments in the second quarter of 2019 and the adoption of these amendments did not have any impact

on our consolidated financial statements and related disclosures. We have completed our evaluation of the amendments in this ASU that are related to financial instruments – credit losses and concluded they will not have a material impact on our consolidated financial statements and related disclosures.

In December 2019, the FASB issued ASU 2019-12, *"Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes."* This ASU removes specific exceptions to the general principles in Topic 740 and improves and simplifies financial statement preparers' application of income tax-related guidance. This ASU is effective for fiscal years beginning after December 15, 2020, and interim periods within those years, with early adoption permitted. We are evaluating the effect that ASU 2019-12 will have on our consolidated financial statements and related disclosures, but do not expect it to have a material impact.

In January 2020, the FASB issued ASU 2020-01, *"Investments—Equity Securities (Topic 321), Investments—Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815)—Clarifying the Interactions between Topic 321, Topic 323, and Topic 815."* This ASU, among other things, clarifies that a company should consider observable transactions that require a company to either apply or discontinue the equity method of accounting under Topic 323 and clarifies that, when determining the accounting for certain forward contracts and purchased options a company should not consider, whether upon settlement or exercise, if the underlying securities would be accounted for under the equity method or fair value option. This ASU is effective for fiscal years beginning after December 15, 2020, and interim periods within those years, with early adoption permitted. We are evaluating the effect that ASU 2020-01 will have on our consolidated financial statements and related disclosures.

4. Telford Acquisition

On October 1, 2019, we acquired Telford to expand our real estate development business outside of the U.S. (Telford Acquisition). A leading developer of multifamily residential properties in the London area, Telford is reported in our Real Estate Investments segment. Telford shareholders received £3.50 per share in cash, valuing Telford at £267.1 million, or $328.5 million as of the acquisition date. The Telford Acquisition was funded with borrowings under our revolving credit facility.

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	$	328,502
Less: Estimated fair value of net assets acquired (see table below)		297,669
Excess purchase price over estimated fair value of net assets acquired	$	30,833

The preliminary purchase accounting related to the Telford 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 Telford Acquisition consists largely of the synergies and economies of scale expected from combining the operations acquired from Telford with ours. We are currently assessing if any portion of the goodwill recorded in connection with the Telford 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 intangibles, real estate assets and 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 Telford Acquisition (dollars in thousands):

Assets Acquired:		
Cash and cash equivalents	$	7,896
Receivables		6,993
Contract assets, current		31,850
Prepaid expenses		2,704
Property and equipment		2,637
Other intangible assets		26,749
Operating lease assets		6,488
Investments in unconsolidated subsidiaries		79,667
Non-current contract assets		8,015
Real estate under development		208,402
Deferred tax assets, net		2,857
Other assets (current and non-current)		99,429
Total assets acquired		483,687
Liabilities Assumed:		
Accounts payable and accrued expenses		47,552
Compensation and employee benefits payable		1,580
Accrued bonus		3,274
Operating lease liabilities		941
Contract liabilities, current		1,949
Income taxes payable		1,813
Line of credit		110,687
Non-current operating lease liabilities		5,547
Other liabilities (current and non-current)		12,675
Total liabilities assumed		186,018
Estimated Fair Value of Net Assets Acquired	$	297,669

In connection with the Telford Acquisition, below is a summary of the preliminary estimate of the trademark acquired (dollars in thousands):

			As of December 31, 2019	
Asset Class	**Amortization Period**	**Amount Assigned at Acquisition Date**	**Accumulated Amortization and Foreign Currency Translation**	**Net Carrying Value**
Trademark	20 years	$ 26,749	$ 1,725	$ 28,474

Upon close of the Telford Acquisition, we immediately repaid the line of credit assumed from Telford.

The accompanying consolidated statement of operations for the year ended December 31, 2019 includes revenue, operating income and operational net income of $97.5 million, $1.0 million and $1.4 million, respectively, attributable to the Telford Acquisition. This does not include direct transaction and integration costs of $15.0 million and amortization expense of $0.4 million related to the trademark acquired, all of which were incurred during the year ended December 31, 2019 in connection with the Telford Acquisition.

Unaudited pro forma results, assuming the Telford Acquisition had occurred as of January 1, 2018 for purposes of the pro forma disclosures for the years ended December 31, 2019 and 2018 are presented below. They include certain adjustments for increased amortization expense related to the trademark acquired (approximately $1.0 million and $1.5 million in 2019 and 2018, respectively) as well as increased interest expense (approximately $4.1 million in 2018) associated with borrowings under our revolving credit facility used to fund the acquisition.

Pro forma adjustments also include the removal of $15.0 million of direct costs incurred by us during the year ended December 31, 2019 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 Telford Acquisition occurred on January 1, 2018 and may not be indicative of future operating results (dollars in thousands, except share data):

	Year Ended December 31, 2019	Year Ended December 31, 2018
Revenue	$ 24,158,427	$ 21,803,506
Operating income	1,294,480	1,157,051
Net income attributable to CBRE Group, Inc.	1,321,097	1,121,469
Basic income per share:		
Net income per share attributable to CBRE Group, Inc.	$ 3.93	$ 3.31
Weighted average shares outstanding for basic income per share	335,795,654	339,321,056
Diluted income per share:		
Net income per share attributable to CBRE Group, Inc.	$ 3.88	$ 3.27
Weighted average shares outstanding for diluted income per share	340,522,871	343,122,741

5. Warehouse Receivables & Warehouse Lines of Credit

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

Beginning balance at December 31, 2018	$ 1,342,468
Origination of mortgage loans	19,389,979
Gains (premiums on loan sales)	64,002
Proceeds from sale of mortgage loans:	
Sale of mortgage loans	(19,741,058)
Cash collections of premiums on loan sales	(64,002)
Proceeds from sale of mortgage loans	(19,805,060)
Net increase in mortgage servicing rights included in warehouse receivables	1,669
Ending balance at December 31, 2019	$ 993,058

The following table is a summary of our warehouse lines of credit in place as of December 31, 2019 and 2018 (dollars in thousands):

			December 31, 2019		December 31, 2018	
Lender	Current Maturity	Pricing	Maximum Facility Size	Carrying Value	Maximum Facility Size	Carrying Value
JP Morgan Chase Bank, N.A. (JP Morgan) (1)	10/19/2020	daily one-month LIBOR plus 1.30%	$ 985,000	$ 267,075	$ 985,000	$ 871,680
JP Morgan (1)	10/19/2020	daily one-month LIBOR plus 2.75%	15,000	—	15,000	—
Capital One, N.A. (Capital One)	7/27/2020	daily one-month LIBOR plus 1.25%	200,000	$ 39,538	325,000	120,195
Fannie Mae Multifamily As Soon As Pooled Plus Agreement and Multifamily As Soon As Pooled Sale Agreement (ASAP) Program (2)	Cancelable anytime	daily one-month LIBOR plus 1.35%, with a LIBOR floor of 0.35%	450,000	360,784	450,000	149,089
TD Bank, N.A. (TD Bank) (3)	6/30/2020	daily one-month LIBOR plus 1.15%	800,000	92,266	400,000	165,945
Bank of America, N.A. (BofA)	5/27/2020	daily one-month LIBOR plus 1.20%	350,000	189,465	—	—
BofA	5/27/2020	daily one-month LIBOR plus 1.15%	250,000	17,457	200,000	—
BofA	6/4/2019	daily one-month LIBOR plus 1.30%	—	—	225,000	21,852
MUFG Union Bank, N.A. (Union Bank) (4)	6/28/2020	daily one-month LIBOR plus 1.20%	350,000	10,590	—	—
			$ 3,400,000	$ 977,175	$ 2,600,000	$ 1,328,761

(1) Effective October 21, 2019, we amended this facility which extended the maturity date until October 19, 2020.

(2) Effective February 6, 2020, the maximum facility size was temporarily increased from $450.0 million to $600.0 million, and will revert back to $450.0 million on March 1, 2020.

(3) Effective July 1, 2019, this facility was amended with a revised interest rate of daily one-month LIBOR plus 1.15% and a maturity date of June 30, 2020. Effective August 1, 2019, this facility contained an accordion feature which provided for a temporary increase to $800.0 million, if needed, and expired on February 1, 2020. The temporary increase was never requested.

(4) On June 28, 2019, we added a new warehouse facility for $200.0 million with Union Bank. This facility contains an accordion feature which allows for temporary increases not to exceed an additional $150.0 million. If utilized, the additional borrowings must be in predefined multiples and are not to occur more than three times within twelve consecutive months. Since inception, no short-term temporary increases have been requested.

During the year ended December 31, 2019, we had a maximum of $2.5 billion of warehouse lines of credit principal outstanding.

6. Variable Interest Entities (VIEs)

We hold variable interests in certain VIEs in our Real Estate Investments segment 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, 2019 and 2018, our maximum exposure to loss related to the VIEs which are not consolidated was as follows (dollars in thousands):

	December 31,	
	2019	2018
Investments in unconsolidated subsidiaries	$ 30,484	$ 23,266
Other current assets	4,307	3,827
Co-investment commitments	29,696	22,363
Maximum exposure to loss	$ 64,487	$ 49,456

7. Fair Value Measurements

Topic 820 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.

The following tables present the fair value of assets and liabilities measured at fair value on a recurring basis as of December 31, 2019 and 2018 (dollars in thousands):

	As of December 31, 2019			
	Fair Value Measured and Recorded Using			
	Level 1	Level 2	Level 3	Total
Assets				
Available for sale securities:				
Debt securities:				
U.S. treasury securities	$ 6,998	$ —	$ —	$ 6,998
Debt securities issued by U.S. federal agencies	—	10,639	—	10,639
Corporate debt securities	—	29,098	—	29,098
Asset-backed securities	—	5,152	—	5,152
Collateralized mortgage obligations	—	2,222	—	2,222
Total available for sale debt securities	6,998	47,111	—	54,109
Equity securities	51,399	—	—	51,399
Warehouse receivables	—	993,058	—	993,058
Total assets at fair value	$ 58,397	$ 1,040,169	$ —	$ 1,098,566

	As of December 31, 2018			
	Fair Value Measured and Recorded Using			
	Level 1	Level 2	Level 3	Total
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	$ 156,900	$ 1,388,106	$ —	$ 1,545,006
Liabilities				
Interest rate swaps	$ —	$ 1,070	$ —	$ 1,070
Securities sold, not yet purchased	3,133	—	—	3,133
Total liabilities at fair value	$ 3,133	$ 1,070	$ —	$ 4,203

The following non-recurring fair value measurement was recorded for the year ended December 31, 2019 (dollars in thousands):

	Net Carrying Value as of December 31, 2019	Fair Value Measured and Recorded Using			Total Impairment Charges for the Year Ended December 31, 2019
		Level 1	Level 2	Level 3	
Other intangible assets	$ 14,753	$ —	$ —	$ 14,753	$ 89,787

During the year ended December 31, 2019, we recorded an intangible asset impairment of $89.8 million in our Real Estate Investments segment. Such impairment charge was included as a separate line item in the accompanying consolidated statements of operations.

This non-cash write-off resulted from a review of the anticipated cash flows and the decrease in assets under management in our public securities business driven in part by continued industry-wide shift in investor preference for passive investment programs. The fair value measurements employed for our impairment evaluation was

generally based upon a discounted cash flow approach. Inputs used in such evaluation included risk-free rates of return, estimated risk premiums as well as other economic variables.

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 our unconsolidated subsidiary as of the 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 Advisory Services 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 year ended December 31, 2017.

The fair values of the warehouse receivables are primarily calculated based on already locked in purchase prices. At December 31, 2019 and 2018, 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.

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.

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.
- *Securities Sold, not yet Purchased* – These liabilities are carried at their fair value.
- *Short-Term Borrowings* – This balance primarily 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 $745.5 million and $757.0 million at December 31, 2019 and 2018, respectively. Their actual carrying value, net of

unamortized debt issuance costs, totaled $744.6 million and $751.3 million at December 31, 2019 and 2018, 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 $670.7 million and $478.3 million, respectively, at December 31, 2019 and $616.4 million and $443.7 million, respectively, at December 31, 2018. 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 $593.6 million and $423.0 million, respectively, at December 31, 2019 and $592.8 million and $422.7 million, respectively, at December 31, 2018.
- *Notes Payable on Real Estate* – As of December 31, 2019 and 2018, the carrying value of our notes payable on real estate, net of unamortized debt issuance costs, was $13.1 million and $6.3 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.

8. Property and Equipment

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

	Useful Lives	December 31, 2019	December 31, 2018
Computer hardware and software	2-10 years	$ 1,011,704	$ 848,955
Leasehold improvements	1-15 years	551,049	472,952
Furniture and equipment	1-10 years	344,351	307,812
Total cost		1,907,104	1,629,719
Accumulated depreciation and amortization		(1,070,898)	(908,027)
Property and equipment, net		$ 836,206	$ 721,692

Depreciation and amortization expense associated with property and equipment was $207.8 million, $192.8 million and $166.0 million for the years ended December 31, 2019, 2018 and 2017, respectively.

9. Goodwill and Other Intangible Assets

On August 17, 2018, we announced a new organizational structure that became effective on January 1, 2019. Under the new structure, we 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 (see Note 19). In connection with this change, we reassessed our reporting units as of January 1, 2019. As a result, we have reassigned the goodwill balance to reflect our new segment structure using a relative fair value allocation approach. Under this approach, the fair value of each impacted reporting unit was determined using a combination of the income approach and the market approach and was compared to the goodwill of the impacted regional segments immediately prior to the reorganization to arrive at the reassigned goodwill balance.

We are required to test goodwill for impairment at least annually, or more often if circumstances or events indicate there may be a change in the impairment status, in accordance with Topic 350. We considered the change to our reportable segments and the resulting change in our identified reporting units to be a triggering event that required testing of our goodwill for impairment as of January 1, 2019. We elected to perform a quantitative test using 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. When we performed our goodwill impairment review as of January 1, 2019, we determined that no impairment existed as the estimated fair value of each of our reporting units was in excess of their carrying value.

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 2019, 2018 and 2017 annual assessments as of October 1. When we performed our required annual goodwill impairment review as of October 1, 2019, 2018 and 2017, we determined that no impairment existed as the estimated fair value of our reporting units was in excess of their carrying value.

The following table summarizes the changes in the carrying amount of goodwill for the years ended December 31, 2019 and 2018 (dollars in thousands):

	Advisory Services	Global Workplace Solutions	Real Estate Investments	Total
Balance as of December 31, 2017				
Goodwill	$ 3,107,787	$ 623,355	$ 592,104	$ 4,323,246
Accumulated impairment losses	(761,448)	(175,473)	(131,585)	(1,068,506)
	2,346,339	447,882	460,519	3,254,740
Purchase accounting entries related to acquisitions	188,071	288,243	(5,110)	471,204
Foreign exchange movement	(25,904)	(36,028)	(11,703)	(73,635)
Balance as of December 31, 2018				
Goodwill	3,269,954	875,570	575,291	4,720,815
Accumulated impairment losses	(761,448)	(175,473)	(131,585)	(1,068,506)
	2,508,506	700,097	443,706	3,652,309
Purchase accounting entries related to acquisitions	29,544	7,657	42,176	79,377
Foreign exchange movement	2,720	16,279	2,808	21,807
Balance as of December 31, 2019				
Goodwill	3,302,218	899,506	620,275	4,821,999
Accumulated impairment losses	(761,448)	(175,473)	(131,585)	(1,068,506)
	$ 2,540,770	$ 724,033	$ 488,690	$ 3,753,493

In the fourth quarter of 2019, we completed the Telford Acquisition (see Note 4). Additionally, during 2019, we completed eight in-fill acquisitions: a leading advanced analytics software company based in the U.K., a commercial and residential real estate appraisal firm headquartered in Florida, our former affiliate in Omaha, a project management firm in Australia, a valuation and consulting business in Switzerland, a leading project management firm in Israel, a full-service real estate firm in San Antonio with a focus on retail, office, medical office and land, and a debt-focused real estate investment management business in the U.K.

On June 12, 2018, we acquired FacilitySource through a stock purchase and merger agreement with its stockholders, including FacilitySource Holdings, LLC, WP X Finance, LP and Warburg Pincus X Partners, LP (FacilitySource Acquisition). FacilitySource, which is reported in our Global Workplace Solutions segment, was acquired to help us build a tech-enabled supply chain capability for the occupier outsourcing industry, which would drive meaningfully differentiated outcomes for leading occupiers of real estate. The final net purchase price was approximately $266.5 million paid in cash, with $263.0 million paid in 2018 and $3.5 million paid in 2019. We financed the transaction with cash on hand and borrowings under our revolving credit facility. The purchase accounting related to the FacilitySource Acquisition has been finalized (with no changes made in 2019 to the preliminary purchase accounting recorded in 2018). 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 consisted largely of the synergies and economies of scale expected from combining the operations acquired from FacilitySource with ours. The goodwill recorded in connection with the FacilitySource Acquisition that is deductible for tax purposes was not significant.

During 2018, we completed six in-fill acquisitions, the largest of which was the purchase of the remaining 50% equity interest in our longstanding New England joint venture. We also 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, and a provider of real estate and facilities consulting services to healthcare companies across the U.S.

Other intangible assets totaled $1,379.5 million, net of accumulated amortization of $1,358.5 million as of December 31, 2019, and $1,441.3 million, net of accumulated amortization of $1,180.4 million, as of December 31, 2018 and are comprised of the following (dollars in thousands):

	December 31,			
	2019		2018	
	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Unamortizable intangible assets:				
Management contracts	$ 62,338		$ 86,585	
Trademarks	56,800		56,800	
Trade names	6,000		16,250	
	125,138		159,635	
Amortizable intangible assets:				
Customer relationships	857,772	$ (519,162)	843,387	$ (435,225)
Mortgage servicing rights	803,419	(319,927)	697,322	(272,852)
Trademarks/Trade names	345,834	(92,730)	312,699	(76,514)
Management contracts	142,767	(138,891)	200,251	(135,835)
Covenant not to compete	73,750	(73,750)	73,750	(73,750)
Other	389,394	(214,068)	334,657	(186,217)
	2,612,936	(1,358,528)	2,462,066	(1,180,393)
Total intangible assets	$ 2,738,074	$ (1,358,528)	$ 2,621,701	$ (1,180,393)

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 our Global Workplace Solutions segment that are being amortized over useful lives of up to 20 years.

Mortgage servicing rights represent the carrying value of servicing assets in the U.S. in our Advisory Services segment. 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. See Mortgage Servicing Rights discussion within Note 2 for additional information.

In connection with the Telford Acquisition, a trademark of approximately $26.7 million was separately identified and is being amortized over 20 years (see Note 4). Trademarks of approximately $280 million were separately identified in connection with the GWS Acquisition 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.

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

During the year ended December 31, 2019, we recorded an intangible asset impairment of $89.8 million in our Real Estate Investments segment (see Note 7). This non-cash write-off related to intangibles acquired in the REIM Acquisitions, including unamortizable management contracts relating to relationships with open-end funds and the

Clarion Partners trade name in the U.S, as well as amortizable management contracts relating to relationships with closed-end funds and separate accounts in the U.S.

Amortization expense related to intangible assets was $225.7 million, $258.7 million and $238.7 million for the years ended December 31, 2019, 2018 and 2017, respectively. The estimated annual amortization expense for each of the years ending December 31, 2020 through December 31, 2024 approximates $167.7 million, $152.2 million, $130.4 million, $113.2 million and $101.8 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 50.0%.

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,	
	2019	2018
Current assets	$ 5,407,082	$ 3,931,111
Non-current assets	20,414,598	16,578,905
Total assets	$ 25,821,680	$ 20,510,016
Current liabilities	$ 2,241,930	$ 1,919,955
Non-current liabilities	5,857,413	4,495,117
Total liabilities	$ 8,099,343	$ 6,415,072
Non-controlling interests	$ 461,018	$ 261,654

Condensed Statements of Operations Information:

	Year Ended December 31,		
	2019	2018	2017
Revenue	$ 1,545,424	$ 1,524,685	$ 1,392,590
Operating income	549,111	906,889	1,425,824
Net income	419,966	679,712	1,254,345

Our Real Estate Investments 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 $97.0 million, $134.3 million and $100.3 million during the years ended December 31, 2019, 2018 and 2017, 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,	
	2019	2018
Long-Term Debt		
Senior term loans, with interest ranging from 0.75% to 3.38%, due through 2024	$ 748,531	$ 758,452
4.875% senior notes due in 2026, net of unamortized discount	597,052	596,653
5.25% senior notes due in 2025, net of unamortized premium	425,952	426,134
Other	1,861	3,682
Total long-term debt	1,773,396	1,784,921
Less: current maturities of long-term debt	(1,814)	(3,146)
Less: unamortized debt issuance costs	(10,337)	(14,515)
Total long-term debt, net of current maturities	$ 1,761,245	$ 1,767,260
Short-Term Borrowings		
Warehouse lines of credit, with interest ranging from 2.95% to 5.25%, due in 2020	$ 977,175	$ 1,328,761
Other	4,534	—
Total short-term borrowings	$ 981,709	$ 1,328,761

Future annual aggregate maturities of total consolidated gross debt (excluding unamortized discount, premium and deferred financing costs) at December 31, 2019 are as follows (dollars in thousands): 2020—$983,523; 2021—$47; 2022—$0; 2023—$448,531; 2024—$300,000 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 October 31, 2017, CBRE Services entered into a Credit Agreement (the 2017 Credit Agreement), which refinanced and replaced our prior credit agreement (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 euro term loan facility under the 2017 Credit Agreement in an aggregate principal amount of 400.0 million euros. The proceeds from the euro term loan facility were used to repay a portion of the U.S. dollar denominated term loans outstanding under the 2017 Credit Agreement. On March 4, 2019, CBRE Services entered into an additional incremental assumption agreement with respect to the 2017 Credit Agreement (the 2017 Agreement as amended by such incremental assumption agreement, the 2019 Credit Agreement), which (i) extended the maturity of the U.S. dollar tranche A term loans under the 2017 Credit Agreement, (ii) extended the termination date of the revolving credit commitments available under the 2017 Credit Agreement and (iii) made certain changes to the interest rates and fees applicable to such tranche A term loans and revolving credit commitments. The proceeds from the new tranche A term loan facility under the 2019 Credit Agreement were used to repay the $300.0 million of tranche A term loans outstanding under the 2017 Credit Agreement.

The 2019 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, 2019, the 2019 Credit Agreement provided for the following: (1) a $2.8 billion incremental revolving credit facility, which includes the capacity to obtain letters of credit and swingline loans and terminates on March 4, 2024; (2) a $300.0 million incremental tranche A term loan facility maturing on March 4, 2024, requiring quarterly principal payments unless our leverage ratio (as defined in the 2019 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 and (3) a €400.0 million term loan facility due and payable in full at maturity on December 20, 2023.

As of December 31, 2019, borrowings under the tranche A term loan facility under the 2019 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 2019 Credit Agreement) and borrowings under the euro term loan facility under the 2019 Credit Agreement bear interest at a minimum rate of 0.75% plus EURIBOR. We had $297.3 million of tranche A term loan borrowings outstanding under the 2019 Credit Agreement (at an interest rate of 2.69%), net of unamortized debt issuance costs, included in the accompanying consolidated balance sheets at December 31, 2019. In addition, as of December 31, 2019, we had $447.3 million of euro term loan borrowings outstanding under the 2019 Credit Agreement (at an interest rate of 0.75%), net of unamortized debt issuance costs, which was included in the accompanying consolidated balance sheets.

The 2017 Credit Agreement was a senior unsecured credit facility that was jointly and severally guaranteed by us and certain of our subsidiaries. Our 2017 Credit Agreement provided for the following: (1) a $2.8 billion revolving credit facility, which included the capacity to obtain letters of credit and swingline loans and had a termination date of October 31, 2022; (2) a $750.0 million delayed draw tranche A term loan facility which would have matured on October 31, 2022 and which required quarterly principal payments unless our leverage ratio (as defined in the 2017 Credit Agreement) was less than or equal to 2.50 to 1.00 on the last day of the fiscal quarter immediately preceding any such payment date and (3) a €400.0 million term loan facility which would have been due and payable in full at maturity on December 20, 2023. We had $294.4 million of tranche A term loan borrowings outstanding under the 2017 Credit Agreement (at an interest rate of 3.36%), net of unamortized debt issuance costs, included in the accompanying consolidated balance sheets at December 31, 2018. 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 was 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 was $400.0 million, $200.0 million of which expired in October 2017 and $200.0 million of which expired in September 2019. The ineffective portion of the change in fair value of the derivatives was recognized directly in earnings. There was no significant hedge ineffectiveness for the years ended December 31, 2019, 2018 and 2017. The effective portion of changes in the fair value of derivatives designated and qualifying as cash flow hedges was recorded in accumulated other comprehensive loss on the balance sheet and was subsequently reclassified into earnings in the period that the hedged forecasted transaction affects earnings. We reclassified $1.2 million, $2.7 million and $7.4 million for the years ended December 31, 2019, 2018, and 2017, respectively, from accumulated other comprehensive loss to interest expense. In addition, we recorded a net loss of $0.1 million and net gains of $1.0 million and $0.9 million for the years ended December 31, 2019, 2018 and 2017, respectively, to other comprehensive loss in relation to such interest rate swap agreements. As of December 31, 2018, the fair value of such interest rate swap agreements were reflected as a $1.1 million liability (included in other current liabilities) in the accompanying consolidated balance sheets.

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 $593.6 million and $592.8 million at December 31, 2019 and 2018, 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 $423.0 million and $422.7 million at December 31, 2019 and 2018, 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 $270.0 million of 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. In addition, our 2019 Credit Agreement also requires us to maintain a minimum coverage ratio of consolidated EBITDA (as defined in the 2019 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 2019 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 2019 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 22.62x for the year ended December 31, 2019, and our leverage ratio of total debt less available cash to consolidated EBITDA was 0.44x as of December 31, 2019.

Short-Term Borrowings

We had short-term borrowings of $981.7 million and $1.3 billion as of December 31, 2019 and 2018, respectively, with related weighted average interest rates of 3.1% and 3.8%, respectively, which are included in the accompanying consolidated balance sheets.

Revolving Credit Facility

The revolving credit facility under the 2019 Credit Agreement allows for borrowings outside of the U.S., with a $200.0 million sub-facility available to CBRE Services, 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 CBRE Services and 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 0.680% 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 2019 Credit Agreement). The 2019 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 December 31, 2019, no amount was outstanding under the 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.

The revolving credit facility under the 2017 Credit Agreement allowed for borrowings outside of the U.S., with a $200.0 million sub-facility available to CBRE Services, 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 CBRE Services and one of our U.K. subsidiaries. Borrowings under the revolving credit facility bore 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 required us to pay a fee based on the total amount of the revolving credit facility commitment (whether used or unused). As of December 31, 2018, no amount was outstanding under our revolving credit facility other than letters of credit totaling $2.0 million. These letters of credit, which reduced the amount we could have borrowed 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. Leases

We are the lessee in contracts for our office space tenancies, for leased vehicles and for our wholly-owned subsidiary Hana. These arrangements account for the significant portion of our lease liabilities and right-of-use assets. We continually monitor our service arrangements to evaluate whether they meet the definition of a lease.

The base terms for our lease arrangements typically do not extend beyond 10 years. We commonly have renewal options in our leases, but most of these options do not create a significant economic incentive for us to extend the lease term. Therefore, payments during periods covered by these renewal options are typically not included in our lease liabilities and right-of-use assets. Specific to our vehicle leases, early termination options are common and economic penalties associated with early termination of these contracts are typically significant enough to make it reasonably certain that we will not exercise such options. Therefore, payments during periods covered by these early termination options in vehicle leases are typically included in our lease liabilities and right-of-use assets. As an accounting policy election, our short-term leases with an initial term of 12 months or less are not recognized as lease liabilities and right-of-use assets in the consolidated balance sheets. The rent expense associated with short term leases is recognized on a straight-line basis over the lease term.

Most of our office space leases include variable payments based on our share of actual common area maintenance and operating costs of the leased property. Many of our vehicle leases include variable payments based on actual service and fuel costs. For both office space and vehicle leases, we have elected the practical expedient to not separate lease components from non-lease components. Therefore, these costs are classified as variable lease payments.

Lease payments are typically discounted at our incremental borrowing rate because the interest rate implicit in the lease cannot be readily determined in the absence of key inputs which are typically not reported by our lessors. Because we do not generally borrow on a collateralized basis, judgement was used to estimate the secured borrowing rate associated with our leases based on relevant market data and our inputs applied to accepted valuation methodologies. The incremental borrowing rate calculated for each lease also reflects the lease term, currency, and geography specific to each lease.

Supplemental balance sheet information related to our leases is as follows (dollars in thousands):

Category	Classification	December 31, 2019
Assets		
Operating lease assets	Operating lease assets	$ 997,966
Financing lease assets	Other assets, net	94,141
Total leased assets		$ 1,092,107
Liabilities		
Current:		
Operating	Operating lease liabilities	$ 168,663
Financing	Other current liabilities	34,966
Non-current:		
Operating	Non-current operating lease liabilities	1,057,758
Financing	Other liabilities	60,001
Total lease liabilities		$ 1,321,388

Components of lease cost are as follows (dollars in thousands):

Component	Classification	Year Ended December 31, 2019
Operating lease cost	Operating, administrative and other	$ 189,106
Finance lease cost:		
Amortization of right-to-use assets	(1)	31,081
Interest on lease liabilities	Interest expense	1,317
Variable lease cost	(2)	74,476
Sublease income	Revenue	(3,734)
Total lease cost		$ 292,246

(1) Amortization costs of $25.5 million from vehicle finance leases utilized in client outsourcing arrangements are included in cost of revenue. Amortization costs of $5.6 million from all other finance leases are included in depreciation and amortization.

(2) Variable lease costs of $17.5 million from leases in client outsourcing arrangements are included in cost of revenue. Variable lease costs of $57.0 million from all other leases are included in operating, administrative and other.

Weighted average remaining lease term and discount rate for our operating leases are as follows:

	December 31, 2019
Weighted-average remaining lease term:	
Operating leases	9 years
Finance leases	3 years
Weighted-average discount rate:	
Operating leases	3.4%
Finance leases	2.3%

Maturities of lease liabilities by fiscal year as of December 31, 2019 are as follows (dollars in thousands):

	Operating Leases	Financing Leases
2020	$ 175,958	$ 35,532
2021	200,043	27,314
2022	178,314	19,264
2023	160,300	12,303
2024	148,681	4,628
Thereafter	569,360	—
Total remaining lease payments at December 31, 2019	$ 1,432,656	$ 99,041
Less: Interest	206,235	4,074
Present value of lease liabilities at December 31, 2019	$ 1,226,421	$ 94,967

As previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2018 and under the previous lease accounting standard, 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	$ 1,489,223

Supplemental cash flow information and non-cash activity related to our operating leases are as follows (dollars in thousands):

	Year Ended December 31, 2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	$ 167,652
Operating cash flows from financing leases	1,559
Financing cash flows from financing leases	32,352
Right-of-use assets obtained in exchange for new operating lease liabilities	168,972
Right-of-use assets obtained in exchange for new financing lease liabilities	63,041
Other non-cash increases in operating lease right-of-use assets (1)	47,851
Other non-cash decreases in finance lease right-of-use assets (1)	(1,826)

(1) These noncash increases in right-of-use assets resulted from lease modifications and remeasurements.

13. 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 therefore 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.

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 $28.0 billion at December 31, 2019. 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, 2019 and 2018, CBRE MCI had a $72.0 million and a $64.0 million, respectively, letter of credit under this reserve arrangement, and had recorded a liability of approximately $37.0 million and $37.9 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 $930.7 million (including $636.4 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, 2019.

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, 2019 and 2018, CBRE Capital Markets had posted a $5.0 million letter of credit under this reserve arrangement.

We had outstanding letters of credit totaling $91.8 million as of December 31, 2019, 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 $77.0 million as of December 31, 2019 referred to in the preceding paragraphs represented the majority of the $91.8 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 2020.

We had guarantees totaling $80.1 million as of December 31, 2019, 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 $80.1 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, 2019, 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 Real Estate Investments 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. 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 Real Estate Investments 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, 2019, we had aggregate commitments of $72.1 million to fund future co-investments. Additionally, an important part of our Real Estate Investments 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, 2019, we had committed to fund $50.1 million of additional capital to these unconsolidated subsidiaries.

14. Employee Benefit Plans

Stock Incentive Plans

2012 Equity Incentive Plan and 2017 Equity Incentive Plan

Our 2012 equity incentive plan and 2017 equity incentive plan were adopted by our board of directors and approved by our stockholders on May 8, 2012 and May 19, 2017, respectively. Both the 2012 and 2017 equity incentive plans authorized the grant of stock-based awards to our employees, directors and independent contractors.

Our 2012 equity incentive plan was terminated in May 2017 in connection with the adoption of our 2017 equity incentive plan. Our 2017 equity incentive plan was terminated in May 2019 in connection with the adoption of our 2019 equity incentive plan, which is described below. At termination of the 2012 equity incentive plan, no unissued shares from the 2012 stock incentive plan were allocated to the 2017 equity incentive plan for potential future issuance. At termination of the 2017 equity incentive plan, no unissued shares from the 2017 equity incentive plan were allocated to the 2019 equity incentive plan for potential future issuance. Since our 2012 and 2017 equity incentive plans have been terminated, no new awards may be granted under them. As of December 31, 2019, assuming the maximum number of shares under our performance-based awards will later be issued, 2,166,537 outstanding restricted stock unit (RSU) awards to acquire shares of our Class A common stock granted under the 2012 equity incentive plan 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 equity incentive plan will not become available for grant under the 2017 equity incentive plan or the 2019 equity incentive plan. As of December 31, 2019, 5,736,560 outstanding RSU awards to acquire shares of our Class A common stock granted under the 2017 equity incentive plan remain outstanding according to their terms, and we will continue to issue shares to the extent required under the terms of such outstanding awards (noting that any shares granted above target will get deducted from the 2019 equity incentive plan reserve as noted below). Shares underlying awards outstanding under the 2017 equity incentive plan at termination that are subsequently canceled, forfeited or terminated without issuance to the holder thereof will be available for grant under the 2019 equity incentive plan.

2019 Equity Incentive Plan

Our 2019 equity incentive plan was adopted by our board of directors on March 1, 2019 and approved by our stockholders on May 17, 2019. The 2019 equity incentive plan authorizes the grant of stock-based awards to employees, directors and independent contractors. Unless terminated earlier, the 2019 equity incentive plan will terminate on March 1, 2029. A total of 9,900,000 shares of our Class A common stock are reserved for issuance under the 2019 equity incentive plan, less 189,499 shares granted under the 2017 equity incentive plan between March 1, 2019, the date our board of directors approved the plan, and May 17, 2019, the date our stockholders approved the 2019 equity incentive plan. Additionally, as mentioned above, shares underlying awards outstanding under the 2017 equity incentive plan at termination that are subsequently canceled, forfeited or terminated without issuance to the holder thereof will be available for reissuance under the 2019 equity incentive plan. As of December 31, 2019, 234,242 shares were canceled under the 2017 equity incentive plan and added to the authorized pool for the 2019 equity incentive plan, bringing the total authorized amount under the 2019 equity incentive plan to 9,944,743 shares of our Class A common stock.

Shares underlying expired, canceled, forfeited or terminated awards under the 2019 equity incentive plan (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 reissuance. Awards granted under the 2019 equity incentive plan are subject to a minimum vesting condition of one year. As of December 31, 2019, assuming the maximum number of shares under our performance-based awards will later be issued (which includes shares that could be issued over target related to performance awards issued and outstanding under the 2017 equity incentive plan), 7,538,712 shares remained available for future grants under this plan.

The number of shares issued or reserved pursuant to the 2012, 2017 and 2019 equity incentive plans are 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 occurrences.

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, 2019, 2018 and 2017.

- During the year ended December 31, 2019, we granted RSUs that are performance vesting in nature, with 888,726 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 1,493,788 RSUs that are time vesting in nature.
- 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.

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. 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 and 2019, we made additional grants under this Special RSU grant program to certain of our employees, with 195,907 reflecting the maximum number of RSUs that may be issued if all of the performance targets are satisfied at their highest levels, and 55,973 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 was 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.

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,		
	2019	**2018**	**2017**
Volatility of common stock	25.96%	25.02%	27.85%
Expected dividend yield	0.00%	0.00%	0.00%
Risk-free interest rate	2.12%	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, 2016	4,843,273	$ 31.66
Granted	5,152,082	40.11
Performance award achievement adjustments	489,219	30.93
Vested	(2,510,031)	29.98
Forfeited	(297,441)	32.85
Balance at December 31, 2017	7,677,102	37.76
Granted	2,023,266	45.70
Performance award achievement adjustments	282,953	38.09
Vested	(2,177,800)	34.78
Forfeited	(623,161)	40.85
Balance at December 31, 2018	7,182,360	41.04
Granted	2,000,977	50.07
Performance award achievement adjustments	166,007	37.36
Vested	(1,323,351)	37.43
Forfeited	(316,294)	42.09
Balance at December 31, 2019	7,709,699	43.89

Total compensation expense related to non-vested stock awards was $127.7 million, $128.2 million and $93.1 million for the years ended December 31, 2019, 2018 and 2017, respectively. At December 31, 2019, total unrecognized estimated compensation cost related to non-vested stock awards was approximately $173.8 million, which is expected to be recognized over a weighted average period of approximately 2.9 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 $309.4 million, $363.6 million and $286.5 million for the years ended December 31, 2019, 2018 and 2017, 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 union employees, 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 both 2019 and 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 2017, 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 $59.9 million, $46.3 million and $38.8 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Participants are entitled to invest up to 25% of their 401(k) account balance in shares of our common stock. As of December 31, 2019, 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 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, 2019 and 2018, the fair values of pension plan assets were $331.4 million and $274.4 million, respectively, and the fair values of projected benefit obligations in aggregate were $439.4 million and $387.4 million, respectively. As a result, the plans were underfunded by approximately $108.0 million and $113.0 million at December 31, 2019 and 2018, 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 $191.6 million and $192.7 million at December 31, 2019 and 2018, respectively, and were included in accumulated other comprehensive loss in the accompanying consolidated balance sheets. Net periodic pension (benefit) cost was not material for the years ended December 31, 2019, 2018 and 2017.

15. Income Taxes

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

	Year Ended December 31,		
	2019	**2018**	**2017**
Domestic	$ 839,899	$ 807,590	$ 575,222
Foreign	521,446	571,416	596,111
	$ 1,361,345	$ 1,379,006	$ 1,171,333

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

	Year Ended December 31,		
	2019	**2018**	**2017**
Federal:			
Current	$ (51,980)	$ 166,024	$ 275,475
Deferred	(74,432)	(7,667)	39,045
	(126,412)	158,357	314,520
State:			
Current	52,403	43,320	21,212
Deferred	(5,760)	(3,692)	5,573
	46,643	39,628	26,785
Foreign:			
Current	163,833	149,194	123,840
Deferred	(14,169)	(34,121)	2,612
	149,664	115,073	126,452
	$ 69,895	$ 313,058	$ 467,757

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,		
	2019	2018	2017
Federal statutory tax rate	21%	21%	35%
Foreign rate differential	4	—	(5)
State taxes, net of federal benefit	3	3	2
Non-deductible expenses	1	2	2
Reserves for uncertain tax positions	1	—	(2)
Credits and exemptions	(4)	(2)	(3)
Outside basis differences recognized as a result of a legal entity restructuring	(20)	—	—
Tax Reform	—	1	12
Change in valuation allowance	—	(1)	(2)
Acquisition-related costs	—	(2)	—
Other	(1)	1	1
Effective tax rate	5%	23%	40%

In the fourth quarter of 2019, we recognized a net tax benefit of approximately $277.2 million attributable to outside basis differences recognized as a result of a legal entity restructuring. The recognition of the outside tax basis differences generated a capital loss that will offset capital gains generated during 2019. In addition, a portion of the capital loss will be carried back to tax years 2016, 2017 and 2018 to offset capital gains in those years. The remaining capital loss will be carried forward and will be available to offset future capital gains. Based on our strong history of capital gains in the prior three years and the nature of our business we expect to generate sufficient capital gains in the five year carry forward period and therefore concluded that it is more likely than not that we will realize the full tax benefit from the capital loss carried forward. Accordingly, we have not provided any valuation allowance against the deferred tax asset for the capital loss carried forward.

On December 22, 2017, the Tax Act was signed into law making significant changes to the IRC, including a decrease to the U.S. corporate tax rate from 35% to 21% and a one-time transition tax (i.e. toll charge, or the Transition Tax) on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017. We recorded a provisional amount for our one-time Transition Tax liability of $158.0 million for the year ended December 31, 2017, which represented 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. Our provision for income taxes for 2018 included a net expense true-up of $13.3 million associated with the Tax Act. As required, we paid the full state tax liability for the Transition Tax in 2018. We are paying the federal tax liability for the Transition Tax in annual interest-free installments over a period of eight years through 2025 as allowed by the Tax Act. As of December 31, 2019, remaining amounts due for the Transition Tax (including a 2019 true-up of the Transaction Tax liability) include the third installment due in 2020 of $14.2 million, which is included within income taxes payable, and the remaining payable of $93.6 million, which is included within non-current income taxes payable in the accompanying consolidated balance sheets.

Cumulative tax effects of temporary differences are shown below at December 31, 2019 and 2018 (dollars in thousands):

	December 31,	
	2019	2018
Asset (Liability)		
Tax losses and tax credits	$ 330,839	$ 275,574
Operating lease liabilities	320,261	—
Bonus and deferred compensation	280,747	276,572
Bad debt and other reserves	66,504	57,506
Pension obligation	24,022	22,950
Investments	5,236	5,211
Tax effect on revenue items related to Topic 606 adoption	(25,620)	(38,510)
Property and equipment	(54,370)	(49,935)
Unconsolidated affiliates and partnerships	(63,594)	(64,448)
Capitalized costs and intangibles	(277,246)	(289,674)
Operating lease assets	(314,433)	—
All other	(1,153)	(2,457)
Net deferred tax assets before valuation allowance	291,193	192,789
Valuation allowance	(251,922)	(248,511)
Net deferred tax assets (liabilities)	$ 39,271	$ (55,722)

In the first quarter of 2019 we adopted new lease accounting guidance (see Note 3). As a result of such adoption, we recorded deferred tax assets of $320.3 million and deferred tax liabilities of $314.4 million for book tax basis differences in the operating lease liabilities and operating lease assets, respectively. As of December 31, 2019, we had a U.S. federal capital loss carryforward, net of related reserves for uncertain tax positions, of approximately $327.9 million, translating to a net deferred tax asset before valuation allowance of $64.9 million, which will expire after the five-year carryforward period. As of December 31, 2019, we had U.S. federal net operating losses (NOLs), net of related reserves for uncertain tax positions, of approximately $32.2 million, translating to a net deferred tax asset before valuation allowance of $6.8 million, which will begin to expire in 2023. As of December 31, 2019, 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 2020, 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, 2019, $251.9 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, 2019, our valuation allowance increased by approximately $3.4 million. The change in the valuation allowance was driven by an increase in the valuation allowance of $7.9 million associated with NOLs generated by our operations in Luxembourg and Norway and was partially offset by a decrease of $4.5 million due to tax rate changes, currency translation adjustments and utilization of foreign NOLs that had full valuation allowances. 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.

Our foreign subsidiaries have accumulated $2.6 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 have 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 $141.2 million and $95.0 million as of December 31, 2019 and 2018, respectively. The total amount of unrecognized tax benefits that would affect our effective tax rate, if recognized, is $44.5 million ($42.7 million, net of federal benefit received from state positions) and $50.2 million ($49.2 million, net of federal benefit received from state positions) as of December 31, 2019 and 2018, respectively.

A reconciliation of the beginning and ending amount of unrecognized tax benefits for the years ended December 31, 2019 and 2018 is as follows (dollars in thousands):

	Year Ended December 31,	
	2019	2018
Beginning balance, unrecognized tax benefits	$ (94,962)	$ (35,826)
Gross increases - tax positions in prior period	(22,229)	(49,412)
Gross decreases - tax positions in prior period	17,390	—
Gross increases - current-period tax positions	(45,262)	(18,861)
Decreases relating to settlements	218	4,619
Reductions as a result of lapse of statute of limitations	3,680	4,531
Foreign exchange movement	1	(13)
Ending balance, unrecognized tax benefits	$ (141,164)	$ (94,962)

During the year ended December 31, 2019, we released $3.7 million of gross unrecognized tax benefits primarily due to expiration of the U.S. federal statute of limitations related to the 2015 tax year. As a result, we recognized $3.2 million of income tax benefits related to decreases in tax positions and $0.5 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, 2019, 2018 and 2017, we accrued an additional $0.3 million, $0.6 million and $1.0 million, respectively, in interest and penalties associated with uncertain tax positions. As of December 31, 2019 and 2018, we have recognized a liability for interest and penalties of $3.8 million ($3.1 million, net of related federal benefit received from interest expense) and $4.0 million ($3.5 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 2016. 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.

16. 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.

In October 2016, our board of directors authorized the company to repurchase up to an aggregate of $250.0 million of our Class A common stock over three years. No shares were repurchased during the years ended December 31, 2016 and 2017. 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. During January 2019, under the October 2016 program, we spent $45.1 million to repurchase 1,144,449 shares of our Class A common stock with an average price paid per share of $39.38.

In February 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 previous program terminated upon the effectiveness of the new program. In both August and November 2019, our board of directors authorized an additional $100.0 million under our new program, bringing the total authorized amount under the new program to a total of $500.0 million. During the year ended December 31, 2019, under the March 2019 program, we spent $100.0 million to repurchase an additional 1,936,458 shares of our Class A common stock with an average price paid per share of $51.64. As of December 31, 2019, we had $400.0 million of capacity remaining under our current stock repurchase program.

17. Income Per Share Information

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

	Year Ended December 31,		
	2019	**2018**	**2017**
Basic Income Per Share			
Net income attributable to CBRE Group, Inc. shareholders	$ 1,282,357	$ 1,063,219	$ 697,109
Weighted average shares outstanding for basic income per share	335,795,654	339,321,056	337,658,017
Basic income per share attributable to CBRE Group, Inc. shareholders	$ 3.82	$ 3.13	$ 2.06
Diluted Income Per Share			
Net income attributable to CBRE Group, Inc. shareholders	$ 1,282,357	$ 1,063,219	$ 697,109
Weighted average shares outstanding for basic income per share	335,795,654	339,321,056	337,658,017
Dilutive effect of contingently issuable shares	4,727,217	3,801,293	3,121,987
Dilutive effect of stock options	—	392	3,552
Weighted average shares outstanding for diluted income per share	340,522,871	343,122,741	340,783,556
Diluted income per share attributable to CBRE Group, Inc. shareholders	$ 3.77	$ 3.10	$ 2.05

For the years ended December 31, 2019, 2018 and 2017, 374,555, 259,274 and 621,805, 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.

18. 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, 2019, 2018 and 2017 by type of service and/or segment (dollars in thousands):

	Year Ended December 31, 2019			
	Advisory Services	Global Workplace Solutions	Real Estate Investments	Consolidated
Topic 606 Revenue:				
Global workplace solutions	$ —	$ 14,164,001	$ —	$ 14,164,001
Advisory leasing	3,269,993	—	—	3,269,993
Advisory sales	2,130,979	—	—	2,130,979
Property and advisory project management	2,255,398			2,255,398
Valuation	630,399	—	—	630,399
Commercial mortgage origination (1)	154,227	—	—	154,227
Loan servicing (2)	30,943	—	—	30,943
Investment management	—	—	424,882	424,882
Development services	—	—	213,264	213,264
Topic 606 Revenue	8,471,939	14,164,001	638,146	23,274,086
Out of Scope of Topic 606 Revenue:				
Commercial mortgage origination	421,736	—	—	421,736
Loan servicing	175,793	—	—	175,793
Development services (4)	—	—	22,476	22,476
Total Out of Scope of Topic 606 Revenue	597,529	—	22,476	620,005
Total revenue	$ 9,069,468	$ 14,164,001	$ 660,622	$ 23,894,091

	Year Ended December 31, 2018 (3)			
	Advisory Services	Global Workplace Solutions	Real Estate Investments	Consolidated
Topic 606 Revenue:				
Global workplace solutions	$ —	$ 12,365,362	$ —	$ 12,365,362
Advisory leasing	3,080,117	—	—	3,080,117
Advisory sales	1,980,932			1,980,932
Property and advisory project management	2,057,433	—	—	2,057,433
Valuation	598,806	—	—	598,806
Commercial mortgage origination (1)	136,534	—	—	136,534
Loan servicing (2)	24,192	—	—	24,192
Investment management	—	—	434,405	434,405
Development services	—	—	100,319	100,319
Topic 606 Revenue	7,878,014	12,365,362	534,724	20,778,100
Out of Scope of Topic 606 Revenue:				
Commercial mortgage origination	402,814	—	—	402,814
Loan servicing	159,174	—	—	159,174
Total Out of Scope of Topic 606 Revenue	561,988	—	—	561,988
Total revenue	$ 8,440,002	$ 12,365,362	$ 534,724	$ 21,340,088

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

(2) Loan servicing fees earned from servicing contracts for which we do not hold mortgage servicing rights are in scope of Topic 606.

(3) Our new organizational structure became effective January 1, 2019. See Note 19 for additional information. Revenue classifications for 2018 and 2017 have been restated to conform to the new structure.

(4) Out of scope revenue for development services represents selling profit from transfers of sales-type leases in the scope of Topic 842.

	Year Ended December 31, 2017 (3)			
	Advisory Services	Global Workplace Solutions	Real Estate Investments	Consolidated
Topic 606 Revenue:				
Global workplace solutions	$ —	$ 10,791,963	$ —	$ 10,791,963
Advisory leasing	2,592,203	—	—	2,592,203
Advisory sales	1,869,872	—	—	1,869,872
Property and advisory project management	1,748,594	—	—	1,748,594
Valuation	556,008			556,008
Commercial mortgage origination (1)	117,009	—	—	117,009
Loan servicing (2)	19,759	—	—	19,759
Investment management	—	—	377,644	377,644
Development services	—	—	79,455	79,455
Topic 606 Revenue	6,903,445	10,791,963	457,099	18,152,507
Out of Scope of Topic 606 Revenue:				
Commercial mortgage origination	338,590	—	—	338,590
Loan servicing	137,690	—	—	137,690
Total Out of Scope of Topic 606 Revenue	476,280	—	—	476,280
Total revenue	$ 7,379,725	$ 10,791,963	$ 457,099	$ 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) Loan servicing fees earned from servicing contracts for which we do not hold mortgage servicing rights are in scope of Topic 606.

(3) Our new organizational structure became effective January 1, 2019. See Note 19 for additional information. Revenue classifications for 2018 and 2017 have been restated to conform to the new structure.

Contract Assets and Liabilities

We had contract assets totaling $529.8 million ($328.0 million of which was current) and $381.8 million ($307.0 million of which was current) as of December 31, 2019 and 2018, respectively. During the year ended December 31, 2019, our contract assets increased by $148.0 million, primarily due to an increase in contract assets in our leasing business as well as due to contract assets acquired in the Telford Acquisition (see Note 4).

We had contract liabilities totaling $115.0 million ($108.7 million of which was current) and $92.5 million ($82.2 million of which was current) as of December 31, 2019 and 2018, respectively. During the year ended December 31, 2019, we recognized revenue of $75.2 million that was included in the contract liability balance at December 31, 2018.

Contract Costs

Within our Global Workplace Solutions segment, we incur transition costs to fulfil contracts prior to services being rendered. We capitalized $69.3 million, $45.7 million and $31.9 million, respectively, of transition costs during the years ended December 31, 2019, 2018 and 2017. We recorded amortization of transition costs of $32.3 million, $23.4 million and $19.2 million, respectively, during the years ended December 31, 2019, 2018 and 2017.

19. Segments

On August 17, 2018, we announced a new organizational structure that became effective on January 1, 2019. Under the new structure, we 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.

Advisory Services provides a comprehensive range of services globally, including property leasing, property sales, mortgage services, property management, project management and valuation. Global Workplace Solutions provides a broad suite of integrated, contractually-based outsourcing services to occupiers of real estate, including facilities management, project management and transaction services. Real Estate Investments includes: (i) investment management services provided globally; (ii) development services in the U.S. and U.K. and (iii) flexible office space solutions.

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

	Year Ended December 31,		
	2019	2018	2017
Revenue			
Advisory Services	$ 9,069,468	$ 8,440,002	$ 7,379,725
Global Workspace Solutions	14,164,001	12,365,362	10,791,963
Real Estate Investments	660,622	534,724	457,099
Total revenue	$ 23,894,091	$ 21,340,088	$ 18,628,787
Depreciation and Amortization			
Advisory Services	$ 304,766	$ 280,921	$ 243,791
Global Workspace Solutions	120,975	147,222	136,127
Real Estate Investments	13,483	23,845	26,196
Total depreciation and amortization	$ 439,224	$ 451,988	$ 406,114
Equity Income (Loss) from Unconsolidated Subsidiaries			
Advisory Services	$ 6,894	$ 16,017	$ 20,740
Global Workspace Solutions	(1,423)	115	—
Real Estate Investments	155,454	308,532	189,467
Total equity income from unconsolidated subsidiaries	$ 160,925	$ 324,664	$ 210,207
Adjusted EBITDA			
Advisory Services	$ 1,465,792	$ 1,303,251	$ 1,174,943
Global Workspace Solutions	424,026	345,560	334,377
Real Estate Investments	173,965	256,357	207,454
Total Adjusted EBITDA	$ 2,063,783	$ 1,905,168	$ 1,716,774

Adjusted EBITDA is the measure reported to the chief operating decision maker (CODM) 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 and intangible asset impairments. Amounts shown for adjusted EBITDA further remove (from EBITDA) the impact of certain cash and non-cash items related to acquisitions, certain carried interest incentive compensation expense (reversal) to align with the timing of associated revenue, costs associated with our reorganization, including cost-savings initiatives, and other non-recurring costs.

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

	Year Ended December 31,		
	2019	2018	2017
Net income attributable to CBRE Group, Inc.	$ 1,282,357	$ 1,063,219	$ 697,109
Add:			
Depreciation and amortization	439,224	451,988	406,114
Intangible asset impairment	89,787	—	—
Interest expense, net of interest income	85,754	98,685	126,961
Write-off of financing costs on extinguished debt	2,608	27,982	—
Provision for income taxes	69,895	313,058	467,757
EBITDA	1,969,625	1,954,932	1,697,941
Adjustments:			
Costs associated with our reorganization, including cost-savings initiatives (1)	49,565	37,925	—
Integration and other costs related to acquisitions	15,292	9,124	27,351
Carried interest incentive compensation expense (reversal) to align with the timing of associated revenue	13,101	(5,261)	(8,518)
Impact of fair value adjustments to real estate assets acquired in the Telford Acquisition (purchase accounting) that were sold in period	9,301	—	—
Costs incurred related to legal entity restructuring	6,899	—	—
Costs incurred in connection with litigation settlement	—	8,868	—
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)	—
Adjusted EBITDA	$ 2,063,783	$ 1,905,168	$ 1,716,774

(1) 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.

Our CODM is not provided with total asset information by segment and accordingly, does not measure or allocate total assets on a segment basis. As a result, we have not disclosed any asset information by segment.

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,		
	2019	2018	2017
Revenue			
United States	$ 13,852,018	$ 12,264,188	$ 10,954,608
United Kingdom	2,972,704	2,586,890	2,242,973
All other countries	7,069,369	6,489,010	5,431,206
Total revenue	$ 23,894,091	$ 21,340,088	$ 18,628,787

20. Related Party Transactions

The accompanying consolidated balance sheets include loans to related parties, primarily employees other than our executive officers, of $416.7 million and $350.1 million as of December 31, 2019 and 2018, 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 5.25% per annum and mature on various dates through 2028.

21. Guarantor and Nonguarantor Financial Statements

The following condensed consolidating financial information includes condensed consolidating balance sheets as of December 31, 2019 and 2018, condensed consolidating statements of operations, condensed consolidating statements of comprehensive income and condensed consolidating statements of cash flows for the years ended December 31, 2019, 2018 and 2017 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.

Condensed Consolidating Balance Sheet

	As of December 31, 2019					
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Eliminations	Consolidated Total
ASSETS						
Current Assets:						
Cash and cash equivalents	$ 7	$ 13,453	$ 254,992	$ 703,329	$ —	$ 971,781
Restricted cash	—	—	55,849	66,115	—	121,964
Receivables, net	—	16	1,627,598	2,839,060	—	4,466,674
Warehouse receivables (1)	—	—	303,559	689,499	—	993,058
Contract assets	—	—	286,225	41,787	—	328,012
Prepaid expenses	—	—	127,413	155,328	—	282,741
Income taxes receivable	—	—	91,398	2,517	—	93,915
Other current assets	—	—	70,554	205,765	—	276,319
Total Current Assets	7	13,469	2,817,588	4,703,400	—	7,534,464
Property and equipment, net	—	—	560,509	275,697	—	836,206
Goodwill	—	—	2,249,274	1,504,219	—	3,753,493
Other intangible assets, net	—	—	726,897	652,649	—	1,379,546
Operating lease assets	—	—	451,769	546,197	—	997,966
Investments in unconsolidated subsidiaries	—	—	273,532	153,179	—	426,711
Non-current contract assets	—	—	175,215	26,545	—	201,760
Real estate under development	—	—	—	185,508	—	185,508
Investments in consolidated subsidiaries	8,395,563	6,642,233	2,816,035	—	(17,853,831)	—
Intercompany loan receivable	—	3,054,548	700,000	—	(3,754,548)	—
Non-current income taxes receivable	—	—	113,194	25,942	—	139,136
Deferred tax assets, net	—	—	57,639	106,127	(89,902)	73,864
Other assets, net	—	17,016	480,968	170,558	—	668,542
Total Assets	$ 8,395,570	$ 9,727,266	$ 11,422,620	$ 8,350,021	$ (21,698,281)	$ 16,197,196
LIABILITIES AND EQUITY						
Current Liabilities:						
Accounts payable and accrued expenses	$ —	$ 17,790	$ 947,817	$ 1,470,477	$ —	$ 2,436,084
Compensation and employee benefits payable	—	—	758,367	566,623	—	1,324,990
Accrued bonus and profit sharing	—	—	686,793	575,181	—	1,261,974
Operating lease liabilities	—	—	75,906	92,757	—	168,663
Contract liabilities	—	—	58,701	49,970	—	108,671
Income taxes payable	—	—	2,002	28,205	—	30,207
Short-term borrowings:						
Warehouse lines of credit (which fund loans that U.S. Government Sponsored Enterprises have committed to purchase) (1)	—	—	300,260	676,915	—	977,175
Other	—	—	—	4,534	—	4,534
Total short-term borrowings	—	—	300,260	681,449	—	981,709
Current maturities of long-term debt	—	—	18	1,796	—	1,814
Other current liabilities	—	—	46,121	76,218	—	122,339
Total Current Liabilities	—	17,790	2,875,985	3,542,676	—	6,436,451
Long-Term Debt, net:						
Long-term debt, net	—	1,313,913	—	447,332	—	1,761,245
Intercompany loan payable	2,162,877	—	1,017,046	574,625	(3,754,548)	—
Total Long-Term Debt, net	2,162,877	1,313,913	1,017,046	1,021,957	(3,754,548)	1,761,245
Non-current operating lease liabilities	—	—	520,155	537,603	—	1,057,758
Non-current income taxes payable	—	—	93,647	—	—	93,647
Non-current tax liabilities	—	—	40,066	45,900	—	85,966
Deferred tax liabilities, net	—	—	—	124,495	(89,902)	34,593
Other liabilities	—	—	233,488	220,936	—	454,424
Total Liabilities	2,162,877	1,331,703	4,780,387	5,493,567	(3,844,450)	9,924,084
Commitments and contingencies	—	—	—	—	—	—
Equity:						
CBRE Group, Inc. Stockholders' Equity	6,232,693	8,395,563	6,642,233	2,816,035	(17,853,831)	6,232,693
Non-controlling interests	—	—	—	40,419	—	40,419
Total Equity	6,232,693	8,395,563	6,642,233	2,856,454	(17,853,831)	6,273,112
Total Liabilities and Equity	$ 8,395,570	$ 9,727,266	$ 11,422,620	$ 8,350,021	$ (21,698,281)	$ 16,197,196

(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 2019 Credit Agreement, a substantial majority of warehouse receivables funded under Fannie Mae ASAP, JP Morgan, BofA, TD Bank, Capital One and Union Bank lines of credit are pledged to Fannie Mae, JP Morgan, BofA, TD Bank, Capital One and Union Bank, and accordingly, are not included as collateral for these notes or our other outstanding debt.

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
Non-current contract assets	—	—	74,762	—	—	74,762
Real estate under development	—	—	4,586	—	—	4,586
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	404,442	117,350	—	540,049
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
Compensation and employee benefits payable	—	—	662,196	458,983	—	1,121,179
Accrued bonus and profit sharing	—	—	685,521	503,874	—	1,189,395
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 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.

Condensed Consolidating Statement of Operations

	For the Year Ended December 31, 2019					
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Eliminations	Consolidated Total
Revenue	$ —	$ —	$ 13,550,005	$ 10,344,086	$ —	$ 23,894,091
Costs and expenses:						
Cost of revenue	—	—	10,836,412	7,852,601	—	18,689,013
Operating, administrative and other	1,000	1,036	1,705,837	1,728,136	—	3,436,009
Depreciation and amortization	—	—	265,220	174,004	—	439,224
Intangible asset impairment	—	—	89,787	—	—	89,787
Total costs and expenses	1,000	1,036	12,897,256	9,754,741	—	22,654,033
Gain on disposition of real estate	—	—	19,432	385	—	19,817
Operating (loss) income	(1,000)	(1,036)	672,181	589,730	—	1,259,875
Equity income (loss) from unconsolidated subsidiaries	—	—	162,019	(1,094)	—	160,925
Other income	—	—	7,842	21,065	—	28,907
Interest expense, net of interest income	—	(31,037)	80,604	36,187	—	85,754
Write-off of financing costs on extinguished debt	—	2,608	—	—	—	2,608
Royalty and management service (income) expense	—	—	(92,728)	92,728	—	—
Income from consolidated subsidiaries	1,283,103	1,262,674	284,038	—	(2,829,815)	—
Income before (benefit of) provision for income taxes	1,282,103	1,290,067	1,138,204	480,786	(2,829,815)	1,361,345
(Benefit of) provision for income taxes	(254)	6,964	(124,470)	187,655	—	69,895
Net income	1,282,357	1,283,103	1,262,674	293,131	(2,829,815)	1,291,450
Less: Net income attributable to non-controlling interests	—	—	—	9,093	—	9,093
Net income attributable to CBRE Group, Inc.	$ 1,282,357	$ 1,283,103	$ 1,262,674	$ 284,038	$ (2,829,815)	$ 1,282,357

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 revenue	—	—	9,513,947	6,935,265	—	16,449,212
Operating, administrative and other	24,523	1,156	1,715,150	1,624,944	—	3,365,773
Depreciation and amortization	—	—	271,378	180,610	—	451,988
Total costs and expenses	24,523	1,156	11,500,475	8,740,819	—	20,266,973
Gain on disposition of real estate	—	—	7,705	7,169	—	14,874
Operating (loss) income	(24,523)	(1,156)	505,699	607,969	—	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 expense, net of interest income	—	(32,031)	329,083	(198,367)	—	98,685
Write-off of financing costs on extinguished debt	—	27,982	—	—	—	27,982
Royalty and management service (income) expense	—	—	(61,626)	61,626	—	—
Income from consolidated subsidiaries	1,081,643	1,079,469	578,320	—	(2,739,432)	—
Income before (benefit of) provision for income taxes	1,057,120	1,082,363	1,243,299	735,656	(2,739,432)	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	581,049	(2,739,432)	1,065,948
Less: Net income attributable to non-controlling interests	—	—	—	2,729	—	2,729
Net income attributable to CBRE Group, Inc.	$ 1,063,219	$ 1,081,643	$ 1,079,469	$ 578,320	$ (2,739,432)	$ 1,063,219

Condensed Consolidating Statement of Operations

	For the Year Ended December 31, 2017					
	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 revenue	—	—	8,517,114	5,787,985	—	14,305,099
Operating, administrative and other	5,661	1,972	1,437,641	1,413,446	—	2,858,720
Depreciation and amortization	—	—	239,863	166,251	—	406,114
Total costs and expenses	5,661	1,972	10,194,618	7,367,682	—	17,569,933
Gain on disposition of real estate	—	—	6,037	13,791	—	19,828
Operating (loss) income	(5,661)	(1,972)	513,424	572,891	—	1,078,682
Equity income from unconsolidated subsidiaries	—	—	206,655	3,552	—	210,207
Other income	—	1	22	9,382	—	9,405
Interest expense, net of interest income	—	(10,648)	110,494	27,115	—	126,961
Royalty and management service expense (income)	—	—	66,191	(66,191)	—	—
Income from consolidated subsidiaries	700,608	695,245	464,046	—	(1,859,899)	—
Income before (benefit of) provision for income taxes	694,947	703,922	1,007,462	624,901	(1,859,899)	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	470,513	(1,859,899)	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	$ 464,046	$ (1,859,899)	$ 697,109

Condensed Consolidating Statement of Comprehensive Income

	For the Year Ended December 31, 2019					
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Eliminations	Consolidated Total
Net income	$ 1,282,357	$ 1,283,103	$ 1,262,674	$ 293,131	$ (2,829,815)	$ 1,291,450
Other comprehensive income:						
Foreign currency translation loss	—	—	—	(14,092)	—	(14,092)
Amounts reclassified from accumulated other comprehensive loss to interest expense, net	—	1,320	—	—	—	1,320
Unrealized holding gains on available for sale debt securities, net	—	—	2,101	—	—	2,101
Pension liability adjustments, net	—	—	—	944	—	944
Legal entity restructuring, net	—	—	—	63,149	—	63,149
Other, net	—	(104)	—	(14,842)	—	(14,946)
Total other comprehensive income	—	1,216	2,101	35,159	—	38,476
Comprehensive income	1,282,357	1,284,319	1,264,775	328,290	(2,829,815)	1,329,926
Less: Comprehensive income attributable to non-controlling interests	—	—	—	9,048	—	9,048
Comprehensive income attributable to CBRE Group, Inc.	$ 1,282,357	$ 1,284,319	$ 1,264,775	$ 319,242	$ (2,829,815)	$ 1,320,878

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	$ 581,049	$ (2,739,432)	$ 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	415,903	(2,739,432)	899,021
Less: Comprehensive income attributable to non-controlling interests	—	—	—	1,657	—	1,657
Comprehensive income attributable to CBRE Group, Inc.	$ 1,063,219	$ 1,084,790	$ 1,074,541	$ 414,246	$ (2,739,432)	$ 897,364

Condensed Consolidating Statement of Comprehensive Income

	For the Year Ended December 31, 2017					
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Eliminations	Consolidated Total
Net income	$ 697,109	$ 700,608	$ 695,245	$ 470,513	$ (1,859,899)	$ 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	701,782	(1,859,899)	942,928
Less: Comprehensive income attributable to non-controlling interests	—	—	—	6,879	—	6,879
Comprehensive income attributable to CBRE Group, Inc.	$ 697,107	$ 706,157	$ 697,781	$ 694,903	$ (1,859,899)	$ 936,049

Condensed Consolidating Statement of Cash Flow

	For the Year Ended December 31, 2019				
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Consolidated Total
CASH FLOWS PROVIDED BY OPERATING ACTIVITIES:	$ 133,051	$ 28,603	$ 906,398	$ 155,328	$ 1,223,380
CASH FLOWS FROM INVESTING ACTIVITIES:					
Capital expenditures	—	—	(190,143)	(103,371)	(293,514)
Acquisition of businesses, including net assets acquired, intangibles and goodwill, net of cash acquired	—	—	(13,788)	(342,138)	(355,926)
Contributions to unconsolidated subsidiaries	—	—	(63,016)	(42,931)	(105,947)
Distributions from unconsolidated subsidiaries	—	—	29,319	3,970	33,289
Purchase of equity securities	—	—	(12,017)	—	(12,017)
Proceeds from sale of equity securities	—	—	14,065	1,558	15,623
Purchase of available for sale debt securities	—	—	(8,853)	—	(8,853)
Proceeds from the sale of available for sale debt securities	—	—	4,671	—	4,671
Other investing activities, net	—	—	1,102	548	1,650
Net cash used in investing activities	—	—	(238,660)	(482,364)	(721,024)
CASH FLOWS FROM FINANCING ACTIVITIES:					
Proceeds from senior term loans	—	300,000	—	—	300,000
Repayment of senior term loans	—	(300,000)	—	—	(300,000)
Proceeds from revolving credit facility	—	3,609,000	—	—	3,609,000
Repayment of revolving credit facility	—	(3,609,000)	—	—	(3,609,000)
Repayment of debt assumed in the acquisition of Telford Homes	—	—	—	(110,687)	(110,687)
Repurchase of common stock	(145,137)	—	—	—	(145,137)
Acquisition of businesses (cash paid for acquisitions more than three months after purchase date)	—	—	(30,268)	(11,879)	(42,147)
Units repurchased for payment of taxes on equity awards	(18,426)	—	—	—	(18,426)
Non-controlling interest contributions	—	—	—	46,612	46,612
Non-controlling interest distributions	—	—	—	(3,957)	(3,957)
Decrease (increase) in intercompany receivables, net	30,512	(45,862)	(601,577)	616,927	—
Other financing activities, net	—	(3,351)	—	5,144	1,793
Net cash (used in) provided by financing activities	(133,051)	(49,213)	(631,845)	542,160	(271,949)
Effect of currency exchange rate changes on cash and cash equivalents and restricted cash	—	—	—	(606)	(606)
NET (DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS AND RESTRICTED CASH	—	(20,610)	35,893	214,518	229,801
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT BEGINNING OF PERIOD	7	34,063	274,948	554,926	863,944
CASH AND CASH EQUIVALENTS AND RESTRICTED CASH, AT END OF PERIOD	$ 7	$ 13,453	$ 310,841	$ 769,444	$ 1,093,745
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:					
Cash paid during the period for:					
Interest	$ —	$ 69,667	$ —	$ 16,999	$ 86,666
Income taxes, net	$ —	$ —	$ 188,329	$ 176,736	$ 365,065

Condensed Consolidating Statement of Cash Flows

	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
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	10,648	13,441
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)
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)
Decrease (increase) in intercompany receivables, net	84,213	716,837	233,975	(1,035,025)	—
Other financing activities, net	357	(212)	(16)	(16,041)	(15,912)
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

Condensed Consolidating Statement of Cash Flows

	For the Year Ended December 31, 2017				
	Parent	CBRE Services	Guarantor Subsidiaries	Nonguarantor Subsidiaries	Consolidated Total
CASH FLOWS PROVIDED BY (USED IN) 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)
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)
(Increase) decrease in intercompany receivables, net	(60,271)	520,579	(338,396)	(121,912)	—
Other financing activities, net	479	(7,978)	(3,145)	(8,253)	(18,897)
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

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

	Three Months Ended December 31, 2019	Three Months Ended September 30, 2019	Three Months Ended June 30, 2019	Three Months Ended March 31, 2019
	(Dollars in thousands, except share data)			
Revenue	$ 7,119,407	$ 5,925,101	$ 5,714,073	$ 5,135,510
Operating income	$ 513,841	$ 316,630	$ 284,417	$ 144,987
Net income attributable to CBRE Group, Inc.	$ 637,618	$ 256,599	$ 223,731	$ 164,409
Basic income per share	$ 1.90	$ 0.76	$ 0.67	$ 0.49
Weighted average shares outstanding for basic income per share	334,745,003	336,203,747	336,222,471	336,020,431
Diluted income per share	$ 1.87	$ 0.75	$ 0.66	$ 0.48
Weighted average shares outstanding for diluted income per share	340,333,005	341,100,182	340,508,931	340,158,399

	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

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 Telford Homes Plc during 2019, as defined in Note 4 to the consolidated financial statements, and excluded from our assessment of the effectiveness of our internal control over financial reporting as of December 31, 2019 Telford Homes Plc's internal control over financial reporting associated with total assets of $525.4 million and total revenues of $97.5 million included in our consolidated financial statements as of December 31, 2019.

Based on our evaluation under the COSO framework, our management concluded that we did not maintain effective internal control over financial reporting as of December 31, 2019 due to the fact that material weaknesses existed in the company's internal control over financial reporting as further described below. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

Our independent registered public accounting firm, KPMG LLP, who audited the consolidated financial statements included in this Annual Report on Form 10-K, has expressed an adverse report on the operating effectiveness of the company's internal control over financial reporting. KPMG LLP's report is included herein on page 2.

Material Weaknesses Identified Relating to Global Workplace Solutions Segment – Europe, Middle East & Africa Region (GWS EMEA)

Based on our evaluation under the COSO framework, our management concluded that we did not maintain effective internal control over financial reporting as of December 31, 2019 due to the fact that material weaknesses existed in GWS EMEA.

As of December 31, 2019, we determined that the severity of control failures isolated to GWS EMEA led management to conclude that the following material weaknesses existed in the internal control environment in GWS EMEA:

- GWS EMEA did not have sufficient resources in the local GWS EMEA territories with the appropriate reporting lines, roles and responsibilities, authority, training and skill sets to design and operate financial activities, including controls, in an appropriate and timely manner.
- GWS EMEA did not effectively assess and address the risks posed by changes in the business and the related effect on the GWS EMEA system of internal controls. In relation to this, specific to the rollout of GWS EMEA's primary financial system, GWS EMEA did not effectively operate general information technology controls related to financial data migrations, user access, system changes and financial data processing. Because of the deficiencies in general information technology controls, the business process controls (automated and manual) that are dependent on this system were also deemed ineffective because they could have been adversely impacted.
- GWS EMEA did not design or execute control activities that sufficiently mitigated the financial reporting risks related to GWS EMEA.
- GWS EMEA did not have an effective information and communication process to identify, capture and process relevant information necessary for financial accounting and reporting.
- The company did not monitor the presentation and effectiveness of components of internal control through evaluation and remediation in an appropriate manner within GWS EMEA and GWS EMEA was not sufficiently integrated with the corporate oversight function.

Consequently, there were control failures for GWS EMEA in the areas of revenue and receivables, balance sheet account reconciliations, journal entries and general information technology controls. During 2019, as GWS EMEA increased in complexity and grew in both size and scale, management did not prioritize an appropriate level of oversight, a sufficient number of capable resources or training for control owners to address internal controls over financial reporting. As a result, even though a material misstatement was not identified in the GWS EMEA financial statements, it was determined that there was a reasonable possibility that a material misstatement in the GWS EMEA financial statements would not have been prevented or detected on a timely basis.

The Company's Plan to Remediate the Material Weaknesses

The company, with the oversight from the Audit Committee of the Board of Directors, is committed to remediating the GWS EMEA material weaknesses in a timely manner. We have begun the process of executing remediation plans that address the material weaknesses in our internal controls over financial reporting. We are engaged in various stages of remedial actions to address the material weaknesses described above. We are using both internal and external resources to assist in the following actions:

- Performing a comprehensive review of the GWS EMEA's finance and accounting operating model to establish and implement a target operating model under the recently developed Finance Innovation Office under the Chief Financial Officer, which will assess people and headcount, reporting lines, roles and responsibilities, training, technology and tools.
- Assessing key processes at material GWS EMEA locations to ensure that the processes, procedures and controls are adequately designed, are clearly documented, standardized and appropriately communicated to enhance control ownership throughout the GWS EMEA organization.

- Reviewing the GWS EMEA finance and accounting organization to ensure GWS EMEA compliance and Information Technology resources are under the CBRE Global SOX and Financial Reporting Systems governance programs led by the Chief Accounting Officer and that control preparers and reviewers align to an appropriate organizational structure to sustain the remedial actions, including those related to business process and general information technology controls.
- Evaluating and designing controls to address the completeness and accuracy of data used to support key estimations, accounting transactions and disclosures, primarily associated with spreadsheets and other key reports.
- Enhancing GWS EMEA's risk assessment and monitoring procedures by implementing new training activities, hiring additional capable resources, and enhancing our Risk and Fraud Risk assessment processes to ensure appropriate resources and controls are in place to mitigate risks as commensurate with the global risk assessment and that GWS EMEA's process is fully incorporated into the corporate oversight function.

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 Global Controller, our Vice President 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 not effective as of December 31, 2019 to accomplish their objectives at the reasonable assurance level because of the material weaknesses described above.

Notwithstanding such material weaknesses in internal control over financial reporting, our management concluded that our consolidated financial statements in this Annual Report on Form 10-K present fairly, in all material respects, the company's financial position, results of operations and cash flows as of the dates, and for the periods presented, in conformity with U.S. GAAP.

Changes in Internal Control Over Financial Reporting

Other than the material weaknesses described above, there have been no changes in our internal control over financial reporting during the fiscal quarter ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Our remediation efforts related to the material weaknesses are ongoing.

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 2020 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 2020 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 2020 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 2020 Annual Meeting of Stockholders is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services.

The information contained under the heading “Audit and Other Fees” in the definitive proxy statement for our 2020 Annual Meeting of Stockholders is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

1. *Financial Statements*

See Index to Consolidated Financial Statements set forth on page 2.

2. *Financial Statement Schedules*

See Schedule II on page 2.

3. *Exhibits*

See Exhibit Index beginning on page 2 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, 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	60,348
Charges to expense	20,373
Write-offs, payments and other	(7,996)
Balance, December 31, 2019	$ 72,725

EXHIBIT INDEX

Exhibit No.	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	SEC File No.	Exhibit	Filing Date	
2.1	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.	8-K	001-32205	1.01	11/13/2013	
2.2	Stock and Asset Purchase Agreement, dated as of March 31, 2015, by and between Johnson Controls, Inc. and CBRE, Inc.	8-K	001-32205	2.1	04/03/2015	
3.1	Amended and Restated Certificate of Incorporation of CBRE Group, Inc.	8-K	001-32205	3.1	05/23/2018	
3.2	Amended and Restated By-Laws of CBRE Group, Inc.	8-K	001-32205	3.2	05/23/2018	
4.1	Form of Class A common stock certificate of CBRE Group, Inc.	10-Q	001-32205	4.1	08/09/2017	
4.2(a)	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	10-Q	001-32205	4.4(a)	05/10/2013	
4.2(b)	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	8-K	001-32205	4.1	09/26/2014	
4.2(c)	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(d)	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	

Exhibit No.	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	SEC File No.	Exhibit	Filing Date	
4.2(e)	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(f)	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	
4.2(g)	Sixth Supplemental Indenture, dated as of January 28, 2020, among CBRE Holdings, LLC, CBRE Services, Inc. and Wells Fargo Bank, National Association, as trustee, relating to the 5.25% Senior Notes due 2025 and the 4.875% Senior Notes due 2026					X
4.3	Description of Securities					X
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	10-K	001-32205	10.2	03/01/2019	
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	Incremental Term Loan Assumption Agreement, dated as of March 4, 2019 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	03/05/2019	

Exhibit No.	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	SEC File No.	Exhibit	Filing Date	
10.5	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	
10.6	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	10-K	001-32205	10.5	03/01/2019	
10.7	CBRE Group, Inc. Executive Bonus Plan +					X
10.8	CBRE Group, Inc. Executive Incentive Plan +	8-K	001-32205	10.1	05/21/2015	
10.9	Form of Indemnification Agreement for Directors and Officers +	8-K	001-32205	10.1	12/08/2009	
10.10	Form of Indemnification Agreement for Directors and Officers +	10-Q	001-32205	10.3	05/10/2016	
10.11	CBRE Group, Inc. 2012 Equity Incentive Plan +	S-8	333-181235	99.1	05/08/2012	
10.12	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	
10.13	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	
10.14	CBRE Group, Inc. 2017 Equity Incentive Plan +	S-8	333-218113	99.1	05/19/2017	
10.15	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (Time Vest) +	8-K	001-32205	10.2	03/5/2019	
10.16	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (Performance Vest) +	8-K	001-32205	10.3	03/5/2019	
10.17	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (Groch Time Vest) +	8-K	001-32205	10.4	03/5/2019	

Exhibit No.	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	SEC File No.	Exhibit	Filing Date	
10.18	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2017 Equity Incentive Plan (Groch Performance Vest) +	8-K	001-32205	10.5	03/5/2019	
10.19	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	
10.20	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	
10.21	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	
10.22	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	
10.23	CBRE Group, Inc. 2019 Equity Incentive Plan +	S-8 POS	333-231572	99.1	05/29/2019	
10.24	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2019 Equity Incentive Plan (Time Vest) +					X
10.25	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2019 Equity Incentive Plan (Performance Vest) +	10-Q	001-32205	10.4	08/09/2019	
10.26	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2019 Equity Incentive Plan (Groch Time Vest) +					X
10.27	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2019 Equity Incentive Plan (Groch Performance Vest) +	10-Q	001-32205	10.6	08/09/2019	
10.28	Form of Grant Notice and Restricted Stock Unit Agreement for the CBRE Group, Inc. 2019 Equity Incentive Plan (Non-Employee Director) +	10-Q	001-32205	10.7	08/09/2019	
10.29	CBRE Deferred Compensation Plan, effective January 1, 2019 +	10-K	001-32205	10.22	03/1/2019	
10.30	CBRE Adoption Agreement +	10-K	001-32205	10.23	03/1/2019	
10.31	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	

Exhibit No.	Exhibit Description	Incorporated by Reference Form	SEC File No.	Exhibit	Filing Date	Filed Herewith
10.32	Form of Restricted Covenants Agreement	10-K	001-32205	10.33	03/1/2018	
10.33	Letter Agreement dated as of January 4, 2019 by and between CBRE, Inc. and James R. Groch +	10-Q	001-32205	10.1	05/10/2019	
10.34	Letter Agreement dated as of April 4, 2019 by and between CBRE, Inc. and Leah C. Stearns +	10-Q	001-32205	10.2	05/10/2019	
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	Inline XBRL Instance Document (the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document)					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document					X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)					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 2, 2020

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
/s/ DARA A. BAZZANO **Dara A. Bazzano**	Chief Accounting Officer (Principal Accounting Officer)	March 2, 2020
/s/ BRANDON B. BOZE **Brandon B. Boze**	Chair of the Board	March 2, 2020
/s/ BETH F. COBERT **Beth F. Cobert**	Director	March 2, 2020
/s/ CURTIS F. FEENY **Curtis F. Feeny**	Director	March 2, 2020
/s/ REGINALD H. GILYARD **Reginald H. Gilyard**	Director	March 2, 2020
/s/ SHIRA D. GOODMAN **Shira D. Goodman**	Director	March 2, 2020
/s/ CHRISTOPHER T. JENNY **Christopher T. Jenny**	Director	March 2, 2020
/s/ GERARDO I. LOPEZ **Gerardo I. Lopez**	Director	March 2, 2020
/s/ LEAH C. STEARNS **Leah C. Stearns**	Chief Financial Officer (Principal Financial Officer)	March 2, 2020
/s/ ROBERT E. SULENTIC **Robert E. Sulentic**	Director and President and Chief Executive Officer (Principal Executive Officer)	March 2, 2020
/s/ LAURA D. TYSON **Laura D. Tyson**	Director	March 2, 2020
/s/ RAY WIRTA **Ray Wirta**	Director	March 2, 2020
/s/ SANJIV YAJNIK **Sanjiv Yajnik**	Director	March 2, 2020

Exhibit 4.2(g)

SIXTH SUPPLEMENTAL INDENTURE

THIS SIXTH SUPPLEMENTAL INDENTURE (this "Supplemental Indenture"), dated as of January 28, 2020, among CBRE Holdings, LLC, a Delaware limited liability company (the "Guaranteeing Subsidiary"), and an indirect subsidiary of CBRE Services, Inc., a Delaware corporation (the "Issuer"), the Issuer and Wells Fargo Bank, National Association, as trustee (the "Trustee").

W I T N E S S E T H

WHEREAS, each of the Issuer and the Initial Guarantors has heretofore executed and delivered to the Trustee an indenture (the "Indenture"), dated as of March 14, 2013, providing for the issuance of an unlimited aggregate principal amount of debt securities (the "Securities");

WHEREAS, the Indenture provides that under certain circumstances subsidiaries of the Issuer shall execute and deliver to the Trustee a supplemental indenture pursuant to which such subsidiaries shall unconditionally Guarantee all of the Issuer's payment obligations under a specified series of the Securities on the terms and conditions set forth herein and under the Indenture; and

WHEREAS, pursuant to Section 901(4) of the Indenture, the Trustee is authorized to execute and deliver this Supplemental Indenture.

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt of which is hereby acknowledged, the parties mutually covenant and agree for the equal and ratable benefit of the Holders as follows:

1. Capitalized Terms. Capitalized terms used herein without definition shall have the meanings assigned to them in the Indenture.

2. Guarantor. The Guaranteeing Subsidiary hereby agrees to be a Guarantor under the Indenture and to be bound by the terms of the Indenture applicable to Guarantors of the Issuer's:

   A. 5.25% Senior Notes due 2025 (the "2025 Notes"), including Article VI of the Second Supplemental Indenture, dated as of September 24, 2014, relating to the 2025 Notes; and

   B. 4.875% Senior Notes due 2026 (the "2026 Notes" and, together with the 2025 Notes, the "Specified Securities"), including Article VI of the Fourth Supplemental Indenture, dated as of August 13, 2015, relating to the 2026 Notes; and, with respect each of the Specified Securities, including Article XV of the Indenture.

3. Governing Law. THIS SUPPLEMENTAL INDENTURE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK.

4. Waiver of Jury Trial. EACH OF THE GUARANTEEING SUBSIDIARY AND THE TRUSTEE HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING AS BETWEEN THE ISSUER, THE GUARANTORS AND THE TRUSTEE ONLY ARISING OUT OF OR RELATING TO THIS SUPPLEMENTAL INDENTURE, THE INDENTURE, THE GUARANTEES OR THE SPECIFIED SECURITIES.

5. Counterparts. The parties may sign any number of copies of this Supplemental Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

6. Headings. The section headings of this Supplemental Indenture are for convenience only and shall not affect the construction hereof.

7. Binding Obligation. This Supplemental Indenture has been duly executed and delivered by the Guaranteeing Subsidiary and constitutes a valid and binding agreement of each of the Guaranteeing Subsidiary, enforceable against the Guaranteeing Subsidiary in accordance with its terms, except as the enforcement thereof may be limited by (a) bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium and other similar laws relating to or affecting the rights and remedies of creditors, (b) general equitable principles (whether considered in a proceeding in equity or law) and (c) an implied covenant of good faith and fair dealing.

IN WITNESS WHEREOF, the parties hereto have caused this Supplemental Indenture to be duly executed, all as of the date first above written.

CBRE HOLDINGS, LLC

By: CBRE PARTNER, INC., its Managing Member

/s/ Pasha Zargarof
Name:Pasha Zargarof
Title:Senior Vice President

CBRE SERVICES, INC., as Issuer

/s/ Debbie Fan
Name: Debbie Fan
Title:Senior Vice President and Treasurer

WELLS FARGO BANK, NATIONAL ASSOCIATION, as Trustee

By
/s/ Casey A. Boyle
Name: Casey A. Boyle
Title: Assistant Vice President

[Signature Page to the Supplemental Indenture]

Exhibit 4.3

DESCRIPTION OF SECURITIES

CAPITAL STOCK

As of December 31, 2019, CBRE Group, Inc. ("CBRE" or "our") had one class of securities, our Class A common stock, $0.01 par value per share ("Common Stock"), registered under Section 12 of the Securities Exchange Act of 1934, as amended.

Shares of our Common Stock are traded on the New York Stock Exchange under the trading symbol "CBRE."

The following description of our Common Stock is a summary and is subject to, and is qualified in its entirety by reference to the provisions of our Amended and Restated Certificate of Incorporation (the "Charter") and our Amended and Restated By-Laws (the "By-Laws"), copies of which are exhibits to the Annual Report on Form 10-K to which this description is an exhibit. This description does not purport to be complete and is subject in all respects to the applicable provisions of the Delaware General Corporation Law (the "DGCL"), the Charter and the By-Laws.

Authorized Capital Stock. Our authorized capital stock consists of (i) 525,000,000 shares of Common Stock and (ii) 25,000,000 shares of preferred stock, $0.01 par value per share ("Preferred Stock"). As of December 31, 2019, we had no outstanding shares of Preferred Stock. All outstanding shares of Common Stock are fully paid and nonassessable. The Charter authorizes our board of directors, without any further approval, to divide the Preferred Stock into series and fix the powers, including voting powers, preferences and other rights of such series, and any qualifications, limitations or restrictions of such series of Preferred Stock.

Voting Rights. Holders of Common Stock generally are entitled to one vote per share on all matters on which our stockholders are entitled to vote. Our directors are elected by a plurality of the votes of the shares of the Common Stock present in person or represented by proxy at a stockholder meeting called for such election. Holders of Common Stock do not have cumulative voting rights in the election of directors.

Dividends. Holders of Common Stock are entitled to receive ratably dividends if, as and when declared from time to time by our board of directors out of funds legally available for that purpose, subject to the preferences of any outstanding Preferred Stock and to any restrictions contained in agreements to which we are a party.

Liquidation Rights. Upon our dissolution, liquidation or winding up, the holders of Common Stock are entitled to receive ratably the assets available for distribution to our stockholders after payment of liabilities and accrued but unpaid dividends and liquidation preferences on any outstanding Preferred Stock.

Amendments to By-Laws. The Charter grants our board of directors the authority to amend and repeal the By-Laws without a stockholder vote in any manner not inconsistent with the laws of the State of Delaware or the Charter. The By-Laws provide that the By-Laws may be amended,

added to, rescinded or repealed at any meeting of our board of directors or of the stockholders, provided adequate notice was provided.

Anti-Takeover Provisions of the Charter, the By-Laws and the DGCL. Certain provisions of the Charter, the By-Laws and the DGCL may have an anti-takeover effect and may delay, defer or prevent a tender offer or takeover attempt that a stockholder might consider in our stockholders' best interest, including those attempts that might result in a premium over the market price for the shares held by our stockholders. Such provisions in the Charter and the By-Laws include restrictions on the ability of stockholders to nominate members of our board of directors and the ability of stockholders to call special stockholder meetings.

We have elected to be subject to Section 203 of the DGCL, which imposes certain restrictions on mergers and other business combinations between us and any holder of 15% or more of our outstanding Common Stock, except for holders who owned 15% or more of our outstanding Common Stock on June 16, 2004, the date on which we elected to become subject to Section 203 of the DGCL.

Special Stockholder Meetings. Except as otherwise required by law and subject to the rights of the holders of any series of Preferred Stock outstanding, a special meeting of stockholders may be called at any time by (i) the chair of our board of directors, (ii) our chief executive officer, (iii) our board of directors or (iv) our corporate secretary upon the written request by stockholders owning at least 25% (in the aggregate) of the outstanding shares of capital stock entitled to vote on the matter or matters to be brought before the proposed special meeting.

Advance Notice and Proxy Access Provisions. Our By-Laws require timely advance notice for stockholders seeking to bring business before our annual meeting of stockholders or to nominate candidates for election as directors at our annual meeting of stockholders and specify certain requirements regarding the form and content of a stockholder's notice.

Under the By-Laws, a stockholder (or a group of up to 20 stockholders) who has held at least 3% of our outstanding Common Stock for three years or more may nominate a director and have that nominee included in our proxy materials, provided that the stockholder and nominee satisfy the requirements specified in the By-Laws. Any stockholder who intends to use these procedures to nominate a candidate for election to our board of directors for inclusion in our proxy statement must satisfy the requirements specified in the By-Laws.

Transfer Agent. The transfer agent for our Common Stock is Broadridge Corporate Issuer Solutions, Inc.

Forum Selection. Under the By-Laws, unless CBRE consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall, to the fullest extent permitted by applicable law, be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of CBRE, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer, other employee or stockholder of CBRE to CBRE or our stockholders, (iii) any action arising pursuant to any provision of the DGCL or as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware or (iv) any action asserting a claim governed by the internal affairs doctrine.

Other Matters. Our Common Stock does not have preemptive or conversion rights and is not subject to further calls or assessment by us. There are no redemption or sinking fund provisions applicable to our Common Stock.

Exhibit 10.7

CBRE GROUP, INC.

EXECUTIVE BONUS PLAN

Dated November 13, 2019

1. PLAN OBJECTIVE

The Executive Bonus Plan ("EBP" or the "Plan") has been designed to reward and encourage the efforts of the executive officers of CBRE Group, Inc. ("CBRE" or the "Company") to successfully attain the Company's goals by directly tying the Participant's compensation to Company and individual results. The EBP is also designed to (a) provide competitive compensation opportunities for executive officers and (b) assist in retaining and attracting key employees for CBRE.

2. EFFECTIVENESS AND PLAN YEAR

The Plan is dated the first date set forth above and is effective in respect of the 2019 Plan Year (as defined below) such that it shall apply in respect of Awards (as defined below) in respect of such Plan Year. The Plan will remain in effect until suspended, amended, terminated or otherwise altered in accordance with Section 10 hereof. The Plan supersedes and replaces, in total, all prior versions of the Plan or any other bonus guarantees. A "Plan Year" starts on January 1 and ends December 31 of the same year.

3. PLAN ADMINISTRATION

Human Resources will administer the Plan, including participation, eligibility criteria and payment of Awards, subject to final review and approval by the Chief Executive Officer and the Compensation Committee of the Board of Directors (the "Committee").

4. ELIGIBILITY

4.1 Eligibility for participation in the EBP and receipt of bonus awards pursuant to the terms and conditions of the Plan ("Awards") will be limited to the Chief Executive Officer and other executive officers specifically designated and approved by the Chief Executive Officer and the Committee each year (the CEO and such other officers so designated and approved, "Participants"). Unless otherwise specifically approved by the Chief Executive Officer and the Committee, executive officers who participate in any other Company bonus plan, as well as executive officers who are paid on a commission basis or participate in the bonus plan for commissioned salespersons, are not eligible to participate in the EBP.

4.2 Participation for a Participant begins on the first day of employment or the designated effective date of a Participant's eligibility to participate in the Plan. Eligibility for the Plan does not guarantee payment of an Award because payment is dependent upon earning the Award and the other provisions of the Plan, including both individual and Company performance.

4.3 Participants who are newly hired, transfer to a new position or become eligible to participate during a Plan Year are eligible to earn an Award as follows:

(a) Newly-hired or newly-eligible Participants will be eligible for a pro-rated Award based on the number of full weeks worked in the eligible position from the first date of employment or the designated effective date during the Plan Year.

(b) Participants who transfer to a new position that is not then eligible for the Plan will be eligible for a prorated Award based on the number of full weeks worked in the eligible position during the Plan Year.

(c) Participants who transfer or are promoted to another position and remain eligible for the Plan under the new position will be eligible to earn a prorated Award for each position based on the number of full weeks worked in each position during the Plan Year. Eligibility to earn Awards will be based on the number of full weeks the Participant worked in each position and the applicable Target Awards and/or ratings for each position.

4.4 If the employment status of a Participant changes prior to the Payment Date (as defined below), eligibility for an Award will depend on the reason for the status change:

(a) Resignation or voluntary termination for any reason: Eligibility for Awards is forfeited on resignation or voluntary termination by the Participant for any reason before the Payment Date.

(b) Involuntary termination for Cause: Eligibility for Awards is forfeited on involuntary termination by the Company for Cause before the Payment Date. As used herein, the term "Cause" shall mean: (i) an uncured material breach by a Participant of one or more of the material terms and conditions of such Participant's employment agreement, (ii) a material violation by a Participant of the Company's published policies without permission or just cause, (iii) a Participant's substantial and continuing non-performance under such Participant's employment agreement, (iv) any act of fraud, embezzlement or other dishonesty in connection with a Participant's duties and obligations, (v) any intentional act by a Participant that would jeopardize the Company's licenses to do business, or (vi) the commission by a Participant of any illegal and/or unethical act that adversely and materially affects the character, goodwill and public reputation of the Company.

(c) Involuntary termination not for Cause: Eligibility for Awards is forfeited on involuntary termination by the Company not for Cause before the Payment Date. Participants classified as a Highly Compensated Employee ("HCE") and eligible for severance benefits as defined by the Severance Pay Policy then in effect are eligible (but not guaranteed) to receive a pro-rated target bonus at the sole discretion of the Company under the provisions of the Company's Severance Pay Policy then in effect.

(d) Retirement: If a Participant Retires (as defined below) prior to a Payment Date and participated in the Plan for at least 26 full weeks of the Plan Year, eligibility for an Award may (but is not guaranteed to) be prorated based on the number of full weeks of participation in the Plan Year. If paid, a prorated Award will be paid at the time that Awards are paid to Participants generally. If participation in the Plan is for less than 26 full weeks during the Plan Year, the Retiring Participant is not eligible for an Award for that Plan Year. As used in this Section 4.4(d), "Retire" (and corresponding terms) means voluntary termination of employment by a Participant with the Company or an affiliated company, where such Participant has completed at least ten years of Continuous Service and (i) for U.S. Participants, the attainment of age 62, or (ii) for non-U.S. Participants, the attainment of age 62 or such earlier age at which such Participant is required to retire from Continuous Service under applicable law or an applicable retirement plan or policy. "Continuous Service" means uninterrupted service as an employee. A Participant's Continuous Service does not terminate if he or she is a common-law employee and goes on a bona fide leave of absence that was approved by the Company in writing and the terms of the leave provide for continued service crediting, or when continued service crediting is required by applicable law.

(e) Death or disability: If a Participant dies or becomes disabled prior to a Payment Date, eligibility for an Award may (but is not guaranteed to) be prorated based on the number of full weeks of participation in the Plan Year. If paid, any prorated Award will be paid at the time that Awards are paid to Participants generally. A Participant will be considered "disabled" if the Participant is disabled as defined under the provisions of the Company's Long-Term Disability Plan then in effect. For a Participant who dies prior to the Payment Date, the Award (if paid) will be paid to the Participant's beneficiary as designated in the Participant's group term life insurance at the time of death.

5. DISCRETIONARY COMPANY THRESHOLDS

Awards may not be paid to any Participant if the Company fails to achieve one or more minimum financial performance targets (the "Discretionary Company Thresholds") as determined and set by the Company in its sole discretion. The Discretionary Company Thresholds may be set and/or amended by the Company at its sole discretion at any time during the Plan Year and up to the Payment Date.

6. TIMING OF CALCULATIONS, PAYMENTS

6.1 Awards are earned by performance during the Plan Year and by remaining actively employed by the Company through the date Awards are paid.

6.2 Subject to final approval by the Chief Executive Officer and the Committee, Awards will be paid on or before March 15 following the end of the Plan Year with respect to which the Award relates (such date of payment, the "Payment Date").

6.3 Subject to Sections 4.4(c), 4.4(d) and 4.4(e), if a Participant's employment terminates for any reason (whether voluntarily or involuntarily) either during the Plan Year or following the end of the Plan Year but prior to the Payment Date, unless otherwise determined by the Company pursuant to the terms hereof, no Award (or portion thereof) shall be payable or earned with respect to such Plan Year.

6.4 It is intended that all Awards earned will be paid in cash. However, the Company reserves the right to distribute common stock in the Company or other non-cash forms of compensation in lieu of cash in the event economic circumstances dictate such action.

6.5 Federal and state income taxes and other required taxes will be withheld from bonuses under applicable law.

6.6 To the extent that any Awards under the Plan are subject to Section 409A of the Internal Revenue Code ("IRC"), the terms and administration of such Awards shall comply with the provisions of such Section, applicable IRC guidance and good faith reasonable interpretations thereof, and, to the extent necessary to achieve compliance, such Awards shall be modified, replaced, or terminated at the discretion of the Committee.

7. MAXIMUM ANNUAL BONUSES

The maximum Award to be received by any Participant shall not exceed 200% of the Target Award (as defined below), inclusive of CEO Awards (as defined below).

8. CEO AWARDS

The Company reserves the right to award to a Participant a supplemental discretionary bonus award in cases of exceptional and exceedingly deserving circumstances, the amount of which shall be determined in the Chief Executive Officer's sole discretion (subject to the ratification by the Committee). This supplemental award is referred to herein as a "CEO Award."

9. AWARD CALCULATION

9.1 Participants are eligible for an Award each Plan Year, based on (a) financial measures ("Financial Performance Targets") for the Company, business segment, business unit or line of business, and (b) individual achievement of important Company or individual objectives in each Participant's area of responsibility ("Strategic Performance Objectives").

9.2 Target Awards:

(a) Each Participant will be assigned a "Target Award" by the Company in its sole discretion (generally based on a Participant's position and that position's potential contribution to the Company) by March 31 of each Plan Year. For new hires or newly-eligible Participants (whether by transfer or promotion), the Target Award will be set within ninety (90) days of eligibility for the Plan.

(b) Target Awards will be determined based on Financial Performance Targets and Strategic Performance Objectives established at or near the beginning of a Plan Year for each Participant (or for new hires or newly-eligible Participants (whether by transfer or promotion), established at or near the date of their eligibility to participate in the Plan). Awards will be determined as set forth in Section 9.5 below by making a preliminary determination of the Award based on achievement of Financial Performance Targets and then adjusting that resulting amount for each Participant (as further weighted by his or her Strategic Performance Portion (as defined below)) based on performance against Strategic Performance Objectives. At the Committee's direction, Strategic Performance Objectives account for 20% to 50% (inclusive) of the Target Award (depending on the executive category) (the "Strategic Performance Portion"), and the remainder is the "Financial Performance Portion." For example, if the Committee determines that an Award should be weighted 80% on financial measures and 20% on strategic objectives, then that Participant's Financial Performance Portion would be 80%, and that Participant's Strategic Performance Portion would be 20%.

(c) In the event that a Target Award amount or weighting of any component thereof is changed during a Plan Year, the payment of that Plan Year's Award will be pro-rated based on the number of full weeks that each respective Target Award (or such component's weighting) was in force, unless other written agreements supersede this provision.

9.3 Financial Performance Targets: Financial Performance Targets are approved by the Committee at or near the beginning of each Plan Year. Until otherwise designated by the Committee, EBITDA is the metric utilized to set Financial Performance Targets for the Company, regions, business units and lines of business, as adjusted to eliminate the effects of charges for restructurings, discontinued operations, extraordinary items and other unusual or non-recurring items as well as the cumulative effect of tax or accounting changes. The Company (with the approval of the Committee) reserves the right to change the Financial Performance Target metric from time to time without the necessity of amending the Plan.

9.4 Strategic Performance Objectives:

(a) Participants must have measurable Strategic Performance Objectives set by the Company in writing by March 31 of each Plan Year in respect of that Plan Year, with the Company having the discretion (but not being required) to assign relative weights to each such Strategic Performance Objective. If relative weights are not assigned, then each Strategic Performance Objective will be given an equal weighting.

(b) For new hires or newly-eligible Participants (whether by transfer or promotion), the Strategic Performance Objectives must be set within ninety (90) days of eligibility for the Plan.

(c) Non-submission of Strategic Performance Objectives to the Committee will make the Participant ineligible for an Award.

9.5 Calculation of Awards: Following the conclusion of the Plan Year, assuming the Discretionary Company Thresholds are satisfied, Awards are calculated as follows:

(a) Preliminary Award: Actual financial performance is compared to the Financial Performance Targets, and an Adjustment Factor is then determined as follows:

Achievement Against Financial Performance Target	Adjustment Factor
<= 70%	0%
100%	100%
>=130%	200%

* *The Adjustment Factor for financial performance achievement between 70% and 130% of the financial performance target will be linearly interpolated. For example, achievement of 124.3% of the Financial Performance Target will result in an Adjustment Factor of 181.00%.*

The Adjustment Factor is then multiplied by the dollar amount of the full Target Award. This product is the "Preliminary Award."

(b) Financial Performance Portion: The Preliminary Award is then multiplied by the weighting of the Financial Performance Portion for the Participant. This product becomes part of the Award for the Participant.

(c) Strategic Performance Portion: *First*, the Preliminary Award is multiplied by the weighting of the Strategic Performance Portion for the Participant to determine a base amount attributable to Strategic Performance Objectives (the "Strategic Base Amount"). *Second*, following the end of the Plan Year, the Chief Executive Officer (or where the Participant is the Chief Executive Officer, the Committee) will score that Participant based on that Participant's performance against his or her Strategic Performance Objectives, considered individually (and if so, by taking into account their relative weightings) or by giving a single score for all Strategic Performance Objectives, as the Chief Executive Officer so determines. The Participant's performance against the Strategic Performance Objectives as so considered will be rated using a scorecard with a scale of 1 through 5 that has corresponding percentage grades[1], and will take into account recommendations

[1] The scorecard will be as follows:

* *A composite score of 4.2 (e.g., because four strategic objectives weighted at 20% each received a "4" but a fifth strategic objective also weighted at 20% received a "5") would be linearly interpolated to result in a 130.0% preliminary multiplier.*

from the Participant's direct manager (as applicable). The scorecard will also contain space for commentary regarding the Participant's performance if appropriate (*e.g*., describing special circumstances). The information on the scorecard, taken as a whole, is then used to determine a preliminary multiplier against the Strategic Base Amount, which preliminary multiplier will range from zero to a maximum of 150%. *Third,* once the preliminary multiplier is so determined, the Chief Executive Officer (or where the Participant is the Chief Executive Officer, the Committee) may (but is not required to) then further adjust such preliminary multiplier (but not to be less than zero or more than 150%) after taking into account, among other things, the Participant's performance and positioning relative to his or her peer group, seniority, experience, growth, development and accomplishments in respect of and outside the Strategic Performance Objectives (including, if relevant, in respect of other objectives that became important Company or Participant priorities during the year). The preliminary multiplier, as so further adjusted, then becomes the ultimate multiplier, and the product of this ultimate multiplier and the Strategic Base Amount becomes part of the Award for the Participant.

(d) Sum of Resultant Products; Subject to Overall Cap: The resultant parts in the ultimate sentences of Sections 9.5(b) and 9.5(c) are then added together to arrive at an Award for the Participant (but subject to the other terms contained in the Plan, including Section 9.5(e)), not to exceed the overall cap in Section 7 hereof.

(e) Role of CEO and the Committee. The final Award recommendation will be made by the Chief Executive Officer and approved by the Committee.

(f) Subject to Discretionary Company Thresholds. Notwithstanding the foregoing, if the Discretionary Company Thresholds in Section 5 are not met, no Award (or portion thereof) will be earned or paid under the Plan.

10. SUSPENSION, AMENDMENT OR TERMINATION OF THE PLAN

The Company reserves the right at any time prior to payment of the Awards to review, interpret, alter, suspend, amend, or terminate or discontinue (with or without notice) the Plan (including in respect of a Plan Year already completed if prior to the Payment Date in respect of that Plan Year), including, without limitation, the calculation and method of and eligibility for Award payments, *provided*, *however*, that any alterations or amendments to the Plan require the approval of the Committee, *provided further*, *however*, that any alterations or deviations in respect of the process for determining the Strategic Performance Portion pursuant to Section 9.5(c) hereof do not require the approval of the Committee if such alterations or deviations are otherwise approved by the Chief Executive Officer. The Plan does not constitute a contract of employment (express or implied) and cannot be relied upon as such. The Plan does not alter the at-will employment relationship between the Company and the Participants.

11. ETHICS

The Committee shall have the right to withhold or decrease a Participant's Award on account of a Participant's violation(s) of the Standards of Business Conduct or other Company policies, including, without limitation, the failure to model and enforce the Company's high standards of ethical conduct or to demonstrate a commitment to a discrimination-, retaliation- and harassment-free workplace. Conversely, the Committee may increase incentive compensation (up to the total maximum Award permitted under the Plan) for a Participant who demonstrates extraordinary achievements in these critical areas for the Company.

12. CLAWBACK POLICY

All Awards made under the Plan are subject to the Company's Clawback Policy (which may be amended from time to time by the Company in its sole discretion).

CBRE Group, Inc.
2019 Equity Incentive Plan
Restricted Stock Units
Grant Notice

CBRE Group, Inc. (the "Company"), pursuant to its 2019 Equity Incentive Plan (the "Plan"), hereby grants to the "Participant" identified below an award (the "Award") of that number of Restricted Stock Units set forth below (the "Units"). In general, each Unit is the right to receive one (1) share of the Company's Class A Common Stock (the "Shares") at the time such Unit vests. This Award is subject to all of the terms and conditions set forth herein and in the Restricted Stock Unit Agreement (the "Agreement") and the Plan (collectively, the "Award Documents"), both of which are attached hereto and incorporated herein in their entirety.

Grant Date:

Vesting Commencement Date:

Number of Units Subject to Award: See "Number Available to Accept" field on Merrill Lynch's "award acceptance" page available upon your acceptance of the terms of this Agreement).

Vesting Schedule: Subject to Section 4 of the Agreement, one-fourth (1/4th) of the Units subject to the A shall vest on each anniversary of the Vesting Commencement Date over a period of fc (4) years.

Consideration: No payment is required for the Shares, although payment may be required for the amc of any withholding taxes due as a result of the delivery of the Shares as described in greater detail in the Agreement.

Additional Terms/Acknowledgements: The undersigned Participant acknowledges receipt of the Award Documents and the Plan's Prospectus, and understands and agrees to the terms set forth in the Award Documents. Participant acknowledges that he or she is accepting the Award by electronic means and that such electronic acceptance constitutes Participant's agreement to be bound by all of the terms and conditions of the Award Documents. By accepting the Award, Participant consents to receive any documents related to participation in the Plan and the Award by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company. Participant also acknowledges that this Grant Notice must be returned to the Company (including through electronic means). Participant further acknowledges that as of the Grant Date, the Award Documents set forth the entire understanding between Participant and the Company regarding the acquisition of Units and Shares and supersede all prior oral and written agreements on that subject with the exception of (i) Awards previously granted and delivered to Participant under the Plan, and (ii) the following agreements only, if any:

OTHER AGREEMENTS: ______________________________

____

ATTACHMENTS:

I. Restricted Stock Unit Agreement

II. CBRE Group, Inc. 2019 Equity Incentive Plan

CBRE Group, Inc.
2019 Equity Incentive Plan
Restricted Stock Unit Agreement

Pursuant to the provisions of the Company's 2019 Equity Incentive Plan ("Plan"), the terms of the Grant Notice to which this Restricted Stock Unit Agreement is attached ("Grant Notice") and this Restricted Stock Unit Agreement (the "Agreement"), CBRE Group, Inc. (the "Company") grants you that number of Restricted Stock Units (the "Units") as set forth in the Grant Notice as of the date specified in the Grant Notice ("Grant Date"). Defined terms not explicitly defined in this Agreement or in the Grant Notice but defined in the Plan shall have the same definitions as in the Plan.

The details of your Award are as follows:

1. **The Award.** The Company hereby awards to you the aggregate number of Units specified in your Grant Notice. Each Unit is the right to receive one (1) share of the Company's Class A Common Stock (the "Shares") on the Vesting Date (as defined below). The Units and the Shares are awarded to you in consideration for your continued service to the Company or its Subsidiaries and Affiliates (the "Company Group").

2. **Documentation.** As a condition to the award of the Units and the Shares, you agree to execute the Grant Notice and to deliver the same to the Company (including through electronic means), along with such additional documents as the Committee may require, within the time period prescribed by the Company or else this Award shall be forfeited without consideration. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan and the Award by electronic means or request your consent to participate in the Plan by electronic means. By accepting the Award, you consent to receive such documents by electronic delivery and agree to participate in the Plan through any on-line or electronic system established and maintained by the Company or another third party designated by the Company.

3. **Consideration For The Award.** No cash payment is required for the Units or the Shares, although you may be required to tender payment in cash or other acceptable form of consideration for the amount of any withholding taxes due as a result of delivery of the Shares.

4. **Vesting.** Except as otherwise specified in this Agreement and the Plan, the Units will vest as provided in the Grant Notice (the "Vesting Date"). Any Units which have not vested as of the date of your termination of Continuous Service shall thereupon be forfeited immediately and without any further action by the Company, except as otherwise directed by the Committee; *provided,* that:

(a) If your Continuous Service terminates due to your death or Disability after the Vesting Commencement Date, the following number of unvested Units automatically will become vested:

(i) If such termination occurs within twelve (12) months following the Vesting Commencement Date, the number of unvested Units that will become vested will be

equal to (x) the number of days that have elapsed from the Vesting Commencement Date through the date of your termination of Continuous Service divided by three hundred sixty-five (365), multiplied by (y) the number of Units subject to your Award, rounded down to the nearest whole Unit, and such vesting will occur as of the date of your termination of Continuous Service (and such date will be deemed to be the "Vesting Date" for purposes of such Units); or

(ii) If such termination occurs more than twelve (12) months following the Vesting Commencement Date, the number of unvested Units that will become vested will be equal to all of the unvested Units subject to your Award, and such vesting will occur as of the date of your termination of Continuous Service (and such date will be deemed to be the "Vesting Date" for purposes of such Units).

The Award will immediately terminate following such vesting and the issuance of Shares pursuant to Section 6 below.

(b) If, after the Vesting Commencement Date, your Continuous Service terminates due to your Retirement (as defined below), and (x) after such termination through the applicable Vesting Date you have at all times satisfied certain noncompetition, nonsolicitation and confidentiality conditions imposed by the Company (in its sole discretion) upon or promptly following such termination and (y) you provide the Company with a certification (in a form acceptable to the Company) that you have satisfied all such conditions during such period, the following number of unvested Units will continue to vest as provided in the Grant Notice:

(i) If such termination occurs on or following December 31 of the calendar year in which the Vesting Commencement Date occurs, the number of unvested Units that will continue to vest as provided in the Grant Notice will be equal to the number of unvested Units subject to your Award; provided, that, if you die following the date of such termination, all of the then unvested Units subject to your Award will automatically become vested on the date of your death; or

(ii) If such termination occurs prior to December 31 of the calendar year in which the Vesting Commencement Date occurs, any Units which have not vested as of the date of such termination shall thereupon be forfeited immediately and without any further action by the Company, except as otherwise directed by the Committee.

(c) For purposes of the Award, "Retirement" means your voluntary termination following:

(i) completion of at least ten (10) years of Continuous Service, and

(ii) (A) for U.S. Participants, your attainment of age sixty-two (62), or (B) for non-U.S. Participants, your attainment of age sixty-two (62) or such earlier age at which you are required to retire from Continuous Service under applicable law or an applicable retirement plan or policy. If you are eligible to qualify for Retirement under this subsection, you must provide evidence to that effect to the Company (in a form acceptable to the Company) on or before your termination date.

With respect to the vesting of this Award, the provisions of this Section 4 shall apply and supersede the terms of any other plan, program or arrangement maintained by the Company or the Company Group or any other agreement between you and the Company or the Company Group.

5. Number of Shares and Purchase Price. The number of Shares subject to your Award may be adjusted from time to time pursuant to the provisions of Section 12 of the Plan.

6. Issuance and Certificates; Code Section 409A. The Company will deliver to you a number of Shares equal to the number of vested Units subject to your Award, including any additional Units received pursuant to Section 5 above that relate to such vested Units, as soon as reasonably practicable after the applicable Vesting Date, but in no event later than December 31 of the calendar year in which the applicable Vesting Date occurs. However, if a scheduled delivery date falls on a date that is not a business day, such delivery date shall instead fall on the next business day. Notwithstanding the foregoing, in the event that (i) you are subject to the Company's policy permitting officers and directors to sell Shares only during certain "window periods," as in effect from time to time (the "Policy"), or you are otherwise prohibited from selling Shares in the open market, and any Shares subject to your Award are scheduled to be delivered on a day (the "Original Distribution Date") that does not occur during an open "window period" applicable to you or a day on which you are permitted to sell Shares pursuant to a written plan that meets the requirements of Rule 10b5-1 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as determined by the Company in accordance with the Policy, or does not occur on a date when you are otherwise permitted to sell Shares in the open market, and (ii) the Company elects not to satisfy its tax withholding obligations by withholding Shares from your distribution, then such Shares shall not be delivered on such Original Distribution Date and shall instead be delivered on the first business day of the next occurring open "window period" applicable to you pursuant to the Policy (regardless of whether you are still providing Continuous Service at such time) or the next business day when you are not prohibited from selling Shares in the open market, but in no event later than December 31 of the calendar year in which the applicable Vesting Date occurs.

There are no certificates evidencing the Units. Certificates evidencing the Shares to be delivered pursuant to this Agreement may be issued by the Company and registered in your name.

7. Transfer Restrictions. The Units are non-transferable. Shares that are received under your Award are subject to the transfer restrictions set forth in the Plan and any transfer restrictions that may be described in the Company's bylaws or charter or insider trading policies in effect at the time of the contemplated transfer.

8. No Rights as a Stockholder. A Unit (i) does not represent an equity interest in the Company, and (ii) carries no voting, dividend or dividend equivalent rights. You will not have an equity interest in the Company or any of such shareholder rights, unless and until the Shares are delivered to you in accordance with this Agreement.

9. Securities Laws. Upon the delivery of the Shares, you will make or enter into such written representations, warranties and agreements as the Committee may reasonably request in

order to comply with applicable securities laws or with this Agreement. Notwithstanding any other provision of the Plan or this Agreement to the contrary, unless there is an available exemption from such registration, qualification or other legal requirements, Units may not be converted into Shares prior to the completion of any registration or qualification of the Units or the Shares that is required to comply with applicable state and federal securities or any ruling or regulation of any governmental body or national securities exchange or compliance with any other applicable federal, state or foreign law that the Committee shall in its sole discretion determine in good faith to be necessary or advisable.

10. Legends on Certificates. The certificates representing the Shares delivered to you as contemplated by this Agreement shall be subject to such stop transfer orders and other restrictions as the Committee may deem advisable under the Plan or the rules, regulations, and other requirements of the Securities and Exchange Commission, any stock exchange upon which such Shares are listed, and any applicable Federal or state laws, and the Committee may cause a legend or legends to be put on any such certificates to make appropriate reference to such restrictions.

11. Award Not A Service Contract and No Entitlement to Future Grants. Your Award is not an employment or service contract, and nothing in your Award shall be deemed to create in any way whatsoever any obligation or right to continued employment or service with or to the Company Group. In addition, nothing in your Award shall obligate the Company, its stockholders, its Board or employees to continue any relationship that you might have as a member of the Board, as an employee or as any other type of service provider for the Company. You acknowledge and agree that this Award was granted in the Committee's discretion and that neither the grant of this Award nor the issuance of any Shares pursuant to this Award creates any entitlement to or expectation of any future grant of Units or any future benefits in lieu of Units.

12. Tax Consequences. You are responsible for any taxes due in connection with your receipt of this Award, including the vesting of such Award and delivery of Shares, and for declaring the Award to the relevant tax authority to which you are subject, if required.

13. Withholding Obligations.

(a) At the time your Award is made, or at any time thereafter as requested by the Company, you hereby authorize the Company to satisfy its withholding obligations, if any, from payroll and any other amounts payable to you (or, in the Company's discretion, from Shares that become deliverable upon vesting under this Award), and otherwise agree to make adequate provision for any sums required to satisfy the federal, state, local and foreign tax withholding obligations of the Company, if any, which arise in connection with the grant of or vesting of your Award or the delivery of Shares under the Award. Notwithstanding the foregoing, if you are a Section 16 officer of the Company under the Exchange Act, the Company will satisfy its withholding obligations, if any, by withholding a number of Shares that become deliverable upon vesting under this Award.

(b) Unless the tax withholding obligations of the Company, if any, are satisfied, the Company shall have no obligation to issue a certificate for such Shares or release such Shares.

14. **Notices.** Any notices provided for in your Award or the Plan shall be given in writing and shall be delivered by hand or sent by overnight courier, certified or registered mail, return receipt requested, postage prepaid, or electronic mail and shall be deemed effectively given upon receipt or, in the case of notices delivered by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided to the Company.

15. **Miscellaneous.**

(a) You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Committee to carry out the purposes or intent of this Award.

(b) You acknowledge and agree that you have reviewed your Award in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your Award and fully understand all provisions of your Award.

(c) The waiver by either party of compliance with any provision of the Award by the other party shall not operate or be construed as a waiver of any other provision of the Award, or of any subsequent breach by such party of a provision of the Award.

16. **Governing Plan Document.** Your Award is subject to all interpretations, amendments, rules and regulations that may from time to time be promulgated and adopted pursuant to the Plan. In the event of any conflict between the provisions of the Plan and any other document, the provisions of the Plan shall control.

17. **Data Privacy Notification.** ***You are hereby notified of the collection, use and transfer, in electronic or other form, of your personal data as described in this Agreement, any other Award materials and the Company's Employee Personal Information Privacy Notice or Employee Privacy Notice and Consent Form, as applicable (the "Privacy Notice"), which is viewable at https://intranet.cbre.com/Sites/EMEA-DataPrivacy/en-GB/Documents/MASTER_Employee_Privacy_notice.pdf. Such personal data may be collected, used and transferred by and among, as applicable, the Company, the Company Group and any third parties assisting (presently or in the future) with the implementation, administration and management of the Plan, such as Merrill Lynch, Pierce, Fenner &Smith Incorporated ("Merrill Lynch"), or its successor, for the exclusive purpose of implementing, administering and managing your participation in the Plan. The Company's basis for the processing and transfer of the data is described in the Company's Privacy Notice. Where required under applicable law, personal data also may be disclosed to certain securities or other regulatory authorities where the Company's shares are listed or traded or regulatory filings are made, or to certain tax authorities for compliance with the Company's, the Employer's and/or your tax obligations. You understand that the collection, use and transfer of your personal data is mandatory for compliance with applicable law and necessary for the***

performance of the Plan and that your refusal to provide such personal data would make it impossible for the Company to perform its contractual obligations and may affect your ability to participate in the Plan.

18. Appendices. Notwithstanding any provisions in this Agreement, if you reside in a country outside the United States or are otherwise subject to the laws of a country other than the United States, the Award shall be subject to the additional terms and conditions set forth in Appendix A to this Agreement and to any special terms and provisions (if any) as set forth in Appendix B for your country. Moreover, if you relocate outside the U.S., the special terms and conditions in Appendix A (applicable to all non-U.S. countries) and in Appendix B (applicable to your specific country) will apply to you, to the extent the Company determines that the application of such terms and conditions is necessary or advisable for legal or administrative reasons. Appendix A and Appendix B constitute part of this Agreement.

19. Imposition of Other Requirements. The Company reserves the right to impose other requirements on your participation in the Plan, on the Award and on any Shares acquired under the Plan, to the extent the Company determines it is necessary or advisable for legal or administrative reasons, and to require you to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

Appendix A

TO

Restricted Stock Unit Agreement

Provisions Applicable to Non-U.S. Countries

This Appendix A includes additional terms and conditions that govern the Award granted to you under the Plan if you are a Participant and reside and/or work in a country outside the United States of America (or later relocate to such a country). Capitalized terms used but not defined herein shall have the meanings ascribed to them in the Plan and/or the Agreement to which this Appendix A is attached.

***

Nature of Grant. In accepting the grant of the Award, you acknowledge, understand and agree that:

a. the Plan is established voluntarily by the Company, it is discretionary in nature, and may be amended, suspended or terminated by the Company at any time, to the extent permitted by the Plan;

b. the grant of the Award is exceptional, voluntary and occasional;

c. all decisions with respect to future Units or other grants, if any, will be at the sole discretion of the Company;

d. you are voluntarily participating in the Plan;

e. the Award and any Shares subject to the Award, and the income and value of same, are not intended to replace any pension rights or compensation;

f. unless otherwise expressly agreed in a writing by you with the Company, the Award and the Shares subject to the Award, and the income and value of same, are not granted as consideration for, or in connection with, the service you may provide as a director of a Subsidiary or Affiliate;

g. the Award and any Shares subject to the Award, and the income and value of same, are not part of normal or expected compensation for any purpose, including, without limitation, calculating any severance, resignation, termination, redundancy, dismissal, end-of-service payments, holiday pay, bonuses, long-service awards, pension or retirement or welfare benefits or similar mandatory payments;

h. the future value of the Shares underlying the Award is unknown, indeterminable, and cannot be predicted with certainty;

i. no claim or entitlement to compensation shall arise from forfeiture of the Award resulting from the termination of your Continuous Service as provided for in the Plan or in the Agreement;

j. for purposes of the Award, and unless otherwise expressly provided in the Plan, the Agreement or determined by the Company, your Continuous Service will be considered terminated as of the date you are no longer actively providing services to the Company or any Parent, Subsidiary or Affiliate (regardless of the reason for such termination and whether or not later found to be invalid or in breach of employment laws in the jurisdiction where you are employed or the terms of your employment agreement, if any), and unless otherwise expressly provided in the Plan, the Agreement or determined by the Company, your right to vest in the Award under the Plan, if any, will terminate as of such date and will not be extended by any notice period (*e.g.*, your period of service would not include any contractual notice period or any period of "garden leave" or similar period mandated under employment laws in the jurisdiction where you are employed or the terms of your employment agreement, if any); the Committee shall have the exclusive discretion to determine when you are no longer actively providing services for purposes of your Award (including whether you may still be considered to be providing services while on a leave of absence);

k. unless otherwise provided in the Plan or by the Company in its discretion, the Award and the benefits evidenced by the Agreement do not create any entitlement to have the Award or any such benefits transferred to, or assumed by, another company nor to be exchanged, cashed out or substituted for, in connection with any corporate transaction affecting the shares of the Company; and

l. neither the Company nor any Parent, Subsidiary or Affiliate shall be liable for any foreign exchange rate fluctuation between your local currency and the United States Dollar that may affect the value of the Award or of any amounts due to you pursuant to the settlement of the Award or the subsequent sale of any Shares acquired upon settlement.

Responsibility for Taxes. The following provisions supplement Section 13 of the Agreement:

You acknowledge that, regardless of any action taken by the Company or, if different, your employer (the "Employer"), the ultimate liability for all income tax, social insurance contributions, payroll tax, fringe benefits tax, payment on account or other tax-related items related to your participation in the Plan and legally applicable to you ("Tax-Related Items") is and remains your responsibility and may exceed the amount, if any, actually withheld by the Company or the Employer. You further acknowledge that the Company and the Employer (a) make no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Award, and (b) do not commit to and are under no obligation to structure the terms of the grant or any aspect of the Award to reduce or eliminate your liability for Tax-Related Items or achieve any particular tax result. Further, if you are subject to Tax-Related Items in more than one jurisdiction, you acknowledge that the Company and/or the Employer (or former employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

Grant Date:

Prior to any applicable taxable or tax withholding event, you authorize the Company and/or the Employer, or their respective agents, at their discretion, to satisfy the obligations with regard to all Tax-Related Items by any of the methods referred to in Section 13(a) of the Agreement. In addition, you authorize withholding from proceeds of the sale of Shares acquired upon settlement of the Award either through a voluntary sale, through a mandatory sale, through a "withhold to cover" program or any other scheme or program, in each case, arranged by the Company (on your behalf pursuant to this authorization without further consent by you).

The Company may withhold Shares otherwise deliverable under the Award for Tax-Related Items solely by considering applicable minimum statutory withholding amounts. If the obligation for Tax-Related Items is satisfied by withholding in Shares, for tax purposes, you are deemed to have been issued the full number of Shares subject to the vested Award, notwithstanding that a number of the Shares are held back solely for the purpose of paying the Tax-Related Items.

Finally, if requested by the Company, you agree to pay to the Company or the Employer any amount of Tax-Related Items that the Company or the Employer may be required to withhold or account for as a result of your participation in the Plan that cannot be satisfied by the means previously described.

Language. You acknowledge that you are proficient in the English language and understand, or have consulted with an advisor who is proficient in the English language so as to enable you to understand, the provisions of the Agreement and the Plan. If you have received the Agreement or any other document related to the Plan translated into a language other than English, and if the meaning of the translated version is different than the English version, the English version will control.

<u>APPENDIX B</u>

TO

RESTRICTED STOCK UNIT AGREEMENT

COUNTRY-SPECIFIC PROVISIONS

This <u>Appendix B</u> includes additional terms and conditions that govern the Award granted to you under the Plan if you are a Participant and reside and/or work in one of the countries listed herein. If you are a citizen or resident of a country other than the one in which you currently are working and/or residing (or if you are considered as such for local law purposes), or if you transfer or relocate employment or residence to another country after the Grant Date, the Company, in its discretion, will determine the extent to which the terms and conditions herein will be applicable to you.

This <u>Appendix B</u> also includes information regarding securities and other laws of which you should be aware with respect to your participation in the Plan. The information is based on laws in effect in the respective countries as of February 2019. Such laws are often complex and change frequently. As a result, you should not rely on the information noted herein as the only source of information relating to the consequences of your participation in the Plan because the information may be out of date by the time you vest in the Award or sell the Shares acquired under the Plan. In addition, the information noted herein is general in nature and may not apply to your particular situation, and the Company is not in a position to assure you of any particular result. Accordingly, you should seek appropriate professional advice as to how the applicable laws may apply to your situation. That is your responsibility, and not the Company's.

If you are a citizen or resident of a country other than the one in which you currently are working and/or residing (or if you are considered as such for local law purposes), or if you transfer employment or residence to another country after the Grant Date, the information noted herein may not be applicable to you in the same manner.

Capitalized terms used but not defined herein shall have the meanings ascribed to them in the Plan, the Agreement and/or the <u>Appendix A</u> which this <u>Appendix B</u> follows.

***

<u>AUSTRALIA</u>

<u>Australian Offer Document</u>. This Award is intended to comply with the provisions of the Corporations Act 2001, ASIC Regulatory Guide 49 and ASIC Class Order CO 14/1000. Additional details are set forth in the Australian Offer Document, which you acknowledge has been provided to you with this Agreement.

<u>Tax Information</u>. Subdivision 83A-C of the Income Tax Assessment Act, 1997, applies to Awards granted under the Plan, such that the Award is intended to be subject to deferred taxation.

AUSTRIA

No country-specific provisions.

BELGIUM

No country-specific provisions.

CANADA

Form of Settlement. Notwithstanding any discretion contained in Section 10(f) of the Plan or anything to the contrary in the Agreement, the Award shall be settled in Shares only.

Securities Law Notice. You are permitted to sell Shares acquired upon the vesting and settlement of the Award through the designated broker appointed under the Plan, if any, provided the resale of Shares acquired under the Plan takes place outside of Canada through the facilities of a stock exchange on which the Shares are listed. The Shares are currently listed on the New York Stock Exchange ("NYSE").

The following provisions apply if you are a resident of Quebec:

Language Consent. The parties acknowledge that it is their express wish that the Agreement, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English.

Les parties reconnaissent avoir exigé la rédaction en anglais de la Convention, ainsi que de tous documents exécutés, avis donnés et procédures judiciaires intentées, directement ou indirectement, relativement à ou suite à la présente convention.

Authorization to Release and Transfer Necessary Personal Information. The following provision supplements Section 17 of the Agreement:

You hereby authorize the Company (including any Parent, Subsidiary or Affiliate) and the Company's representatives to discuss with and obtain all relevant information from all personnel, professional or non-professional, involved in the administration and operation of the Plan. You further authorize the Company, the Employer and any Parent, Subsidiary or Affiliate and the administrator of the Plan (including Merrill Lynch or any other stock plan service provider) to disclose and discuss the Plan with their advisors. You further authorize the Company, the Employer and any Parent, Subsidiary or Affiliate to record such information and to keep such information in your employee file.

CHINA

The following provisions apply only to Participants who are PRC nationals, unless otherwise determined by the Company or required by the PRC State Administration of Foreign Exchange ("SAFE").

Mandatory Sale Restriction. To facilitate compliance with local regulatory requirements, you agree to the sale of any Shares to be issued to you under the Plan, including by the Company on your behalf if the Company so determines. The sale will occur, at the Company's election: (i) immediately upon vesting, (ii) following your termination of Continuous Service, or (iii) within any other time frame as the Company determines to be necessary to comply with local regulatory requirements. You further agree that the Company is authorized to instruct its designated broker to assist with the mandatory sale of such shares (on your behalf pursuant to this authorization) and you expressly authorize the Company's designated broker to complete the sale of such shares. You acknowledge that the designated broker is under no obligation to arrange for the sale of the Shares at any particular price. Upon the sale of the Shares, the Company agrees to pay you the cash proceeds from the sale, less any brokerage fees or commissions and subject to any obligation to satisfy Tax-Related Items. You agree that the payment of the cash proceeds will be subject to the repatriation requirements described below.

You further agree that any Shares to be issued to you shall be deposited directly into an account with the designated broker. The deposited Shares shall not be transferable (either electronically or in certificate form) from the brokerage account. This limitation shall apply both to transfers to different accounts with the same broker and to transfers to other brokerage firms. The limitation shall apply to all Shares issued to you under the Plan, whether or not you continue to be employed by the Company Group. If you sell Shares that you acquire under the Plan, the repatriation requirements described below shall apply.

Exchange Control Restrictions. By participating in the Plan, you understand and agree that, if you are subject to exchange control laws in China, you will be required to immediately repatriate to China the proceeds from the sale of any Shares acquired under the Plan. You further understand that such repatriation of the proceeds may need to be effected through a special exchange control account established by the Company, the Employer or a Subsidiary or Affiliate, and you hereby consent and agree that the proceeds from the sale of Shares acquired under the Plan may be transferred to such account by the Company (or its designated broker) on your behalf prior to being delivered to you. You also agree to sign any agreements, forms and/or consents that may be reasonably requested by the Company (or its designated broker) to effectuate such transfers.

CZECH REPUBLIC

No country-specific provisions.

FRANCE

Language Consent. By accepting the grant, you confirm having read and understood the Plan and Agreement which were provided in the English language. You accept the terms of those documents accordingly.

En acceptant l'attribution, vous confirmez avoir lu et compris le Plan et l'Accord, qui ont été fournis en langue anglaise. Vous acceptez les termes de ces documents en connaissance de cause.

GERMANY

No country-specific provisions.

HONG KONG

Sale Restriction. Shares received at vesting are accepted as a personal investment. In the event that the Award vests and Shares are issued to you (or your heirs) within six months of the Grant Date, you (or your heirs) agree that the Shares will not be offered to the public or otherwise disposed of prior to the six-month anniversary of the Grant Date.

Securities Law Notice. *WARNING:* The contents of this document have not been reviewed by any regulatory authority in Hong Kong. You should exercise caution in relation to the offer. If you are in any doubt about any of the contents of this document, you should obtain independent professional advice. Neither the grant of the Award nor the issuance of Shares upon vesting and settlement of the Award constitutes a public offering of securities under Hong Kong law and are available only to Participants. The Agreement, the Plan and other incidental communication materials distributed in connection with the Award (i) have not been prepared in accordance with and are not intended to constitute a "prospectus" for a public offering of securities under the applicable securities legislation in Hong Kong and (ii) are intended only for the personal use of each Participant and may not be distributed to any other person.

INDIA

No country-specific provisions.

IRELAND

No country-specific provisions.

ITALY

Acknowledgement of Terms. You acknowledge that by accepting this Award, you have been given access to the Plan document, have reviewed the Plan and this Agreement in their entirety, and fully understand and accept all provisions of the Plan and this Agreement. Further you specifically and expressly approve the following sections of this Agreement: (i) Section 4 – Vesting; (ii) Section 6 – Issuance and Certificates; (iii) Section 11 – Award Not a Service Contract and No Entitlement to Future Grants; (iv) Section 13 – Withholding Obligations

(including the Responsibility for Taxes section in Appendix A which supplements Section 13); (v) Section 16 – Governing Plan Document; and (vi) the Nature of Grant section in Appendix A.

JAPAN

No country-specific provisions.

NETHERLANDS

No country-specific provisions.

NEW ZEALAND

Securities Law Notice.

Warning

This is an offer of rights to receive Shares underlying the Award. Shares give you a stake in the ownership of the Company. Shares are quoted on the NYSE. This means you may be able to sell them on the NYSE if there are interested buyers. You may get less than you invested. The price will depend on the demand for the Shares.

If the Company runs into financial difficulties and is wound up, you will be paid only after all creditors have been paid. You may lose some or all of your investment.

New Zealand law normally requires people who offer financial products to give information to investors before they invest. This information is designed to help investors to make an informed decision. The usual rules do not apply to this offer because it is made under an employee share scheme. As a result, you may not be given all the information usually required. You also will have fewer other legal protections for this investment.

In compliance with applicable New Zealand securities laws, you are entitled to receive, in electronic or other form and free of cost, copies of the Company's latest annual report, relevant financial statements and the auditor's report on said financial statements (if any).

You should ask questions, read all documents carefully, and seek independent financial advice before committing yourself.

NORWAY

No country-specific provisions.

POLAND

No country-specific provisions.

Portugal

Language Consent. You hereby expressly declare that you have full knowledge of the English language and have read, understood and fully accepted and agreed with the terms and conditions established in the Plan and the Agreement.

Conhecimento da Lingua. *Você expressamente declara ter pleno conhecimento do idioma inglês e ter lido, entendido e totalmente aceito e concordou com os termos e condições estabelecidas no plano e no acordo.*

Puerto Rico

No country-specific provisions.

Romania

No country-specific provisions.

Russia

U.S. Transaction and Sale Restrictions. You understand that your acceptance of the Award results in a contract between you and the Company that is completed in the United States and that the Plan is governed by the laws of the State of Delaware, without regard to its conflict of law provisions. Further, any Shares to be issued to you upon vesting and settlement of the Award shall be delivered to you through a bank or brokerage account in the United States. You are not permitted to sell or otherwise transfer the Shares directly to individuals or legal entities in Russia, nor are you permitted to bring any certificates representing the Shares into Russia.

Securities Law Notice. This Agreement, the Plan and all other materials you may receive regarding participation in the Plan do not constitute advertising or an offering of securities in Russia. Absent any requirement under local law, the issuance of securities pursuant to the Plan has not and will not be registered in Russia; hence, the securities described in any Plan-related documents may not be used for offering or public circulation in Russia.

Singapore

Sale Restriction. You agree that any Shares issued to you upon vesting and settlement of the Award will not be offered for sale or sold in Singapore prior to the six-month anniversary of the Grant Date, unless such sale or offer is made pursuant to the exemptions under Part XIII Division (1) Subdivision (4) (other than section 280) of the Singapore Securities and Futures Act (Chapter 289, 2006 Ed.) ("SFA") or pursuant to, and in accordance with the conditions of, any other applicable provision(s) of the SFA.

Securities Law Notice. The Award is being made to you in reliance on the "Qualifying Person" exemption under section 273(1)(f) of the SFA and is not being made with the view to the underlying Shares being subsequently offered for sale to any other party. The Plan has not been nor will it be lodged or registered as a prospectus with the Monetary Authority of Singapore.

Grant Date:

Chief Executive Officer and Director Notification Obligation. If you are the Chief Executive Officer ("CEO") or a director (including an alternate, substitute, or shadow director) of the Company's Singapore Subsidiary or Affiliate, you are subject to certain notification requirements under the Singapore Companies Act. Among these requirements is an obligation to notify the Company's Singapore Subsidiary or Affiliate in writing when you receive an interest (*e.g.*, an Award or Shares) in the Company or any Parent, Subsidiary or Affiliate. In addition, you must notify the Company's Singapore Subsidiary or Affiliate when you sell Shares or shares of any Parent, Subsidiary or Affiliate (including when you sell Shares issued upon vesting and settlement of the Award). These notifications must be made within a prescribed period of time from acquiring or disposing of any interest in the Company or any Parent, Subsidiary or Affiliate. In addition, a notification of your interests in the Company or any Parent, Subsidiary or Affiliate must be made within a prescribed period of time from becoming the CEO or a director.

SLOVAKIA

No country-specific provisions.

SOUTH KOREA

No country-specific provisions.

SPAIN

Labor Law Acknowledgment. The following provision supplements the Nature of Grant section in Appendix A:

By accepting the Award, you acknowledge that you understand and agree that you consent to participation in the Plan and that you have received a copy of the Plan.

You further understand that the Company has unilaterally, gratuitously and in its sole discretion decided to grant Awards under the Plan to employees of the Company or any Parent, Subsidiary or Affiliate throughout the world. The decision to grant the Awards is a limited decision that is entered into upon the express assumption and condition that any grant will not economically or otherwise bind the Company or any Parent, Subsidiary or Affiliate on an ongoing basis other than as set forth in this Agreement. Consequently, you understand that any grant is given on the assumption and condition that it shall not become a part of any employment contract (either with the Company or any Parent, Subsidiary or Affiliate) and shall not be considered a mandatory benefit, salary for any purpose (including severance compensation) or any other right whatsoever. Further, you understand and freely accept that there is no guarantee that any benefit shall arise from any gratuitous and discretionary grant since the future value of the Shares is unknown and unpredictable. Additionally, you understand that the vesting and settlement of the Award is expressly conditioned on your continued and active rendering of service to the Employer such that if your Continuous Service terminates for any reason other than as expressly provided in Section 4 of the Agreement, your Award will cease vesting immediately effective as of the date of

termination of your Continuous Service. This will be the case, for example, even if (1) you are considered to be unfairly dismissed without good cause (*i.e.*, subject to a "*despido improcedente*"); (2) you are dismissed for disciplinary or objective reasons or due to a collective dismissal; (3) you terminate Continuous Service due to a change of work location, duties or any other employment or contractual condition; (4) you terminate Continuous Service due to the Company's or any Parent's, Subsidiary's or Affiliate's unilateral breach of contract; or (5) your Continuous Service terminates for any other reason whatsoever, in each case other than as expressly provided in Section 4 of the Agreement. Consequently, upon termination of your Continuous Service for any of the above reasons, you will automatically lose any rights to Awards granted to you that were unvested on the date of termination of your Continuous Service, as described in the Agreement.
Finally, you understand that this grant would not be made to you but for the assumptions and conditions referred to herein; thus, you acknowledge and freely accept that should any or all of the assumptions be mistaken or should any of the conditions not be met for any reason, then any grant of an Award shall be null and void.

Securities Law Notice. No "offer of securities to the public," as defined under Spanish law, has taken place or will take place in the Spanish territory in connection with the offer of the Award. The Agreement has not been nor will it be registered with the *Comisión Nacional del Mercado de Valores*, and does not constitute a public offering prospectus.

SWEDEN

No country-specific provisions.

SWITZERLAND

Securities Law Notice. The Award is considered a private offering in Switzerland and is therefore not subject to securities registration in Switzerland. Neither this document nor any other materials relating to the Award (a) constitutes a prospectus as such term is understood pursuant to article 652a of the Swiss Code of Obligations, (b) may be publicly distributed or otherwise made publicly available in Switzerland or (c) has been or will be filed with, approved by or supervised by any Swiss regulatory authority (*e.g.*, the Swiss Financial Market Supervisory Authority).

TAIWAN

Securities Law Notice. The Award and the Shares to be issued pursuant to the Plan are available only for Participants. The Award is not a public offer of securities by a Taiwanese company.

UNITED KINGDOM

Tax Acknowledgment. The following provisions supplement Section 13 of the Agreement as further supplemented by the Responsibility for Taxes section in Appendix A:

Without limitation to Section 13 of the Agreement and the Responsibility for Taxes section in Appendix A, you agree that you are liable for all Tax-Related Items and hereby covenant to pay all such Tax-Related Items as and when requested by the Company or the Employer or by Her Majesty's Revenue and Customs ("HMRC") (or any other tax or other relevant authority). You also agree to indemnify and keep indemnified the Company and the Employer against any taxes or other amounts that they are required to pay or withhold or have paid or will pay to HMRC (or any other tax or other relevant authority) on your behalf.

Notwithstanding the foregoing, if you are a director or an executive officer (as within the meaning of Section 13(k) of the Exchange Act), the terms of the immediately foregoing provision will not apply. In such case, if the amount of any income tax due is not collected from or paid by you within ninety (90) days of the end of the U.K. tax year (April 6 - April 5) in which an event giving rise to the indemnification described above occurs, the amount of any uncollected income tax may constitute a benefit to you on which additional income tax and national insurance contributions ("NICs") may be payable. You understand and agree that you will be responsible for reporting and paying any income tax due on this additional benefit directly to HMRC under the self-assessment regime and for reimbursing the Company or the Employer (as applicable) for the value of any employee NICs due on this additional benefit, which the Company or the Employer may recover from you by any of the means referred to in the Plan or the Agreement.

Grant Date:

CBRE Group, Inc.
2019 Equity Incentive Plan
Restricted Stock Units
Grant Notice

CBRE Group, Inc. (the "Company"), pursuant to its 2019 Equity Incentive Plan (the "Plan"), hereby grants to the "Participant" identified below an award (the "Award") of that number of Restricted Stock Units set forth below (the "Units"). In general, each Unit is the right to receive one (1) share of the Company's Class A Common Stock (the "Shares") at the time such Unit vests. This Award is subject to all of the terms and conditions set forth herein and in the Restricted Stock Unit Agreement (the "Agreement") and the Plan (collectively, the "Award Documents"), both of which are attached hereto and incorporated herein in their entirety.

Grant Date:

Vesting Commencement Date:

Number of Units Subject to Award: See "Number Available to Accept" field on Merrill Lynch's "award acceptance" page available upon your acceptance of the terms of this Agreement).

Vesting Schedule: Subject to Section 4 of the Agreement, one-fourth (1/4th) of the Units subject to the A shall vest on each anniversary of the Vesting Commencement Date over a period of fo (4) years.

Consideration: No payment is required for the Shares, although payment may be required for the amo of any withholding taxes due as a result of the delivery of the Shares as described in greater detail in the Agreement.

Additional Terms/Acknowledgements: The undersigned Participant acknowledges receipt of the Award Documents and the Plan's Prospectus, and understands and agrees to the terms set forth in the Award Documents. Participant acknowledges that he or she is accepting the Award by electronic means and that such electronic acceptance constitutes Participant's agreement to be bound by all of the terms and conditions of the Award Documents. By accepting the Award, Participant consents to receive any documents related to participation in the Plan and the Award by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company. Participant also acknowledges that this Grant Notice must be returned to the Company (including through electronic means). Participant further acknowledges that as of the Grant Date, the Award Documents set forth the entire understanding between Participant and the Company regarding the acquisition of Units and Shares and supersede all prior oral and written agreements on that subject with the exception of (i) Awards previously granted and delivered to Participant under the Plan, and (ii) the following agreements only, if any:

Other Agreements: ______________________________

____

Attachments:

I. Restricted Stock Unit Agreement

II. CBRE Group, Inc. 2019 Equity Incentive Plan

CBRE Group, Inc.
2019 Equity Incentive Plan
Restricted Stock Unit Agreement

Pursuant to the provisions of the Company's 2019 Equity Incentive Plan ("Plan"), the terms of the Grant Notice to which this Restricted Stock Unit Agreement is attached ("Grant Notice") and this Restricted Stock Unit Agreement (the "Agreement"), CBRE Group, Inc. (the "Company") grants you that number of Restricted Stock Units (the "Units") as set forth in the Grant Notice as of the date specified in the Grant Notice ("Grant Date"). Defined terms not explicitly defined in this Agreement or in the Grant Notice but defined in the Plan shall have the same definitions as in the Plan.

The details of your Award are as follows:

1. The Award. The Company hereby awards to you the aggregate number of Units specified in your Grant Notice. Each Unit is the right to receive one (1) share of the Company's Class A Common Stock (the "Shares") on the Vesting Date (as defined below). The Units and the Shares are awarded to you in consideration for your continued service to the Company or its Subsidiaries and Affiliates (the "Company Group").

2. Documentation. As a condition to the award of the Units and the Shares, you agree to execute the Grant Notice and to deliver the same to the Company (including through electronic means), along with such additional documents as the Committee may require, within the time period prescribed by the Company or else this Award shall be forfeited without consideration. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan and the Award by electronic means or request your consent to participate in the Plan by electronic means. By accepting the Award, you consent to receive such documents by electronic delivery and agree to participate in the Plan through any on-line or electronic system established and maintained by the Company or another third party designated by the Company.

3. Consideration For The Award. No cash payment is required for the Units or the Shares, although you may be required to tender payment in cash or other acceptable form of consideration for the amount of any withholding taxes due as a result of delivery of the Shares.

4. Vesting. Except as otherwise specified in this Agreement and the Plan, the Units will vest as provided in the Grant Notice (the "Vesting Date"). Any Units which have not vested as of the date of your termination of Continuous Service shall thereupon be forfeited immediately and without any further action by the Company, except as otherwise directed by the Committee; *provided,* that:

(a) If your Continuous Service terminates due to your death or Disability after the Vesting Commencement Date, the following number of unvested Units automatically will become vested:

(i) If such termination occurs within twelve (12) months following the Vesting Commencement Date, the number of unvested Units that will become vested will be

equal to (x) the number of days that have elapsed from the Vesting Commencement Date through the date of your termination of Continuous Service divided by three hundred sixty-five (365), multiplied by (y) the number of Units subject to your Award, rounded down to the nearest whole Unit, and such vesting will occur as of the date of your termination of Continuous Service (and such date will be deemed to be the "Vesting Date" for purposes of such Units); or

(ii) If such termination occurs more than twelve (12) months following the Vesting Commencement Date, the number of unvested Units that will become vested will be equal to all of the unvested Units subject to your Award, and such vesting will occur as of the date of your termination of Continuous Service (and such date will be deemed to be the "Vesting Date" for purposes of such Units).

The Award will immediately terminate following such vesting and the issuance of Shares pursuant to Section 6 below.

(b) If, after the Vesting Commencement Date, your Continuous Service terminates due to your Retirement (as defined below), and (x) after such termination through the applicable Vesting Date you have at all times satisfied certain noncompetition, nonsolicitation and confidentiality conditions imposed by the Company (in its sole discretion) upon or promptly following such termination and (y) you provide the Company with a certification (in a form acceptable to the Company) that you have satisfied all such conditions during such period, the following number of unvested Units will continue to vest as provided in the Grant Notice:

(i) If such termination occurs on or following December 31 of the calendar year in which the Vesting Commencement Date occurs, the number of unvested Units that will continue to vest as provided in the Grant Notice will be equal to the number of unvested Units subject to your Award; provided, that, if you die following the date of such termination, all of the then unvested Units subject to your Award will automatically become vested on the date of your death; or

(ii) If such termination occurs prior to December 31 of the calendar year in which the Vesting Commencement Date occurs, any Units which have not vested as of the date of such termination shall thereupon be forfeited immediately and without any further action by the Company, except as otherwise directed by the Committee.

(c) For purposes of this Award, "Retirement" means your voluntary termination following your attainment of age fifty-eight (58). If you are eligible to qualify for Retirement under this subsection, you must provide evidence to that effect to the Company (in a form acceptable to the Company) on or before your termination date.

With respect to the vesting of this Award, the provisions of this Section 4 shall apply and supersede the terms of any other plan, program or arrangement maintained by the Company or the Company Group or any other agreement between you and the Company or the Company Group.

5. **Number of Shares and Purchase Price.** The number of Shares subject to your Award may be adjusted from time to time pursuant to the provisions of Section 12 of the Plan.

6. Issuance and Certificates; Code Section 409A. The Company will deliver to you a number of Shares equal to the number of vested Units subject to your Award, including any additional Units received pursuant to Section 5 above that relate to such vested Units, as soon as reasonably practicable after the applicable Vesting Date, but in no event later than December 31 of the calendar year in which the applicable Vesting Date occurs. However, if a scheduled delivery date falls on a date that is not a business day, such delivery date shall instead fall on the next business day. Notwithstanding the foregoing, in the event that (i) you are subject to the Company's policy permitting officers and directors to sell Shares only during certain "window periods," as in effect from time to time (the "Policy"), or you are otherwise prohibited from selling Shares in the open market, and any Shares subject to your Award are scheduled to be delivered on a day (the "Original Distribution Date") that does not occur during an open "window period" applicable to you or a day on which you are permitted to sell Shares pursuant to a written plan that meets the requirements of Rule 10b5-1 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as determined by the Company in accordance with the Policy, or does not occur on a date when you are otherwise permitted to sell Shares in the open market, and (ii) the Company elects not to satisfy its tax withholding obligations by withholding Shares from your distribution, then such Shares shall not be delivered on such Original Distribution Date and shall instead be delivered on the first business day of the next occurring open "window period" applicable to you pursuant to the Policy (regardless of whether you are still providing Continuous Service at such time) or the next business day when you are not prohibited from selling Shares in the open market, but in no event later than December 31 of the calendar year in which the applicable Vesting Date occurs.

There are no certificates evidencing the Units. Certificates evidencing the Shares to be delivered pursuant to this Agreement may be issued by the Company and registered in your name.

7. Transfer Restrictions. The Units are non-transferable. Shares that are received under your Award are subject to the transfer restrictions set forth in the Plan and any transfer restrictions that may be described in the Company's bylaws or charter or insider trading policies in effect at the time of the contemplated transfer.

8. No Rights as a Stockholder. A Unit (i) does not represent an equity interest in the Company, and (ii) carries no voting, dividend or dividend equivalent rights. You will not have an equity interest in the Company or any of such shareholder rights, unless and until the Shares are delivered to you in accordance with this Agreement.

9. Securities Laws. Upon the delivery of the Shares, you will make or enter into such written representations, warranties and agreements as the Committee may reasonably request in order to comply with applicable securities laws or with this Agreement. Notwithstanding any other provision of the Plan or this Agreement to the contrary, unless there is an available exemption from such registration, qualification or other legal requirements, Units may not be converted into Shares prior to the completion of any registration or qualification of the Units or the Shares that is required to comply with applicable state and federal securities or any ruling or regulation of any governmental body or national securities exchange or compliance with any

other applicable federal, state or foreign law that the Committee shall in its sole discretion determine in good faith to be necessary or advisable.

10. **Legends on Certificates.** The certificates representing the Shares delivered to you as contemplated by this Agreement shall be subject to such stop transfer orders and other restrictions as the Committee may deem advisable under the Plan or the rules, regulations, and other requirements of the Securities and Exchange Commission, any stock exchange upon which such Shares are listed, and any applicable Federal or state laws, and the Committee may cause a legend or legends to be put on any such certificates to make appropriate reference to such restrictions.

11. **Award Not A Service Contract and No Entitlement to Future Grants.** Your Award is not an employment or service contract, and nothing in your Award shall be deemed to create in any way whatsoever any obligation or right to continued employment or service with or to the Company Group. In addition, nothing in your Award shall obligate the Company, its stockholders, its Board or employees to continue any relationship that you might have as a member of the Board, as an employee or as any other type of service provider for the Company. You acknowledge and agree that this Award was granted in the Committee's discretion and that neither the grant of this Award nor the issuance of any Shares pursuant to this Award creates any entitlement to or expectation of any future grant of Units or any future benefits in lieu of Units.

12. **Tax Consequences.** You are responsible for any taxes due in connection with your receipt of this Award, including the vesting of such Award and delivery of Shares, and for declaring the Award to the relevant tax authority to which you are subject, if required.

13. **Withholding Obligations.**

(a) At the time your Award is made, or at any time thereafter as requested by the Company, you hereby authorize the Company to satisfy its withholding obligations, if any, from payroll and any other amounts payable to you (or, in the Company's discretion, from Shares that become deliverable upon vesting under this Award), and otherwise agree to make adequate provision for any sums required to satisfy the federal, state, local and foreign tax withholding obligations of the Company, if any, which arise in connection with the grant of or vesting of your Award or the delivery of Shares under the Award. Notwithstanding the foregoing, if you are a Section 16 officer of the Company under the Exchange Act, the Company will satisfy its withholding obligations, if any, by withholding a number of Shares that become deliverable upon vesting under this Award.

(b) Unless the tax withholding obligations of the Company, if any, are satisfied, the Company shall have no obligation to issue a certificate for such Shares or release such Shares.

14. **Notices.** Any notices provided for in your Award or the Plan shall be given in writing and shall be delivered by hand or sent by overnight courier, certified or registered mail, return receipt requested, postage prepaid, or electronic mail and shall be deemed effectively given upon receipt or, in the case of notices delivered by the Company to you, five (5) days after

deposit in the United States mail, postage prepaid, addressed to you at the last address you provided to the Company.

15. Miscellaneous.

(a) You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Committee to carry out the purposes or intent of this Award.

(b) You acknowledge and agree that you have reviewed your Award in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your Award and fully understand all provisions of your Award.

(c) The waiver by either party of compliance with any provision of the Award by the other party shall not operate or be construed as a waiver of any other provision of the Award, or of any subsequent breach by such party of a provision of the Award.

16. Governing Plan Document. Your Award is subject to all interpretations, amendments, rules and regulations that may from time to time be promulgated and adopted pursuant to the Plan. In the event of any conflict between the provisions of the Plan and any other document, the provisions of the Plan shall control.

17. Data Privacy Notification. ***You are hereby notified of the collection, use and transfer, in electronic or other form, of your personal data as described in this Agreement, any other Award materials and the Company's Employee Personal Information Privacy Notice or Employee Privacy Notice and Consent Form, as applicable (the "Privacy Notice"), which is viewable at https://intranet.cbre.com/Sites/EMEA-DataPrivacy/en-GB/Documents/MASTER_Employee_Privacy_notice.pdf. Such personal data may be collected, used and transferred by and among, as applicable, the Company, the Company Group and any third parties assisting (presently or in the future) with the implementation, administration and management of the Plan, such as Merrill Lynch, Pierce, Fenner &Smith Incorporated ("Merrill Lynch"), or its successor, for the exclusive purpose of implementing, administering and managing your participation in the Plan. The Company's basis for the processing and transfer of the data is described in the Company's Privacy Notice. Where required under applicable law, personal data also may be disclosed to certain securities or other regulatory authorities where the Company's shares are listed or traded or regulatory filings are made, or to certain tax authorities for compliance with the Company's, the Employer's and/or your tax obligations. You understand that the collection, use and transfer of your personal data is mandatory for compliance with applicable law and necessary for the performance of the Plan and that your refusal to provide such personal data would make it impossible for the Company to perform its contractual obligations and may affect your ability to participate in the Plan.***

18. Appendices. Notwithstanding any provisions in this Agreement, if you reside in a country outside the United States or are otherwise subject to the laws of a country other than the United States, the Award shall be subject to the additional terms and conditions set forth in Appendix A to this Agreement and to any special terms and provisions (if any) as set forth in

Appendix B for your country. Moreover, if you relocate outside the U.S., the special terms and conditions in Appendix A (applicable to all non-U.S. countries) and in Appendix B (applicable to your specific country) will apply to you, to the extent the Company determines that the application of such terms and conditions is necessary or advisable for legal or administrative reasons. Appendix A and Appendix B constitute part of this Agreement.

19. Imposition of Other Requirements. The Company reserves the right to impose other requirements on your participation in the Plan, on the Award and on any Shares acquired under the Plan, to the extent the Company determines it is necessary or advisable for legal or administrative reasons, and to require you to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

APPENDIX A

TO

RESTRICTED STOCK UNIT AGREEMENT

PROVISIONS APPLICABLE TO NON-U.S. COUNTRIES

This Appendix A includes additional terms and conditions that govern the Award granted to you under the Plan if you are a Participant and reside and/or work in a country outside the United States of America (or later relocate to such a country). Capitalized terms used but not defined herein shall have the meanings ascribed to them in the Plan and/or the Agreement to which this Appendix A is attached.

***

Nature of Grant. In accepting the grant of the Award, you acknowledge, understand and agree that:

a. the Plan is established voluntarily by the Company, it is discretionary in nature, and may be amended, suspended or terminated by the Company at any time, to the extent permitted by the Plan;

b. the grant of the Award is exceptional, voluntary and occasional;

c. all decisions with respect to future Units or other grants, if any, will be at the sole discretion of the Company;

d. you are voluntarily participating in the Plan;

e. the Award and any Shares subject to the Award, and the income and value of same, are not intended to replace any pension rights or compensation;

f. unless otherwise expressly agreed in a writing by you with the Company, the Award and the Shares subject to the Award, and the income and value of same, are not granted as consideration for, or in connection with, the service you may provide as a director of a Subsidiary or Affiliate;

g. the Award and any Shares subject to the Award, and the income and value of same, are not part of normal or expected compensation for any purpose, including, without limitation, calculating any severance, resignation, termination, redundancy, dismissal, end-of-service payments, holiday pay, bonuses, long-service awards, pension or retirement or welfare benefits or similar mandatory payments;

h. the future value of the Shares underlying the Award is unknown, indeterminable, and cannot be predicted with certainty;

i. no claim or entitlement to compensation shall arise from forfeiture of the Award resulting from the termination of your Continuous Service as provided for in the Plan or in the Agreement;

j. for purposes of the Award, and unless otherwise expressly provided in the Plan, the Agreement or determined by the Company, your Continuous Service will be considered terminated as of the date you are no longer actively providing services to the Company or any Parent, Subsidiary or Affiliate (regardless of the reason for such termination and whether or not later found to be invalid or in breach of employment laws in the jurisdiction where you are employed or the terms of your employment agreement, if any), and unless otherwise expressly provided in the Plan, the Agreement or determined by the Company, your right to vest in the Award under the Plan, if any, will terminate as of such date and will not be extended by any notice period (*e.g.*, your period of service would not include any contractual notice period or any period of "garden leave" or similar period mandated under employment laws in the jurisdiction where you are employed or the terms of your employment agreement, if any); the Committee shall have the exclusive discretion to determine when you are no longer actively providing services for purposes of your Award (including whether you may still be considered to be providing services while on a leave of absence);

k. unless otherwise provided in the Plan or by the Company in its discretion, the Award and the benefits evidenced by the Agreement do not create any entitlement to have the Award or any such benefits transferred to, or assumed by, another company nor to be exchanged, cashed out or substituted for, in connection with any corporate transaction affecting the shares of the Company; and

l. neither the Company nor any Parent, Subsidiary or Affiliate shall be liable for any foreign exchange rate fluctuation between your local currency and the United States Dollar that may affect the value of the Award or of any amounts due to you pursuant to the settlement of the Award or the subsequent sale of any Shares acquired upon settlement.

Responsibility for Taxes. The following provisions supplement Section 13 of the Agreement:

You acknowledge that, regardless of any action taken by the Company or, if different, your employer (the "Employer"), the ultimate liability for all income tax, social insurance contributions, payroll tax, fringe benefits tax, payment on account or other tax-related items related to your participation in the Plan and legally applicable to you ("Tax-Related Items") is and remains your responsibility and may exceed the amount, if any, actually withheld by the Company or the Employer. You further acknowledge that the Company and the Employer (a) make no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Award, and (b) do not commit to and are under no obligation to structure the terms of the grant or any aspect of the Award to reduce or eliminate your liability for Tax-Related Items or achieve any particular tax result. Further, if you are subject to Tax-Related Items in more than one jurisdiction, you acknowledge that the Company and/or the Employer (or former employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

Prior to any applicable taxable or tax withholding event, you authorize the Company and/or the Employer, or their respective agents, at their discretion, to satisfy the obligations with regard to all Tax-Related Items by any of the methods referred to in Section 13(a) of the Agreement. In addition, you authorize withholding from proceeds of the sale of Shares acquired upon settlement of the Award either through a voluntary sale, through a mandatory sale, through a "withhold to cover" program or any other scheme or program, in each case, arranged by the Company (on your behalf pursuant to this authorization without further consent by you).

The Company may withhold Shares otherwise deliverable under the Award for Tax-Related Items solely by considering applicable minimum statutory withholding amounts. If the obligation for Tax-Related Items is satisfied by withholding in Shares, for tax purposes, you are deemed to have been issued the full number of Shares subject to the vested Award, notwithstanding that a number of the Shares are held back solely for the purpose of paying the Tax-Related Items.

Finally, if requested by the Company, you agree to pay to the Company or the Employer any amount of Tax-Related Items that the Company or the Employer may be required to withhold or account for as a result of your participation in the Plan that cannot be satisfied by the means previously described.

Language. You acknowledge that you are proficient in the English language and understand, or have consulted with an advisor who is proficient in the English language so as to enable you to understand, the provisions of the Agreement and the Plan. If you have received the Agreement or any other document related to the Plan translated into a language other than English, and if the meaning of the translated version is different than the English version, the English version will control.

Appendix B

TO

Restricted Stock Unit Agreement

Country-Specific Provisions

This Appendix B includes additional terms and conditions that govern the Award granted to you under the Plan if you are a Participant and reside and/or work in one of the countries listed herein. If you are a citizen or resident of a country other than the one in which you currently are working and/or residing (or if you are considered as such for local law purposes), or if you transfer or relocate employment or residence to another country after the Grant Date, the Company, in its discretion, will determine the extent to which the terms and conditions herein will be applicable to you.

This Appendix B also includes information regarding securities and other laws of which you should be aware with respect to your participation in the Plan. The information is based on laws in effect in the respective countries as of February 2019. Such laws are often complex and change frequently. As a result, you should not rely on the information noted herein as the only source of information relating to the consequences of your participation in the Plan because the information may be out of date by the time you vest in the Award or sell the Shares acquired under the Plan. In addition, the information noted herein is general in nature and may not apply to your particular situation, and the Company is not in a position to assure you of any particular result. Accordingly, you should seek appropriate professional advice as to how the applicable laws may apply to your situation. That is your responsibility, and not the Company's.

If you are a citizen or resident of a country other than the one in which you currently are working and/or residing (or if you are considered as such for local law purposes), or if you transfer employment or residence to another country after the Grant Date, the information noted herein may not be applicable to you in the same manner.

Capitalized terms used but not defined herein shall have the meanings ascribed to them in the Plan, the Agreement and/or the Appendix A which this Appendix B follows.

***

Australia

Australian Offer Document. This Award is intended to comply with the provisions of the Corporations Act 2001, ASIC Regulatory Guide 49 and ASIC Class Order CO 14/1000. Additional details are set forth in the Australian Offer Document, which you acknowledge has been provided to you with this Agreement.

Tax Information. Subdivision 83A-C of the Income Tax Assessment Act, 1997, applies to Awards granted under the Plan, such that the Award is intended to be subject to deferred taxation.

Grant Date:

Austria

No country-specific provisions.

Belgium

No country-specific provisions.

Canada

Form of Settlement. Notwithstanding any discretion contained in Section 10(f) of the Plan or anything to the contrary in the Agreement, the Award shall be settled in Shares only.

Securities Law Notice. You are permitted to sell Shares acquired upon the vesting and settlement of the Award through the designated broker appointed under the Plan, if any, provided the resale of Shares acquired under the Plan takes place outside of Canada through the facilities of a stock exchange on which the Shares are listed. The Shares are currently listed on the New York Stock Exchange ("NYSE").

The following provisions apply if you are a resident of Quebec:

Language Consent. The parties acknowledge that it is their express wish that the Agreement, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English.

Les parties reconnaissent avoir exigé la rédaction en anglais de la Convention, ainsi que de tous documents exécutés, avis donnés et procédures judiciaires intentées, directement ou indirectement, relativement à ou suite à la présente convention.

Authorization to Release and Transfer Necessary Personal Information. The following provision supplements Section 17 of the Agreement:

You hereby authorize the Company (including any Parent, Subsidiary or Affiliate) and the Company's representatives to discuss with and obtain all relevant information from all personnel, professional or non-professional, involved in the administration and operation of the Plan. You further authorize the Company, the Employer and any Parent, Subsidiary or Affiliate and the administrator of the Plan (including Merrill Lynch or any other stock plan service provider) to disclose and discuss the Plan with their advisors. You further authorize the Company, the Employer and any Parent, Subsidiary or Affiliate to record such information and to keep such information in your employee file.

CHINA

The following provisions apply only to Participants who are PRC nationals, unless otherwise determined by the Company or required by the PRC State Administration of Foreign Exchange ("SAFE").

Mandatory Sale Restriction. To facilitate compliance with local regulatory requirements, you agree to the sale of any Shares to be issued to you under the Plan, including by the Company on your behalf if the Company so determines. The sale will occur, at the Company's election: (i) immediately upon vesting, (ii) following your termination of Continuous Service, or (iii) within any other time frame as the Company determines to be necessary to comply with local regulatory requirements. You further agree that the Company is authorized to instruct its designated broker to assist with the mandatory sale of such shares (on your behalf pursuant to this authorization) and you expressly authorize the Company's designated broker to complete the sale of such shares. You acknowledge that the designated broker is under no obligation to arrange for the sale of the Shares at any particular price. Upon the sale of the Shares, the Company agrees to pay you the cash proceeds from the sale, less any brokerage fees or commissions and subject to any obligation to satisfy Tax-Related Items. You agree that the payment of the cash proceeds will be subject to the repatriation requirements described below.

You further agree that any Shares to be issued to you shall be deposited directly into an account with the designated broker. The deposited Shares shall not be transferable (either electronically or in certificate form) from the brokerage account. This limitation shall apply both to transfers to different accounts with the same broker and to transfers to other brokerage firms. The limitation shall apply to all Shares issued to you under the Plan, whether or not you continue to be employed by the Company Group. If you sell Shares that you acquire under the Plan, the repatriation requirements described below shall apply.

Exchange Control Restrictions. By participating in the Plan, you understand and agree that, if you are subject to exchange control laws in China, you will be required to immediately repatriate to China the proceeds from the sale of any Shares acquired under the Plan. You further understand that such repatriation of the proceeds may need to be effected through a special exchange control account established by the Company, the Employer or a Subsidiary or Affiliate, and you hereby consent and agree that the proceeds from the sale of Shares acquired under the Plan may be transferred to such account by the Company (or its designated broker) on your behalf prior to being delivered to you. You also agree to sign any agreements, forms and/or consents that may be reasonably requested by the Company (or its designated broker) to effectuate such transfers.

CZECH REPUBLIC

No country-specific provisions.

FRANCE

Language Consent. By accepting the grant, you confirm having read and understood the Plan and Agreement which were provided in the English language. You accept the terms of those documents accordingly.

En acceptant l'attribution, vous confirmez avoir lu et compris le Plan et l'Accord, qui ont été fournis en langue anglaise. Vous acceptez les termes de ces documents en connaissance de cause.

GERMANY

No country-specific provisions.

HONG KONG

Sale Restriction. Shares received at vesting are accepted as a personal investment. In the event that the Award vests and Shares are issued to you (or your heirs) within six months of the Grant Date, you (or your heirs) agree that the Shares will not be offered to the public or otherwise disposed of prior to the six-month anniversary of the Grant Date.

Securities Law Notice. *WARNING:* The contents of this document have not been reviewed by any regulatory authority in Hong Kong. You should exercise caution in relation to the offer. If you are in any doubt about any of the contents of this document, you should obtain independent professional advice. Neither the grant of the Award nor the issuance of Shares upon vesting and settlement of the Award constitutes a public offering of securities under Hong Kong law and are available only to Participants. The Agreement, the Plan and other incidental communication materials distributed in connection with the Award (i) have not been prepared in accordance with and are not intended to constitute a "prospectus" for a public offering of securities under the applicable securities legislation in Hong Kong and (ii) are intended only for the personal use of each Participant and may not be distributed to any other person.

INDIA

No country-specific provisions.

IRELAND

No country-specific provisions.

ITALY

Acknowledgement of Terms. You acknowledge that by accepting this Award, you have been given access to the Plan document, have reviewed the Plan and this Agreement in their entirety, and fully understand and accept all provisions of the Plan and this Agreement. Further you specifically and expressly approve the following sections of this Agreement: (i) Section 4 – Vesting; (ii) Section 6 – Issuance and Certificates; (iii) Section 11 – Award Not a Service Contract and No Entitlement to Future Grants; (iv) Section 13 – Withholding Obligations

(including the Responsibility for Taxes section in Appendix A which supplements Section 13); (v) Section 16 – Governing Plan Document; and (vi) the Nature of Grant section in Appendix A.

JAPAN

No country-specific provisions.

NETHERLANDS

No country-specific provisions.

NEW ZEALAND

Securities Law Notice.

Warning

This is an offer of rights to receive Shares underlying the Award. Shares give you a stake in the ownership of the Company. Shares are quoted on the NYSE. This means you may be able to sell them on the NYSE if there are interested buyers. You may get less than you invested. The price will depend on the demand for the Shares.

If the Company runs into financial difficulties and is wound up, you will be paid only after all creditors have been paid. You may lose some or all of your investment.

New Zealand law normally requires people who offer financial products to give information to investors before they invest. This information is designed to help investors to make an informed decision. The usual rules do not apply to this offer because it is made under an employee share scheme. As a result, you may not be given all the information usually required. You also will have fewer other legal protections for this investment.

In compliance with applicable New Zealand securities laws, you are entitled to receive, in electronic or other form and free of cost, copies of the Company's latest annual report, relevant financial statements and the auditor's report on said financial statements (if any).

You should ask questions, read all documents carefully, and seek independent financial advice before committing yourself.

NORWAY

No country-specific provisions.

POLAND

No country-specific provisions.

Grant Date:

Portugal

Language Consent. You hereby expressly declare that you have full knowledge of the English language and have read, understood and fully accepted and agreed with the terms and conditions established in the Plan and the Agreement.

Conhecimento da Lingua. *Você expressamente declara ter pleno conhecimento do idioma inglês e ter lido, entendido e totalmente aceito e concordou com os termos e condições estabelecidas no plano e no acordo.*

Puerto Rico

No country-specific provisions.

Romania

No country-specific provisions.

Russia

U.S. Transaction and Sale Restrictions. You understand that your acceptance of the Award results in a contract between you and the Company that is completed in the United States and that the Plan is governed by the laws of the State of Delaware, without regard to its conflict of law provisions. Further, any Shares to be issued to you upon vesting and settlement of the Award shall be delivered to you through a bank or brokerage account in the United States. You are not permitted to sell or otherwise transfer the Shares directly to individuals or legal entities in Russia, nor are you permitted to bring any certificates representing the Shares into Russia.

Securities Law Notice. This Agreement, the Plan and all other materials you may receive regarding participation in the Plan do not constitute advertising or an offering of securities in Russia. Absent any requirement under local law, the issuance of securities pursuant to the Plan has not and will not be registered in Russia; hence, the securities described in any Plan-related documents may not be used for offering or public circulation in Russia.

Singapore

Sale Restriction. You agree that any Shares issued to you upon vesting and settlement of the Award will not be offered for sale or sold in Singapore prior to the six-month anniversary of the Grant Date, unless such sale or offer is made pursuant to the exemptions under Part XIII Division (1) Subdivision (4) (other than section 280) of the Singapore Securities and Futures Act (Chapter 289, 2006 Ed.) ("SFA") or pursuant to, and in accordance with the conditions of, any other applicable provision(s) of the SFA.

Securities Law Notice. The Award is being made to you in reliance on the "Qualifying Person" exemption under section 273(1)(f) of the SFA and is not being made with the view to the underlying Shares being subsequently offered for sale to any other party. The Plan has not been nor will it be lodged or registered as a prospectus with the Monetary Authority of Singapore.

Chief Executive Officer and Director Notification Obligation. If you are the Chief Executive Officer ("CEO") or a director (including an alternate, substitute, or shadow director) of the Company's Singapore Subsidiary or Affiliate, you are subject to certain notification requirements under the Singapore Companies Act. Among these requirements is an obligation to notify the Company's Singapore Subsidiary or Affiliate in writing when you receive an interest (*e.g.*, an Award or Shares) in the Company or any Parent, Subsidiary or Affiliate. In addition, you must notify the Company's Singapore Subsidiary or Affiliate when you sell Shares or shares of any Parent, Subsidiary or Affiliate (including when you sell Shares issued upon vesting and settlement of the Award). These notifications must be made within a prescribed period of time from acquiring or disposing of any interest in the Company or any Parent, Subsidiary or Affiliate. In addition, a notification of your interests in the Company or any Parent, Subsidiary or Affiliate must be made within a prescribed period of time from becoming the CEO or a director.

SLOVAKIA

No country-specific provisions.

SOUTH KOREA

No country-specific provisions.

SPAIN

Labor Law Acknowledgment. The following provision supplements the Nature of Grant section in Appendix A:

By accepting the Award, you acknowledge that you understand and agree that you consent to participation in the Plan and that you have received a copy of the Plan.

You further understand that the Company has unilaterally, gratuitously and in its sole discretion decided to grant Awards under the Plan to employees of the Company or any Parent, Subsidiary or Affiliate throughout the world. The decision to grant the Awards is a limited decision that is entered into upon the express assumption and condition that any grant will not economically or otherwise bind the Company or any Parent, Subsidiary or Affiliate on an ongoing basis other than as set forth in this Agreement. Consequently, you understand that any grant is given on the assumption and condition that it shall not become a part of any employment contract (either with the Company or any Parent, Subsidiary or Affiliate) and shall not be considered a mandatory benefit, salary for any purpose (including severance compensation) or any other right whatsoever. Further, you understand and freely accept that there is no guarantee that any benefit shall arise from any gratuitous and discretionary grant since the future value of the Shares is unknown and unpredictable. Additionally, you understand that the vesting and settlement of the Award is expressly conditioned on your continued and active rendering of service to the Employer such that if your Continuous Service terminates for any reason other than as expressly provided in Section 4 of the Agreement, your Award will cease vesting immediately effective as of the date of

Grant Date:

termination of your Continuous Service. This will be the case, for example, even if (1) you are considered to be unfairly dismissed without good cause (*i.e.*, subject to a “*despido improcedente*”); (2) you are dismissed for disciplinary or objective reasons or due to a collective dismissal; (3) you terminate Continuous Service due to a change of work location, duties or any other employment or contractual condition; (4) you terminate Continuous Service due to the Company’s or any Parent’s, Subsidiary’s or Affiliate’s unilateral breach of contract; or (5) your Continuous Service terminates for any other reason whatsoever, in each case other than as expressly provided in Section 4 of the Agreement. Consequently, upon termination of your Continuous Service for any of the above reasons, you will automatically lose any rights to Awards granted to you that were unvested on the date of termination of your Continuous Service, as described in the Agreement.
Finally, you understand that this grant would not be made to you but for the assumptions and conditions referred to herein; thus, you acknowledge and freely accept that should any or all of the assumptions be mistaken or should any of the conditions not be met for any reason, then any grant of an Award shall be null and void.

Securities Law Notice. No “offer of securities to the public,” as defined under Spanish law, has taken place or will take place in the Spanish territory in connection with the offer of the Award. The Agreement has not been nor will it be registered with the *Comisión Nacional del Mercado de Valores*, and does not constitute a public offering prospectus.

SWEDEN

No country-specific provisions.

SWITZERLAND

Securities Law Notice. The Award is considered a private offering in Switzerland and is therefore not subject to securities registration in Switzerland. Neither this document nor any other materials relating to the Award (a) constitutes a prospectus as such term is understood pursuant to article 652a of the Swiss Code of Obligations, (b) may be publicly distributed or otherwise made publicly available in Switzerland or (c) has been or will be filed with, approved by or supervised by any Swiss regulatory authority (*e.g.*, the Swiss Financial Market Supervisory Authority).

TAIWAN

Securities Law Notice. The Award and the Shares to be issued pursuant to the Plan are available only for Participants. The Award is not a public offer of securities by a Taiwanese company.

UNITED KINGDOM

Tax Acknowledgment. The following provisions supplement Section 13 of the Agreement as further supplemented by the Responsibility for Taxes section in Appendix A:

Grant Date:

Without limitation to Section 13 of the Agreement and the Responsibility for Taxes section in Appendix A, you agree that you are liable for all Tax-Related Items and hereby covenant to pay all such Tax-Related Items as and when requested by the Company or the Employer or by Her Majesty's Revenue and Customs ("HMRC") (or any other tax or other relevant authority). You also agree to indemnify and keep indemnified the Company and the Employer against any taxes or other amounts that they are required to pay or withhold or have paid or will pay to HMRC (or any other tax or other relevant authority) on your behalf.

Notwithstanding the foregoing, if you are a director or an executive officer (as within the meaning of Section 13(k) of the Exchange Act), the terms of the immediately foregoing provision will not apply. In such case, if the amount of any income tax due is not collected from or paid by you within ninety (90) days of the end of the U.K. tax year (April 6 - April 5) in which an event giving rise to the indemnification described above occurs, the amount of any uncollected income tax may constitute a benefit to you on which additional income tax and national insurance contributions ("NICs") may be payable. You understand and agree that you will be responsible for reporting and paying any income tax due on this additional benefit directly to HMRC under the self-assessment regime and for reimbursing the Company or the Employer (as applicable) for the value of any employee NICs due on this additional benefit, which the Company or the Employer may recover from you by any of the means referred to in the Plan or the Agreement.

Grant Date:

EXHIBIT 21

SUBSIDIARIES OF CBRE GROUP, INC.

At December 31, 2019

The following is a list of subsidiaries of the company as of December 31, 2019, omitting subsidiaries which, considered in the aggregate as if they were a single subsidiary, would not constitute a significant subsidiary.

NAME	State (or Country) of Incorporation
CBRE Services, Inc.	Delaware
CB/TCC, LLC	Delaware
CBRE, Inc.	Delaware
CBRE Holdings, LLC	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

EXHIBIT 23.1

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, 333-218113 and 333-231572 on Form S-8 and No. 333-222163 on Form S-3) of CBRE Group, Inc. of our report dated March 2, 2020, with respect to the consolidated balance sheets of CBRE Group, Inc. and subsidiaries as of December 31, 2019 and 2018, 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, 2019, and the related notes and financial statement schedule II, and the effectiveness of internal control over financial reporting as of December 31, 2019, which report appears in the December 31, 2019 annual report on Form 10-K of CBRE Group, Inc.

Our report dated March 2, 2020, on the consolidated financial statements as of December 31, 2019, includes an explanatory paragraph related to CBRE Group Inc. and subsidiaries' change in method of accounting for leases in 2019 due to the adoption of the Accounting Standards Codification Topic 842, *Leases*.

Our report dated March 2, 2020, on the effectiveness of internal control over financial reporting as of December 31, 2019, contains an explanatory paragraph that states our audit of internal control over financial reporting of CBRE Group, Inc. and subsidiaries excluded an evaluation of the internal control over financial reporting of Telford Homes Plc as management excluded Telford Homes Plc from its assessment of the effectiveness of CBRE Group, Inc. and subsidiaries' internal control over financial reporting as of December 31, 2019.

Our report dated March 2, 2020, on the effectiveness of internal control over financial reporting as of December 31, 2019, expresses our opinion that CBRE Group, Inc. and subsidiaries did not maintain effective internal control over financial reporting as of December 31, 2019 because of the effect of material weaknesses on the achievement of the objectives of the control criteria and contains an explanatory paragraph that states the following material weaknesses have been identified:

- The Global Workspace Solutions segment in the Company's EMEA region (GWS EMEA) did not have sufficient resources with the appropriate reporting lines, roles and responsibilities, authority, training and skill sets to design and operate financial activities, including controls, in an appropriate and timely manner.
- GWS EMEA did not effectively assess and address the risks posed by changes in the business and the related effect on the GWS EMEA system of internal controls. In relation to this, specific to the rollout of GWS EMEA's primary financial system, GWS EMEA did not effectively operate general information technology controls related to financial data migrations, user access, system changes and financial data processing. Because of the deficiencies in general information technology controls, the business process controls (automated and manual) that are dependent on this system were also deemed ineffective because they could have been adversely impacted.
- GWS EMEA did not design or execute control activities that sufficiently mitigated the financial reporting risks related to GWS EMEA.
- GWS EMEA did not have an effective information and communication process to identify, capture and process relevant information necessary for financial accounting and reporting.
- The Company did not monitor the presentation and effectiveness of components of internal control through evaluation and remediation in an appropriate manner within GWS EMEA and GWS EMEA was not sufficiently integrated with the corporate oversight function.

Consequently, there were control failures for GWS EMEA in the areas of revenue and receivables, balance sheet account reconciliations, journal entries and general information technology controls.

/s/ KPMG LLP

Los Angeles, California
March 2, 2020

EXHIBIT 31.1

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 2, 2020

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

EXHIBIT 31.2

CERTIFICATIONS

I, Leah C. Stearns, 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 2, 2020

/s/ LEAH C. STEARNS
Leah C. Stearns
Chief Financial Officer

EXHIBIT 32

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 Leah C. Stearns, 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, 2019, 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 2, 2020

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

/s/ LEAH C. STEARNS
Leah C. Stearns
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.