

BERKSHIRE HATHAWAY INC
Form 10-K
February 27, 2017
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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, 2016

Commission file number 001-14905

BERKSHIRE HATHAWAY INC.

(Exact name of Registrant as specified in its charter)

Delaware State or other jurisdiction of incorporation or organization	47-0813844 (I.R.S. Employer Identification Number)
3555 Farnam Street, Omaha, Nebraska (Address of principal executive office)	68131 (Zip Code)
Registrant's telephone number, including area code (402) 346-1400	

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

Title of each class	Name of each exchange on which registered
Class A common stock, \$5.00 Par Value	New York Stock Exchange
Class B common stock, \$0.0033 Par Value	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

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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, 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 and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulations S-T during the preceding 12 months. Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company
Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

State the aggregate market value of the voting stock held by non-affiliates of the Registrant as of June 30, 2016: \$278,053,000,000*

Indicate number of shares outstanding of each of the Registrant's classes of common stock:

February 16, 2017 Class A common stock, \$5 par value	774,680 shares
February 16, 2017 Class B common stock, \$0.0033 par value	1,304,592,522 shares

DOCUMENTS INCORPORATED BY REFERENCE

Document	Incorporated In
Proxy Statement for Registrant's Annual Meeting to be held May 6, 2017	Part III

* This aggregate value is computed at the last sale price of the common stock on June 30, 2016. It does not include the value of Class A common stock (316,766 shares) and Class B common stock (70,408,573 shares) held by Directors and Executive Officers of the Registrant and members of their immediate families, some of whom may not constitute affiliates for purpose of the Securities Exchange Act of 1934.

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Part I

Item 1. Business

Berkshire Hathaway Inc. (Berkshire, Company or Registrant) is a holding company owning subsidiaries engaged in a number of diverse business activities. The most important of these are insurance businesses conducted on both a primary basis and a reinsurance basis, a freight rail transportation business and a group of utility and energy generation and distribution businesses. Berkshire also owns and operates a large number of other businesses engaged in a variety of activities, as identified herein. Berkshire is domiciled in the state of Delaware, and its corporate headquarters are located in Omaha, Nebraska.

Berkshire's operating businesses are managed on an unusually decentralized basis. There are essentially no centralized or integrated business functions (such as sales, marketing, purchasing, legal or human resources) and there is minimal involvement by Berkshire's corporate headquarters in the day-to-day business activities of the operating businesses. Berkshire's corporate office senior management participates in and is ultimately responsible for significant capital allocation decisions, investment activities and the selection of the Chief Executive to head each of the operating businesses. It also is responsible for establishing and monitoring Berkshire's corporate governance practices, including, but not limited to, communicating the appropriate tone at the top messages to its employees and associates, monitoring governance efforts, including those at the operating businesses, and participating in the resolution of governance-related issues as needed.

Berkshire and its consolidated subsidiaries employ approximately 367,700 people worldwide.

Insurance and Reinsurance Businesses

Berkshire's insurance and reinsurance business activities are conducted through numerous domestic and foreign-based insurance entities. Berkshire's insurance businesses provide insurance and reinsurance of property and casualty risks and also reinsure life, accident and health risks worldwide.

In direct insurance activities, the insurer assumes the risk of loss from persons or organizations that are directly subject to the risks. Such risks may relate to property, casualty (or liability), life, accident, health, financial or other perils that may arise from an insurable event. In reinsurance activities, the reinsurer assumes defined portions of risks that other direct insurers or reinsurers have assumed in their own insuring activities.

Reinsurance contracts are normally classified as treaty or facultative contracts. Treaty reinsurance refers to reinsurance coverage for all or a portion of a specified group or class of risks ceded by the direct insurer, while facultative reinsurance involves coverage of specific individual underlying risks. Reinsurance contracts are further classified as quota-share or excess. Under quota-share (proportional or pro-rata) reinsurance, the reinsurer shares proportionally in the original premiums and losses of the direct insurer or reinsurer. Excess (or non-proportional) reinsurance provides for the indemnification of the direct insurer or reinsurer for all or a portion of the loss in excess of an agreed upon amount or retention. Both quota-share and excess reinsurance contracts may provide for aggregate limits of indemnification.

Insurance and reinsurance are generally subject to regulatory oversight throughout the world. Except for regulatory considerations, there are virtually no barriers to entry into the insurance and reinsurance industry. Competitors may be domestic or foreign, as well as licensed or unlicensed. The number of competitors within the industry is not known. Insurers and reinsurers compete on the basis of reliability, financial strength and stability, financial ratings, underwriting consistency, service, business ethics, price, performance, capacity, policy terms and coverage conditions.

Insurers based in the United States (U.S.) are subject to regulation by their states of domicile and by those states in which they are licensed to write policies on an admitted basis. The primary focus of regulation is to assure that insurers are financially solvent and that policyholder interests are otherwise protected. States establish minimum capital levels for insurance companies and establish guidelines for permissible business and investment activities. States have the authority to suspend or revoke a company's authority to do business as conditions warrant. States regulate the payment of dividends by insurance companies to their shareholders and other transactions with affiliates. Dividends, capital distributions and other transactions of extraordinary amounts are subject to prior regulatory approval.

Insurers may market, sell and service insurance policies in the states where they are licensed. These insurers are referred to as admitted insurers. Admitted insurers are generally required to obtain regulatory approval of their policy forms and premium rates. Non-admitted insurance markets have developed to provide insurance that is otherwise unavailable through admitted insurers. Non-admitted insurance, often referred to as excess and surplus lines, is procured by either state-licensed surplus lines brokers who place risks with insurers not licensed in that state or by the insured party's direct procurement from non-admitted insurers. Non-admitted insurance is subject to considerably less regulation with respect to

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policy rates and forms. Reinsurers are normally not required to obtain regulatory approval of premium rates or reinsurance contracts.

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The insurance regulators of every state participate in the National Association of Insurance Commissioners (NAIC). The NAIC adopts forms, instructions and accounting procedures for use by U.S. insurers and reinsurers in preparing and filing annual statutory financial statements. However, an insurer's state of domicile has ultimate authority over these matters. In addition to its activities relating to the annual statement, the NAIC develops or adopts statutory accounting principles, model laws, regulations and programs for use by its members. Such matters deal with regulatory oversight of solvency, risk management, compliance with financial regulation standards and risk-based capital reporting requirements.

Berkshire's insurance companies maintain capital strength at exceptionally high levels. This strength differentiates Berkshire's insurance companies from their competitors. Collectively, the aggregate statutory surplus of Berkshire's U.S. based insurers was approximately \$136 billion at December 31, 2016. Berkshire's major insurance subsidiaries are rated AA+ by Standard & Poor's and A++ (superior) by A.M. Best with respect to their financial condition and claims paying ability.

The Terrorism Risk Insurance Act of 2002 established within the Department of the Treasury a Terrorism Insurance Program (Program) for commercial property and casualty insurers by providing federal reinsurance of insured terrorism losses. The Program currently extends to December 31, 2020 through other Acts, most recently the Terrorism Risk Insurance Program Reauthorization Act of 2015 (the 2015 TRIA Reauthorization). Hereinafter these Acts are collectively referred to as TRIA. Under TRIA, the Department of the Treasury is charged with certifying acts of terrorism. In 2017, coverage under TRIA occurs when the industry insured loss for certified events occurring during a calendar year exceeds \$140 million. Under the 2015 TRIA Reauthorization, the level of insured losses for certified events occurring during a calendar year required to trigger coverage under TRIA will increase annually by \$20 million per year until the level of insured losses required to trigger coverage reaches \$200 million in 2020. To be eligible for federal reinsurance, insurers must make available insurance coverage for acts of terrorism, by providing policyholders with clear and conspicuous notice of the amount of premium that will be charged for this coverage and of the federal share of any insured losses resulting from any act of terrorism. Assumed reinsurance is specifically excluded from TRIA participation. TRIA currently also excludes certain forms of direct insurance (such as personal and commercial auto, burglary, theft, surety and certain professional liability lines). Reinsurers are not required to offer terrorism coverage and are not eligible for federal reinsurance of terrorism losses.

In the event of a certified act of terrorism, the federal government will reimburse insurers (conditioned on their satisfaction of policyholder notification requirements) for 83% of their insured losses in excess of an insurance group's deductible. Under the 2015 TRIA Reauthorization, the federal government's reimbursement obligation will be reduced annually by 1% per year until the level of reimbursement is reduced to 80% in 2020. Under the Program, the deductible is 20% of the aggregate direct subject earned premium for relevant commercial lines of business in the immediately preceding calendar year. The aggregate deductible in 2017 for Berkshire's consolidated insurance and reinsurance businesses is expected to approximate \$1.1 billion. There is also an aggregate limit of \$100 billion on the amount of the federal government coverage for each TRIA year.

Regulation of the insurance industry outside of the United States is subject to the laws and regulations of each country in which an insurer has operations or writes premiums. Some jurisdictions impose comprehensive regulatory requirements on insurance businesses, such as in the United Kingdom, where insurers are subject to regulation by the Prudential Regulation Authority and the Financial Conduct Authority and in Germany where insurers are subject to regulation by the Federal Financial Supervisory Authority (BaFin). Other jurisdictions may impose fewer requirements. In certain foreign countries, reinsurers are also required to be licensed by governmental authorities. These licenses may be subject to modification, suspension or revocation dependent on such factors as amount and types of insurance liabilities and minimum capital and solvency tests. The violation of regulatory requirements may result in fines, censures and/or criminal sanctions in various jurisdictions.

Berkshire's insurance underwriting operations comprise the following sub-groups: (1) GEICO and its subsidiaries, (2) General Re and its subsidiaries, (3) Berkshire Hathaway Reinsurance Group and (4) Berkshire Hathaway Primary Group. Except for retroactive reinsurance and structured settlement and periodic payment annuity reinsurance products that generate significant amounts of up-front premiums along with estimated claims expected to be paid over very long periods of time (creating float, see Investments section below), Berkshire expects to achieve a net underwriting profit over time and to reject inadequately priced risks. Underwriting profit is defined as earned premiums less associated incurred losses, loss adjustment expenses and underwriting and policy acquisition expenses. Underwriting profit does not include investment income earned from investments. Berkshire's insurance subsidiaries employ approximately 44,000 people. Additional information related to each of Berkshire's four underwriting groups follows.

GEICO GEICO is headquartered in Chevy Chase, Maryland and its insurance subsidiaries consist of: Government Employees Insurance Company, GEICO General Insurance Company, GEICO Indemnity Company, GEICO Casualty Company, GEICO Advantage Insurance Company, GEICO Choice Insurance Company, GEICO Secure Insurance Company, GEICO County Mutual Insurance Company and GEICO Marine Insurance Company. These companies primarily offer private

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passenger automobile insurance to individuals in all 50 states and the District of Columbia. In addition, GEICO insures motorcycles, all-terrain vehicles, recreational vehicles, boats and small commercial fleets and acts as an agent for other insurers who offer homeowners, renters, boat, life and identity management insurance to individuals to provide insurance and financial services for buyers who desire insurance coverages other than those offered by GEICO. GEICO markets its policies primarily through direct response methods in which applications for insurance are submitted directly to the companies via the Internet or by telephone.

GEICO competes for private passenger auto insurance customers with other companies that sell directly to the customer as well as with companies that use agency sales forces. The automobile insurance business is highly competitive in the areas of price and service. Some insurance companies may exacerbate price competition by selling their products for a period of time at less than adequate rates. GEICO will not knowingly follow that strategy. GEICO competes for private passenger automobile insurance customers in the preferred, standard and non-standard risk markets with other companies that sell directly to the customer as well as with companies that use agency sales forces, including State Farm, Allstate (including Esurance), Progressive and USAA. As a result of an aggressive advertising campaign and competitive rates, voluntary policies-in-force have increased about 38% over the past five years. GEICO was the second largest private passenger auto insurer in the United States in terms of premium volume in 2016. According to most recently published A.M. Best data, the five largest automobile insurers had a combined market share in 2015 of approximately 54%, with GEICO's market share being approximately 11.4%. Since the publication of that data, management believes that GEICO's current market share has grown to approximately 12%. Seasonal variations in GEICO's insurance business are not significant. However, extraordinary weather conditions or other factors may have a significant effect upon the frequency or severity of automobile claims.

Private passenger auto insurance is stringently regulated by state insurance departments. As a result, it is difficult for insurance companies to differentiate their products. Competition for private passenger automobile insurance, which is substantial, tends to focus on price and level of customer service provided. GEICO's cost-efficient direct response marketing methods and emphasis on customer satisfaction enable it to offer competitive rates and value to its customers. GEICO primarily uses its own claims staff to manage and settle claims. The name and reputation of GEICO is a material asset and management protects it and other service marks through appropriate registrations.

General Re General Re Corporation (General Re) is the holding company of General Reinsurance Corporation (GRC) and its subsidiaries and affiliates. GRC's subsidiaries include General Reinsurance AG, (GRAG), a major international reinsurer based in Germany. General Re subsidiaries currently conduct business activities globally in 45 cities and provide insurance and reinsurance coverages throughout the world. General Re provides property/casualty insurance and reinsurance, life/health reinsurance and other reinsurance intermediary and risk management services, underwriting management and investment management services. General Re is one of the largest reinsurers in the world based on premium volume and shareholder capital.

Property/Casualty Insurance and Reinsurance

General Re's property/casualty reinsurance business in North America is conducted through GRC, which is domiciled in Delaware and licensed in the District of Columbia and all states but Hawaii, where it is an accredited reinsurer. Property/casualty operations in North America are headquartered in Stamford, Connecticut, and are also conducted through 13 branch offices in the U.S. and Canada. Reinsurance activities are marketed directly to clients without involving a broker or intermediary. In 2016, approximately 41% of net written premiums in North America related to casualty reinsurance coverages and 41% related to property reinsurance coverages.

General Re's property/casualty business in North America also includes specialty insurers domiciled in Delaware. General Star is a specialty and surplus lines provider, underwriting a broad array of property, casualty and professional liability business through a select group of wholesale brokers, managing general underwriters and program administrators. Genesis is an alternative risk insurance provider, offering solutions for the unique needs of public entity, commercial and captive customers. In 2016, these specialty insurers represented approximately 18% of General Re's North American property/casualty net written premiums.

General Re's international property/casualty reinsurance business operations are conducted through internationally-based subsidiaries on a direct basis (without intermediaries) via General Reinsurance AG as well as several other General Re subsidiaries and branches in 18 countries. Coverages are written on both a quota-share and excess basis for multiple lines, including property, aviation and casualty. In 2016, international-based property/casualty operations principally wrote reinsurance on a direct basis in the form of treaties, with lesser amounts written on a facultative basis. International property/casualty business is also written through brokers, primarily via Faraday, a wholly-owned subsidiary. Faraday owns the managing agent of Syndicate 435 at Lloyd's and provides capacity and participates in 100% of the results of Syndicate 435.

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Life/Health Reinsurance

General Re's North American life/health business segments include life, disability, supplemental health, critical illness and long-term care. The international life/health business is segmented by geographic region and transacts business worldwide. The principal business segments include life, disability, critical illness, health and long-term care. The life/health business is marketed on a direct basis. In 2016, approximately 34% of life/health net premiums were written in the United States, 22% in Western Europe and the remaining 44% throughout the rest of the world.

Berkshire Hathaway Reinsurance Group Berkshire Hathaway Reinsurance Group (BHRG) operations are based in Stamford, Connecticut. Business activities are conducted through numerous subsidiaries, led by National Indemnity Company (NICO) and Columbia Insurance Company (Columbia). BHRG provides principally excess and quota-share reinsurance to other property and casualty insurers and reinsurers. BHRG also offers life reinsurance and annuity contracts through Berkshire Hathaway Life Insurance Company of Nebraska (BHLN).

The type and volume of insurance and reinsurance business written by BHRG is dependent on current market conditions, including prevailing premium rates and coverage terms. The level of BHRG's underwriting activities often fluctuates significantly from year to year depending on the perceived level of price adequacy in specific insurance and reinsurance markets as well as from the timing of particularly large reinsurance transactions.

BHRG underwrites traditional non-catastrophe property and casualty insurance and reinsurance, catastrophe excess-of-loss treaty and facultative reinsurance, and individual primary insurance policies on an excess-of-loss basis for primarily large or otherwise unusual discrete risks, referred to as individual risk. BHRG periodically participates in underwriting placements with major brokers in the London Market through a wholly-owned subsidiary based in Great Britain. BHRG's business is written through intermediary brokers or directly with the insured or reinsured.

Effective July 1, 2015, NICO entered into a 10-year, 20% quota-share reinsurance agreement with Insurance Australia Group Limited (IAG). IAG is a large insurance group that currently writes multiple lines of business in Australia, New Zealand and other Asia Pacific countries.

BHRG periodically assumes risks under retroactive reinsurance contracts. Retroactive reinsurance contracts afford protection to ceding companies against the adverse development of claims arising from events that have already occurred and that are insured under policies issued in prior years. Coverage under such contracts is provided on an excess basis or for losses payable immediately after the inception of the contract. Coverage provided is normally subject to large aggregate limits of indemnification. Significant amounts of asbestos, environmental and latent injury claims may arise under these contracts.

In BHRG's retroactive reinsurance business, the concept of time-value-of-money is an important element in establishing prices and contract terms, since the payment of losses under the insurance contracts are often expected to occur over long time periods. Losses payable under these policies are normally expected to exceed premiums and therefore, produce underwriting losses. This business is accepted, in part, because of the large amounts of policyholder funds (float) generated for investment, the economic benefit of which will be reflected through investment results in future periods.

In 2014, NICO entered into a reinsurance contract with Liberty Mutual Insurance Company (LMIC). Under the agreement, NICO reinsures substantially all of LMIC's unpaid losses and allocated loss adjustment expense liabilities related to (a) asbestos and environmental claims from policies incepting prior to 2005, and (b) workers' compensation claims occurrences arising prior to January 1, 2014, subject to an aggregate retention of approximately \$12.5 billion and subject to an aggregate limit of \$6.5 billion.

In January 2017, NICO entered into a retroactive reinsurance agreement with various subsidiaries of American International Group, Inc. (collectively, AIG). Under the agreement, NICO agreed to indemnify AIG for 80% of up to \$25 billion, excess of \$25 billion retained by AIG, of losses and allocated loss adjustment expenses with respect to certain commercial insurance loss events occurring in years prior to 2016 for a premium of about \$10 billion.

BHLN writes periodic payment annuity insurance policies and reinsures existing annuity-like obligations. Under these policies, it receives upfront premiums and makes a stream of annuity payments in the future and payment streams often extend for decades. Similar to retroactive reinsurance contracts, time-value-of-money concepts are an important factor in establishing such premiums and underwriting losses are expected from the periodic accretion of time-value discounted liabilities. BHLN also writes reinsurance covering various forms of traditional life insurance. BHLN and its affiliates have also periodically reinsured certain guaranteed minimum death, income, and similar benefit coverages on closed-blocks of variable annuity reinsurance contracts.

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Berkshire Hathaway Primary Group The Berkshire Hathaway Primary Group (BH Primary) is a collection of independently managed primary insurance operations that provide a wide variety of insurance coverages to policyholders located principally in the United States. These various operations are discussed below.

NICO and certain affiliates (NICO Primary) underwrite motor vehicle and general liability insurance to commercial enterprises on both an admitted and excess and surplus basis. This business is written nationwide primarily through insurance agents and brokers and is based in Omaha, Nebraska.

The Berkshire Hathaway Homestate Companies (BHHC) is a group of insurers offering standalone workers compensation, commercial auto and commercial property coverages. BHHC has developed a national reach, with the ability to provide first-dollar and small to large deductible workers compensation coverage to employers in all states, except those where coverage is available only through state operated workers compensation funds. The volume of workers compensation business written in recent years has grown significantly. BHHC serves a diverse client base. BHHC s business is generated primarily through independent agents and brokers.

MedPro Group (MedPro) is a national leader in offering customized healthcare liability insurance, claims, patient safety and risk solutions to physicians, surgeons, dentists and other healthcare professionals, as well as hospitals, senior care and other healthcare facilities. MedPro has provided insurance coverage to protect healthcare providers against losses since 1899. Its insurance policies are distributed primarily through a nationwide network of appointed agents and brokers. MedPro recently began offering coverage options to healthcare providers in the United Kingdom, France and Singapore, as well as reinsurance options related to student health insurance programs.

U.S. Investment Corporation (USIC) and its subsidiaries are specialty insurers that underwrite commercial, professional and personal lines of insurance on an admitted and excess and surplus basis. Policies are marketed in all 50 states and the District of Columbia through wholesale and retail insurance agents. USIC companies underwrite and market a wide variety of specialty insurance products.

Applied Underwriters, Inc. (Applied) is a leading provider of payroll and insurance services to small and mid-sized employers. Applied, through its subsidiaries principally markets a product that bundles workers compensation and other employment related insurance coverages and business services into a seamless package that is designed to reduce the risks and remove the burden of administrative and regulatory requirements faced by small to mid-sized employers. Applied also markets a workers compensation product with a profit sharing component targeted to medium-sized employers.

WestGUARD Insurance Company and its subsidiaries (collectively, the Berkshire Hathaway GUARD Insurance Companies) provides commercial property and casualty insurance coverage to small and mid-sized businesses and is based in Wilkes-Barre, Pennsylvania. Central States Indemnity Company of Omaha, based in Omaha, Nebraska, primarily writes Medicare Supplement insurance and credit insurance.

Berkshire Hathaway Specialty Insurance (BH Specialty) was formed in April 2013. BH Specialty provides primary and excess commercial property, casualty, healthcare professional liability, executive and professional lines, surety and travel insurance and other insurance. BH Specialty writes business on both an excess and surplus lines basis and an admitted basis in the U.S., and on a locally admitted basis outside the U.S. BH Specialty is based in Boston, Massachusetts, with regional offices currently in several cities in the U. S. and international offices in Australia, New Zealand, Hong Kong, Singapore, Canada, Germany, United Kingdom and Macau. BH Specialty currently intends to further expand its operations. BH Specialty writes business through wholesale and retail insurance brokers, as well as managing general agents.

Property and casualty loss liabilities

Berkshire s property and casualty insurance companies establish liabilities for estimated unpaid losses and loss adjustment expenses with respect to claims occurring on or before the balance sheet date. Such estimates include provisions for reported claims or case estimates, provisions for incurred-but-not-reported claims and legal and administrative costs to settle claims. The estimates of unpaid losses and amounts recoverable under reinsurance are established and continually reviewed by using a variety of actuarial, statistical and analytical techniques. Reference is made to Note 14 to the Consolidated Financial Statements included in Item 8 and Critical Accounting Policies, included in Item 7 of this Report.

Investments Invested assets of insurance businesses derive from shareholder capital as well as funds provided from policyholders through insurance and reinsurance business (float). Float is the approximate amount of net policyholder funds generated through underwriting activities that is available for investment. The major components of float are unpaid losses and

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loss adjustment expenses, life, annuity and health benefit liabilities, unearned premiums and other policyholder liabilities less premium and reinsurance receivables, deferred policy acquisition costs and deferred charges on reinsurance contracts. On a consolidated basis, float has grown from approximately \$70 billion at the end of 2011 to approximately \$91 billion at the end of 2016, primarily through internal growth. BHRG and General Re accounted for approximately 69% of the consolidated float as of December 31, 2016. Over the past five years, Berkshire's cost of float was negative, as insurance businesses produced net underwriting gains.

Investments of insurance subsidiaries include a very large portfolio of publicly-traded equity securities, which are concentrated in relatively few issuers, as well as fixed maturity securities and cash and short-term investments. Investment portfolios are primarily managed by Berkshire's corporate headquarters. Generally, there are no targeted investment allocation rates established by management with respect to investment activities. However, investment portfolios have historically included a much greater proportion of equity investments than is customary in the insurance industry.

Railroad Business Burlington Northern Santa Fe

Burlington Northern Santa Fe, LLC (BNSF) is based in Fort Worth, Texas, and through BNSF Railway Company operates one of the largest railroad systems in North America. BNSF had approximately 42,000 employees at the end of 2016.

In serving the Midwest, Pacific Northwest, Western, Southwestern and Southeastern regions and ports of the United States, BNSF transports a range of products and commodities derived from manufacturing, agricultural and natural resource industries. Over half of freight revenues are covered by contractual agreements of varying durations, while the balance is subject to common carrier published prices or quotations offered by BNSF. BNSF's financial performance is influenced by, among other things, general and industry economic conditions at the international, national and regional levels. BNSF's primary routes, including trackage rights, allow it to access major cities and ports in the western and southern United States as well as parts of Canada and Mexico. In addition to major cities and ports, BNSF efficiently serves many smaller markets by working closely with approximately 200 shortline railroads. BNSF has also entered into marketing agreements with other rail carriers, expanding the marketing reach for each railroad and their customers. For the year ending December 31, 2016, approximately 35% of freight revenues were derived from consumer products, 25% from industrial products, 22% from agricultural products and 18% from coal.

Regulatory Matters

BNSF is subject to federal, state and local laws and regulations generally applicable to all of its businesses. Rail operations are subject to the regulatory jurisdiction of the Surface Transportation Board (STB) of the United States Department of Transportation (DOT), the Federal Railroad Administration of the DOT, the Occupational Safety and Health Administration (OSHA), as well as other federal and state regulatory agencies and Canadian regulatory agencies for operations in Canada. The STB has jurisdiction over disputes and complaints involving certain rates, routes and services, the sale or abandonment of rail lines, applications for line extensions and construction, and the merger with or acquisition of control of rail common carriers. The outcome of STB proceedings can affect the profitability of BNSF's business.

The DOT and OSHA have jurisdiction under several federal statutes over a number of safety and health aspects of rail operations, including the transportation of hazardous materials. State agencies regulate some aspects of rail operations with respect to health and safety in areas not otherwise preempted by federal law. BNSF Railway is required to transport these commodities to the extent of its common carrier obligation.

Environmental Matters

BNSF's rail operations, as well as those of its competitors, are also subject to extensive federal, state and local environmental regulation covering discharges to water, air emissions, toxic substances and the generation, handling, storage, transportation and disposal of waste and hazardous materials. This regulation has the effect of increasing the cost and liabilities associated with rail operations. Environmental risks are also inherent in rail operations, which frequently involve transporting chemicals and other hazardous materials.

Many of BNSF's land holdings are and have been used for industrial or transportation-related purposes or leased to commercial or industrial companies whose activities may have resulted in discharges onto the property. As a result, BNSF is now subject to, and will from time to time continue to be subject to, environmental cleanup and enforcement actions. In particular, the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as

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the Superfund law, generally imposes joint and several liabilities for the cleanup and enforcement costs on current and former owners and operators of a site, without regard to fault or the legality of the original conduct. Accordingly, BNSF may be responsible under CERCLA and other federal and state statutes for all or part of the costs to clean up sites at which certain substances may have been released by BNSF, its current lessees, former owners or lessees of properties, or other third parties. BNSF may also be subject to claims by third parties for investigation, cleanup, restoration or other environmental costs under environmental statutes or common law with respect to properties they own that have been impacted by BNSF operations.

Competition

The business environment in which BNSF operates is highly competitive. Depending on the specific market, deregulated motor carriers and other railroads, as well as river barges, ships and pipelines in certain markets, may exert pressure on price and service levels. The presence of advanced, high service truck lines with expedited delivery, subsidized infrastructure and minimal empty mileage continues to affect the market for non-bulk, time-sensitive freight. The potential expansion of longer combination vehicles could further encroach upon markets traditionally served by railroads. In order to remain competitive, BNSF and other railroads seek to develop and implement operating efficiencies to improve productivity.

As railroads streamline, rationalize and otherwise enhance their franchises, competition among rail carriers intensifies. BNSF's primary rail competitor in the Western region of the United States is the Union Pacific Railroad Company. Other Class I railroads and numerous regional railroads and motor carriers also operate in parts of the same territories served by BNSF. Based on weekly reporting by the Association of American Railroads, BNSF's share of the western United States rail traffic in 2016 was approximately 50.1%.

Utilities and Energy Businesses Berkshire Hathaway Energy

Berkshire currently owns approximately 90% of the outstanding common stock of Berkshire Hathaway Energy Company (or BHE). BHE is a global energy company with subsidiaries that generate, transmit, store, distribute and supply energy. BHE's businesses are managed as separate operating units. BHE's domestic regulated energy interests are comprised of four regulated utility companies serving approximately 4.7 million retail customers, two interstate natural gas pipeline companies with approximately 16,400 miles of pipeline and a design capacity of approximately 7.9 billion cubic feet of natural gas per day and ownership interests in electricity transmission businesses. BHE's Great Britain electricity distribution subsidiaries serve about 3.9 million electricity end-users and its electricity transmission-only business in Alberta, Canada serves approximately 85% of Alberta, Canada's population. BHE's interests also include a diversified portfolio of independent power projects, the second-largest residential real estate brokerage firm in the United States, and one of the largest residential real estate brokerage franchise networks in the United States. BHE employs approximately 21,000 people in connection with its various operations.

General Matters

PacifiCorp is a regulated electric utility company headquartered in Oregon, serving electric customers in portions of Utah, Oregon, Wyoming, Washington, Idaho and California. The combined service territory's diverse regional economy ranges from rural, agricultural and mining areas to urban, manufacturing and government service centers. No single segment of the economy dominates the combined service territory, which helps mitigate PacifiCorp's exposure to economic fluctuations. In addition to retail sales, PacifiCorp sells electricity on a wholesale basis.

MidAmerican Energy Company (MEC) is a regulated electric and natural gas utility company headquartered in Iowa, serving electric and natural gas customers primarily in Iowa and also in portions of Illinois, South Dakota and Nebraska. MEC has a diverse customer base consisting of urban and rural residential customers and a variety of commercial and industrial customers. In addition to retail sales and natural gas transportation, MEC sells electricity principally to markets operated by regional transmission organizations and natural gas on a wholesale basis.

NV Energy, Inc. (NV Energy), acquired by BHE on December 19, 2013, is an energy holding company headquartered in Nevada, primarily consisting of two regulated utility subsidiaries, Nevada Power Company (Nevada Power) and Sierra Pacific Power Company (Sierra Pacific) (collectively, the Nevada Utilities). Nevada Power serves electric customers in southern Nevada and Sierra Pacific serves electric and natural gas customers in northern Nevada. The Nevada Utilities' combined service territory's economy includes gaming, mining, recreation, warehousing, manufacturing and governmental services. In addition to retail sales and natural gas transportation, the Nevada Utilities sell electricity and natural gas on a wholesale basis.

As vertically integrated utilities, BHE's domestic utilities own approximately 27,600 net megawatts of generation capacity in operation and under construction. There are seasonal variations in these businesses that are principally related to the use of

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electricity for air conditioning and natural gas for heating. Typically, regulated electric revenues are higher in the summer months, while regulated natural gas revenues are higher in the winter months.

The Great Britain utilities consist of Northern Powergrid (Northeast) Limited and Northern Powergrid (Yorkshire) plc, which own a substantial electricity distribution network that delivers electricity to end-users in northeast England in an area covering approximately 10,000 square miles. The distribution companies primarily charge supply companies regulated tariffs for the use of their distribution systems.

BHE acquired AltaLink L.P. (AltaLink) on December 1, 2014. AltaLink is a regulated electric transmission-only utility company headquartered in Calgary, Alberta. AltaLink connects generation plants to major load centers, cities and large industrial plants throughout its 87,000 square mile service territory. AltaLink receives all of its regulated transmission tariffs from the Alberta Electric System Operator (AESO) based on tariffs approved by the Alberta Utilities Commission (AUC).

The natural gas pipelines consist of Northern Natural Gas Company (Northern Natural) and Kern River Gas Transmission Company (Kern River). Northern Natural, based in Nebraska, owns the largest interstate natural gas pipeline system in the United States, as measured by pipeline miles, reaching from west Texas to Michigan's Upper Peninsula. Northern Natural's pipeline system consists of approximately 14,700 miles of natural gas pipelines. Northern Natural's extensive pipeline system, which is interconnected with many interstate and intrastate pipelines in the national grid system, has access to supplies from multiple major supply basins and provides transportation services to utilities and numerous other customers. Northern Natural also operates three underground natural gas storage facilities and two liquefied natural gas storage peaking units. Northern Natural's pipeline system experiences significant seasonal swings in demand and revenue, with the highest demand typically occurring during the months of November through March.

Kern River, based in Utah, owns an interstate natural gas pipeline system that consists of approximately 1,700 miles and extends from supply areas in the Rocky Mountains to consuming markets in Utah, Nevada and California. Kern River transports natural gas for electric and natural gas distribution utilities, major oil and natural gas companies or affiliates of such companies, electric generating companies, energy marketing and trading companies, and financial institutions.

BHE Renewables is based in Iowa and owns interests in independent power projects having approximately 4,000 net megawatts of generation capacity that are in service or under construction in California, Illinois, Nebraska, Texas, New York, Arizona, Minnesota, Kansas, Hawaii and the Philippines. These independent power projects sell power generated primarily from solar, wind, geothermal and hydro sources under long-term contracts.

Regulatory Matters

PacifiCorp, MEC and the Nevada Utilities are subject to comprehensive regulation by various federal, state and local agencies. The Federal Energy Regulatory Commission (FERC) is an independent agency with broad authority to implement provisions of the Federal Power Act, the Natural Gas Act, the Energy Policy Act of 2005 and other federal statutes. The FERC regulates rates for wholesale sales of electricity; transmission of electricity, including pricing and regional planning for the expansion of transmission systems; electric system reliability; utility holding companies; accounting and records retention; securities issuances; construction and operation of hydroelectric facilities; and other matters. The FERC also has the enforcement authority to assess civil penalties of up to \$1.2 million per day per violation of rules, regulations and orders issued under the Federal Power Act. MEC is also subject to regulation by the Nuclear Regulatory Commission pursuant to the Atomic Energy Act of 1954, as amended, with respect to its 25% ownership of the Quad Cities Nuclear Station.

With certain limited exceptions, BHE's domestic utilities have an exclusive right to serve retail customers within their service territories and, in turn, have an obligation to provide service to those customers. In some jurisdictions, certain classes of customers may choose to purchase all or a portion of their energy from alternative energy suppliers, and in some jurisdictions retail customers can generate all or a portion of their own energy. Historically, state regulatory commissions have established retail electric and natural gas rates on a cost-of-service basis, which are designed to allow a utility an opportunity to recover what each state regulatory commission deems to be the utility's reasonable costs of providing services, including a fair opportunity to earn a reasonable return on its investments based on its cost of debt and equity. The retail electric rates of PacifiCorp, MEC and the Nevada Utilities are generally based on the cost of providing traditional bundled services, including generation, transmission and distribution services.

Northern Powergrid (Northeast) and Northern Powergrid (Yorkshire) each charge fees for the use of their distribution systems that are controlled by a formula prescribed by the British electricity regulatory body, the Gas and Electricity Markets Authority. The current eight-year price control period runs from April 1, 2015 through March 31, 2023.

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AltaLink is regulated by the AUC, pursuant to the Electric Utilities Act (Alberta), the Public Utilities Act (Alberta), the Alberta Utilities Commission Act (Alberta) and the Hydro and Electric Energy Act (Alberta). The AUC is an independent quasi-judicial agency with broad authority that may impact many of AltaLink's activities, including its tariffs, rates, construction, operations and financing. Under the Electric Utilities Act, AltaLink prepares and files applications with the AUC for approval of tariffs to be paid by the AESO for the use of its transmission facilities, and the terms and conditions governing the use of those facilities. The AESO is the independent system operator in Alberta, Canada that oversees Alberta's integrated electrical system (AIES) and wholesale electricity market. The AESO is responsible for directing the safe, reliable and economic operation of the AIES, including long-term transmission system planning.

The natural gas pipelines are subject to regulation by various federal, state and local agencies. The natural gas pipeline and storage operations of Northern Natural and Kern River are regulated by the FERC pursuant to the Natural Gas Act and the Natural Gas Policy Act of 1978. Under this authority, the FERC regulates, among other items, (a) rates, charges, terms and conditions of service and (b) the construction and operation of interstate pipelines, storage and related facilities, including the extension, expansion or abandonment of such facilities. Interstate natural gas pipeline companies are also subject to regulations administered by the Office of Pipeline Safety within the Pipeline and Hazardous Materials Safety Administration, an agency within the DOT. Federal pipeline safety regulations are issued pursuant to the Natural Gas Pipeline Safety Act of 1968, as amended, which establishes safety requirements in the design, construction, operation and maintenance of interstate natural gas pipeline facilities.

Environmental Matters

BHE and its energy businesses are subject to federal, state, local and foreign laws and regulations regarding air and water quality, renewable portfolio standards, emissions performance standards, climate change, coal combustion byproduct disposal, hazardous and solid waste disposal, protected species and other environmental matters that have the potential to impact current and future operations. In addition to imposing continuing compliance obligations, these laws and regulations, such as the Federal Clean Air Act, provide regulators with the authority to levy substantial penalties for noncompliance, including fines, injunctive relief and other sanctions.

The Federal Clean Air Act, as well as state laws and regulations impacting air emissions, provides a framework for protecting and improving the nation's air quality and controlling sources of air emissions. These laws and regulations continue to be promulgated and implemented and will impact the operation of BHE's generating facilities and require them to reduce emissions at those facilities to comply with the requirements.

Renewable portfolio standards have been established by certain state governments and generally require electricity providers to obtain a minimum percentage of their power from renewable energy resources by a certain date. Utah, Oregon, Washington, California, Iowa and Nevada have adopted renewable portfolio standards. In addition, the potential adoption of state or federal clean energy standards, which include low-carbon, non-carbon and renewable electricity generating resources, may also impact electricity generators and natural gas providers.

In December 2015, an international agreement was negotiated by 195 nations to create a universal framework for coordinated action on climate change in what is referred to as the Paris Agreement. The Paris Agreement reaffirms the goal of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees Celsius; establishes commitments by all parties to make nationally determined contributions and pursue domestic measures aimed at achieving the commitments; commits all countries to submit emissions inventories and report regularly on their emissions and progress made in implementing and achieving their nationally determined commitments; and commits all countries to submit new commitments every five years, with the expectation that the commitments will get more aggressive. In the context of the Paris Agreement, the United States agreed to reduce greenhouse gas emissions 26% to 28% by 2025 from 2005 levels. The Paris Agreement formally entered into force November 4, 2016.

Supporting the United States' commitment under the Paris Agreement is the Clean Power Plan, finalized by the U.S. Environmental Protection Agency (EPA) in August 2015. The Clean Power Plan established the Best System of Emission Reduction for fossil-fueled power plants to include: (a) heat rate improvements; (b) increased utilization of existing combined-cycle natural gas-fueled generating facilities; and (c) increased deployment of new and incremental non-carbon generation placed in service after 2012. Applying the Best System of Emission Reduction, the EPA established uniform subcategory specific emission performance rates of 771 pounds per megawatt hour for natural gas combined cycle units and 1,305 pounds per megawatt hour for coal-fueled generating units and utilized these emission rates to establish the applicable state-by-state emission rates. The final Clean Power Plan compliance obligations begin in 2022, and extend through 2030. When fully

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implemented the rule would achieve an overall reduction in carbon dioxide emissions from existing fossil-fueled electric generating units of 32% below 2005 levels. The final Clean Power Plan provides states the option to implement rate-based plans that limit the pounds per megawatt hour their affected generating units can emit or mass-based plans that limit the total tons of emissions from affected sources as well as to allow their affected units to engage in emission trading in either a mass- or rate-based plan. States were required under the final rule to submit initial plans to the EPA by September 6, 2016. However, on February 9, 2016, the United States Supreme Court ordered that the EPA's emission guidelines for existing sources be stayed pending the disposition of the challenges to the rule in the D.C. Circuit Court of Appeals and any action on a writ of certiorari before the United States Supreme Court. The case has been fully briefed and oral argument was held before the D.C. Circuit Court of Appeals on September 27, 2016; the court has not yet issued its decision. The full impacts of the final rule or the federal plan on BHE and its energy subsidiaries cannot be determined until the outcome of the pending litigation and subsequent appeals, the outcome of any issues should the case be remanded for further action by the EPA, the development and implementation of state plans, and finalization of the federal plan.

BHE continues to take actions to mitigate greenhouse gas emissions. For example, as of December 31, 2016, BHE has invested \$19 billion in solar, wind, geothermal and biomass generation.

Non-Energy Businesses

BHE also owns HomeServices of America, Inc. (HomeServices), the second-largest residential real estate brokerage firm in the United States. In addition to providing traditional residential real estate brokerage services, HomeServices offers other integrated real estate services, including mortgage originations and mortgage banking, title and closing services, property and casualty insurance, home warranties, relocation services and other home-related services. It operates under 38 brand names with over 29,000 agents in nearly 540 brokerage offices in 28 states.

In October 2012, HomeServices acquired a 66.7% interest in one of the largest residential real estate brokerage franchise networks in the United States, which offers and sells independently owned and operated residential real estate brokerage franchises. HomeServices' franchise network currently includes over 375 franchisees in over 1,500 brokerage offices in 47 states with over 46,000 agents under three brand names. In exchange for certain fees, HomeServices provides the right to use the Berkshire Hathaway HomeServices, Prudential or Real Living brand names and other related service marks, as well as providing orientation programs, training and consultation services, advertising programs and other services.

HomeServices' principal sources of revenue are dependent on residential real estate sales, which are generally higher in the second and third quarters of each year. This business is highly competitive and subject to the general real estate market conditions.

Manufacturing Businesses

Berkshire's numerous and diverse manufacturing businesses are grouped into three categories: (1) industrial products, (2) building products and (3) consumer products. Berkshire's industrial products businesses manufacture specialty chemicals, metal cutting tools, components for aerospace and power generation applications and a variety of other products primarily for industrial use. The building products group produces flooring products, insulation, roofing and engineered products, building and engineered components, paint and coatings and bricks and masonry products that are primarily used in building and construction applications. The consumer products group manufactures recreational vehicles, alkaline batteries, various apparel products, jewelry and custom picture framing products. Information concerning these activities follows.

Industrial products

Lubrizol Corporation

The Lubrizol Corporation (Lubrizol) is a specialty chemical company that produces and supplies technologies for the global transportation, industrial, oilfield and consumer markets. Lubrizol currently operates in two business sectors: (1) Lubrizol Additives, which includes engine additives, driveline additives and industrial specialties products; and (2) Lubrizol Advanced Materials, which includes personal and home care, engineered polymers, performance coatings, and life science solutions.

Lubrizol's products are used in a broad range of applications including engine oils, transmission fluids, gear oils, specialty driveline lubricants, fuel additives, refineries and oilfields, pipelines, metalworking fluids, compressor lubricants, greases for transportation and industrial applications, over-the-counter pharmaceutical products, performance coatings, personal care products, sporting goods and plumbing and fire sprinkler systems. Lubrizol is an industry leader in many of the markets in

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which it competes. Its principal lubricant additives competitors are Infineum International Ltd., Chevron Oronite Company and Afton Chemical Corporation. The advanced materials industry is highly fragmented with a variety of competitors in each product line. Principal oilfield chemicals competitors include Nalco Energy Services, Baker Hughes Inc., Schlumberger Ltd., and Halliburton Company.

From a base of approximately 3,240 patents, Lubrizol uses its technological leadership position in product development and formulation expertise to improve the quality, value and performance of its products, as well as to help minimize the environmental impact of those products. Lubrizol uses many specialty and commodity chemical raw materials in its manufacturing processes and uses base oil in processing and blending additives. Raw materials are primarily feedstocks derived from petroleum and petrochemicals and, generally, are obtainable from several sources. The materials that Lubrizol chooses to purchase from a single source typically are subject to long-term supply contracts to ensure supply reliability. Lubrizol operates facilities in 32 countries (including production facilities in 19 countries and laboratories in 15 countries).

Lubrizol markets its products worldwide through a direct sales organization and sales agents and distributors. Lubrizol's customers principally consist of major global and regional oil companies and industrial and consumer products companies that are located in more than 120 countries. Some of its largest customers also may be suppliers. In 2016, no single customer accounted for more than 10% of Lubrizol's consolidated revenues. Lubrizol continues to implement a multi-year phased investment plan to upgrade operations, ensure compliance with health, safety and environmental requirements and increase global manufacturing capacity.

Lubrizol is subject to foreign, federal, state and local laws to protect the environment and limit manufacturing waste and emissions. The company believes that its policies, practices and procedures are designed to limit the risk of environmental damage and consequent financial liability. Nevertheless, the operation of manufacturing plants entails ongoing environmental risks, and significant costs or liabilities could be incurred in the future.

IMC International Metalworking Companies

Berkshire acquired an 80% interest in IMC International Metalworking Companies B.V. (IMC) in 2006. On April 29, 2013, Berkshire acquired the remaining 20% noncontrolling interests of IMC. Through its subsidiaries, IMC is one of the world's three largest multinational manufacturers of consumable precision carbide metal cutting tools for applications in a broad range of industrial end markets. IMC's principal brand names include ISCAR®, TaeguTec®, Ingersoll®, Tungaloy®, Unitac®, UOP®, It.te.di®, Tool Flo® and Outiltec®. IMC's manufacturing facilities are located mainly in Israel, United States, Germany, Italy, France, Switzerland, South Korea, China, India, Japan and Brazil.

IMC has five primary product lines: milling tools, gripping tools, turning/thread tools, drilling tools and tooling. The main products are split within each product line between consumable cemented tungsten carbide inserts and steel tool holders. Inserts comprise the vast majority of sales and earnings. Metal cutting inserts are used by industrial manufacturers to cut metals and are consumed during their use in cutting applications. IMC manufactures hundreds of types of highly engineered inserts within each product line that are tailored to maximize productivity and meet the technical requirements of customers. IMC's staff of scientists and engineers continuously develop and innovate products that address its end user's needs and requirements.

IMC's global sales and marketing network has representatives in virtually every major manufacturing center around the world staffed with highly skilled engineers and technical personnel. IMC's customer base is very diverse, with its primary customers being large, multinational businesses in the automotive, aerospace, engineering and machinery industries. IMC operates a regional central warehouse system with locations in Israel, United States, Belgium, Korea, Japan and Brazil. Additional small quantities of products are maintained at local IMC offices in order to provide on-time customer support and inventory management.

IMC competes in the metal cutting tools segment of the global metalworking tools market. The segment includes hundreds of participants who range from small, private manufacturers of specialized products for niche applications and markets to larger, global multinational businesses (such as Sandvik and Kennametal, Inc.) with a wide assortment of products and extensive distribution networks. Other manufacturing companies such as Kyocera, Mitsubishi, Sumitomo and Korloy also play a significant role in the cutting tool market.

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Precision Castparts

Berkshire acquired Precision Castparts Corp. (PCC) on January 29, 2016. PCC manufactures complex metal components and products, provides high-quality investment castings, forgings, fasteners/fastener systems and aerostructures for critical aerospace and power and energy applications. PCC also provides seamless pipe for coal-fired, industrial gas turbine (IGT) and nuclear power plants; downhole casing, clad pipe, fittings and various mill forms in a variety of nickel and steel alloys for severe-service oil and gas environments; investment castings and forgings for general industrial, armament, medical and other applications; nickel and titanium alloys in all standard mill forms from large ingots and billets to plate, foil, sheet, strip, tubing, bar, rod, extruded shapes, rod-in-coil, wire and welding consumables, as well as cobalt alloys, for the aerospace, chemical processing, oil and gas, pollution control and other industries; revert management solutions; fasteners for automotive and general industrial markets; specialty alloys for the investment casting and forging industries; heat treating and destructive testing services for the investment cast products and forging industries; refiner plates, screen cylinders and other products for the pulp and paper industry; grinder pumps and affiliated components for low-pressure sewer systems; critical auxiliary equipment and gas monitoring systems for the power generation industry; and metalworking tools for the fastener market and other applications.

Investment casting technology involves a multi-step process that uses ceramic molds in the manufacture of metal components with more complex shapes, closer tolerances and finer surface finishes than parts manufactured using other casting methods. PCC uses this process to manufacture products for aircraft engines, IGT and other aeroderivative engines, airframes, medical implants, armament, unmanned aerial vehicles and other industrial applications. PCC also manufactures high temperature carbon and ceramic composite components, including ceramic matrix composites, for use in next-generation aerospace engines.

PCC uses forging processes to manufacture components for the aerospace and power generation markets, including seamless pipe for coal-fired, industrial gas turbine and nuclear power plants, and downhole casings and clad pipe for severe service oil and gas markets. PCC manufactures high-performance, nickel-based alloys used to produce forged components for aerospace and non-aerospace applications in such markets as oil and gas, chemical processing and pollution control. The titanium products are used to manufacture components for the commercial and military aerospace, power generation, energy, and industrial end markets.

PCC is also a leading developer and manufacturer of highly engineered fasteners, fastener systems, aerostructures and precision components, primarily for critical aerospace applications. These products are produced for the aerospace and power and energy markets, as well as for construction, automotive, heavy truck farm machinery, mining and construction equipment, shipbuilding, machine tools, medical equipment, appliances and recreation markets.

The majority of sales to customers are individual purchase orders generated from long-term agreements. Most orders are subject to termination by the customer upon payment of the cost of work in process, plus a related profit factor. PCC typically does not experience significant order cancellations, although periodically it receives requests for delays in delivery schedules.

PCC is subject to substantial competition in all of its markets. Components and similar products may be produced by competitors using either the same types of manufacturing processes or other forms of manufacturing. Although PCC believes its manufacturing processes, technology and experience provide advantages to its customers, such as high quality, competitive prices and physical properties that often meet more stringent demands, alternative forms of manufacturing can be used to produce many of the same components and products. Despite intense competition, PCC is a leading supplier in most of its principal markets. Several factors, including long-standing customer relationships, technical expertise, state-of-the-art facilities and dedicated employees, aid PCC in maintaining competitive advantages.

A number of raw materials in its products, including certain metals such as nickel, titanium, cobalt, tantalum and molybdenum, are found in only a few parts of the world. These metals are required for the alloys used in manufactured products. The availability and costs of these metals may be influenced by private or governmental cartels, changes in world politics, labor relations between the metal producers and their work forces, and/or unstable governments in exporting nations and inflation.

Marmon Holdings

Berkshire currently owns 99.75% of Marmon Holdings, Inc. (Marmon), a holding company comprised of four autonomous companies consisting of fifteen diverse business sectors and approximately 175 independent manufacturing and service businesses. Marmon operates approximately 370 manufacturing, distribution and service facilities, which are located

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primarily in the United States, as well as in 22 other countries worldwide. Marmon's transportation equipment manufacturing, repair and leasing businesses (UTLX Company) discussed in the Finance and Financial Products businesses section of this Item. Marmon's other diversified manufacturing and service