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 JUNE 30, 2019

Commission File Number 1-5318

KENNAMETAL INC.

(Exact name of registrant as specified in its charter)

Pennsylvania	**25-0900168**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

600 Grant Street	
Suite 5100	
Pittsburgh, Pennsylvania	**15219-2706**
(Address of Principal Executive Offices)	(Zip Code)

Registrant’s telephone number, including area code: **(412) 248-8000**
Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Trading Symbol**	**Name of each exchange on which registered**
Capital Stock, par value $1.25 per share	KMT	New York Stock Exchange
Preferred Stock Purchase Rights		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 [X] 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 [X]
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 [X] 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 [X] 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 [X]	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 by Rule 12b-2 of the Exchange Act). Yes [ ] No [X]

As of December 31, 2018, the aggregate market value of the registrant’s Capital Stock held by non-affiliates of the registrant, estimated solely for the purposes of this Form 10-K, was approximately $1,833,100,000. For purposes of the foregoing calculation only, all directors and executive officers of the registrant and each person who may be deemed to own beneficially more than 5% of the registrant’s Capital Stock have been deemed affiliates.

As of July 31, 2019, there were 82,462,011 of the Registrant’s Capital Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE
Portions of the Proxy Statement for the 2019 Annual Meeting of Shareholders are incorporated by reference into Part III.

Table of Contents

Item No.		Page
PART I		
1	Business	4
1A.	Risk Factors	7
1B.	Unresolved Staff Comments	11
2.	Properties	11
3.	Legal Proceedings	12
4.	Mine Safety Disclosures	12
PART II		
5.	Market for the Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	12
6.	Selected Financial Data	15
7.	Management’s Discussion and Analysis of Financial Condition and Results of Operations	16
7A.	Quantitative and Qualitative Disclosures About Market Risk	30
8.	Financial Statements and Supplementary Data	32
9.	Changes in and Disagreements With Accountants on Accounting and Financial Disclosure	69
9A.	Controls and Procedures	69
9B.	Other Information	70
PART III		
10.	Directors, Executive Officers and Corporate Governance	71
11.	Executive Compensation	72
12.	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	72
13.	Certain Relationships and Related Transactions, and Director Independence	72
14.	Principal Accounting Fees and Services	72
SIGNATURES		73
PART IV		
15.	Exhibits, Financial Statement Schedules	74
16.	Form 10-K Summary	79

FORWARD-LOOKING INFORMATION

Statements and financial discussion and analysis contained herein and in the documents incorporated by reference herein that are not historical facts are "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). For example, statements about Kennametal's outlook for earnings, sales volumes, cash flow, and capital expenditures for its fiscal year 2020 and 2021, its expectations regarding future growth and any statements regarding future operating or financial performance or events are forward-looking. We have also included forward-looking statements in this Annual Report on Form 10-K ("Annual Report") concerning, among other things, our strategy, goals, plans and projections regarding our financial position, liquidity and capital resources, results of operations, market position, and product development. Forward-looking statements are based on management's beliefs, assumptions and estimates using information available to us at the time the statements are made. These statements are not guarantees of future events or performance and are subject to various risks and uncertainties that are difficult to predict. Should one or more of these risks or uncertainties materialize, or should the assumptions underlying the forward-looking statements prove incorrect, our actual results could vary materially from our current expectations. There are a number of factors that could cause our actual results to differ from those indicated in the forward-looking statements. They include: downturns in the business cycle or economic downturns; our ability to achieve all anticipated benefits from our restructuring, simplification and modernization initiatives; risks related to our foreign operations and international markets, such as fluctuations in currency exchange rates, different regulatory environments, trade barriers, exchange controls, and social and political instability; changes in the regulatory environment in which we operate, including environmental, health and safety regulations; potential for future goodwill and other intangible asset impairment charges; our ability to protect and defend our intellectual property; continuity and security of information technology infrastructure; competition; our ability to retain our management and employees; demands on management resources; availability and cost of the raw materials we use to manufacture our products; additional tax expenses or exposures; product liability claims; integrating acquisitions and achieving the expected savings and synergies; global or regional catastrophic events; demand for and market acceptance of our products; business divestitures; labor relations; and implementation of environmental remediation matters. We provide additional information about many of the specific risks we face in the "Risk Factors" section of this Annual Report. We can give no assurance that any goal or plan set forth in our forward-looking statements will be achieved and readers are cautioned not to place undue reliance on such statements, which speak only as of the date made. Except as required by law, we do not intend to release publicly any revisions to forward-looking statements as a result of future events or developments.

PART I

ITEM 1 - BUSINESS

OVERVIEW Kennametal Inc. (the Company) was founded based on a tungsten carbide technology breakthrough in 1938. The Company was incorporated in Pennsylvania in 1943 as a manufacturer of tungsten carbide metal cutting tooling and was listed on the New York Stock Exchange (NYSE) in 1967. With more than 80 years of materials expertise, the Company is a global industrial technology leader, helping customers across the aerospace, earthworks, energy, general engineering and transportation end markets manufacture with precision and efficiency. This expertise includes the development and application of tungsten carbides, ceramics, super-hard materials and solutions used in metal cutting and extreme wear applications to keep customers up and running longer against conditions such as corrosion and high temperatures.

Our standard and custom product offering spans metalworking and wear applications including turning, milling, hole making, tooling systems and services, as well as specialized wear components and metallurgical powders. End users of the Company's metalworking products include manufacturers engaged in a diverse array of industries including: the manufacturers of transportation vehicles and components, machine tools and light and heavy machinery; airframe and aerospace components; and energy-related components for the oil and gas industry, as well as power generation. The Company’s wear and metallurgical powders are used by producers and suppliers in equipment-intensive operations such as road construction, mining, quarrying, oil and gas exploration, refining, production and supply.

Unless otherwise specified, any reference to a “year” refers to our fiscal year ending on June 30. Unless the context requires otherwise, the terms “we,” “our” and “us” refer to Kennametal Inc. and its subsidiaries.

BUSINESS SEGMENT REVIEW The Company operates in three segments: Industrial, Widia and Infrastructure. The Company's reportable operating segments have been determined in accordance with the Company's internal management structure, which is organized based on operating activities, the manner in which we organize segments for making operating decisions and assessing performance and the availability of separate financial results. Sales and operating income by segment are presented in Management’s Discussion and Analysis of Financial Condition and Results of Operations set forth in Item 7 of this Annual Report (MD&A). Additional segment data is provided in Note 19 of our consolidated financial statements set forth in Item 8 of this Annual Report which is incorporated herein by reference.

INDUSTRIAL The Industrial segment develops and manufactures high performance tooling and metalworking products and services for diverse end markets, including aerospace and defense, general engineering, energy and transportation. These products include milling, hole making, turning, threading and toolmaking systems used in the manufacture of airframes, aero engines, trucks and automobiles, ships and various types of industrial equipment. We leverage advanced manufacturing capabilities in combination with varying levels of customization to solve our customers’ toughest challenges and deliver improved productivity for a wide range of applications**.** Industrial goes to market under the Kennametal® brand through its direct sales force, a network of independent and national distributors, integrated supplier channels and via the internet. Application engineers and technicians are critical to the sales process and directly assist our customers with specified product design, selection, application and support.

WIDIA Widia offers an assortment of standard and custom metal cutting solutions to general engineering, aerospace, energy and transportation customers. We serve our customers primarily through a network of value added resellers, integrated supplier channels and via the internet. Widia markets its products under the WIDIA®, WIDIA Hanita® and WIDIA GTD® brands.

INFRASTRUCTURE Our Infrastructure segment produces engineered tungsten carbide and ceramic components, earth-cutting tools, and advanced metallurgical powders, primarily for the energy, earthworks and general engineering end markets. These wear-resistant products include compacts, nozzles, frac seats and custom components used in oil & gas and petrochemical industries; rod blanks and abrasive water jet nozzles for general industries; earth cutting tools and systems used in underground mining, trenching and foundation drilling and road milling; tungsten carbide and specialty alloy powders for the oil and gas, aerospace and process industries; and ceramics used by the packaging industry for metallization of films and papers. We combine deep metallurgical and engineering expertise with advanced manufacturing capabilities to deliver solutions that drive improved productivity for our customers. Infrastructure markets its products primarily under the Kennametal® brand and sells through a direct sales force as well as through distributors.

INTERNATIONAL OPERATIONS During 2019, we generated 57 percent of our consolidated sales in markets outside of the United States of America (U.S.), with principal international operations in Western Europe and Asia. We also operate manufacturing and distribution facilities in Israel, Latin America and South Africa, while serving customers through sales offices, agents and distributors in Eastern Europe and other parts of the world. While geographic diversification helps to minimize the sales and earnings effect of demand changes in any one particular region, our international operations are subject to normal risks of doing business globally, including fluctuations in currency exchange rates and changes in social, political and economic environments.

Our international assets and sales are presented in Note 19 of the Company's consolidated financial statements, set forth in Item 8 of this Annual Report. Further information about the effects and risks of currency exchange rates is presented in the Quantitative and Qualitative Disclosures About Market Risk section, set forth in Item 7A of this Annual Report.

STRATEGY AND GENERAL DEVELOPMENT OF BUSINESS We continued to make progress on our growth and simplification/modernization initiatives in the following areas in fiscal 2019.

Growth

- Continued development and refining of our channel strategy;
- Introduced new products across our business aimed at improving customer productivity and performance, including Harvi™ Ultra 8X, our new tangential milling system, KennaFlow hydraulic frac seats and Road King™ Xtreme; and
- Announced a new distribution agreement with Gardner Denver for KennaFlow valve seats

Simplification/modernization

- Substantially completed our previous phase (FY19 Restructuring Actions) of simplification/modernization restructuring initiative, and
- Announced FY20 and FY21 Restructuring Actions, which are expected to reduce structural costs, improve operational efficiency and position the Company for long-term profitable growth
    - Restructurings and proposed facility closures in fiscal 2020 are currently estimated to deliver annualized savings of $35 million to $40 million and $55 million to $65 million in pre-tax charges;
    - Fiscal 2021 proposed restructuring and facility closures expected to deliver annualized savings of $25 million to $30 million and pre-tax charges of $60 million to $75 million through fiscal 2020 and 2021

Operational results in 2019 reflected increasing progress on our simplification/modernization initiatives with earnings per diluted share (EPS) of $2.90, a 20 percent improvement over the prior year results. A key milestone of those initiatives was the recent announcement of the intended closure of four of our facilities, which is expected to drive further structural benefits and improve operational efficiency. Sales in 2019 of $2,375.2 million grew slightly compared to $2,367.9 million in 2018, reflecting a 3 percent increase from organic sales growth offset by unfavorable currency exchange effect of 3 percent. We also continued to gain traction on our growth initiatives in general engineering and aerospace, with aerospace growing 12 percent. Against this backdrop of year-over-year progress, we saw increased softening in most of our end-markets late in the year. Our expectation is that this challenging macro environment will continue into the first half of fiscal 2020. Nevertheless, we expect to continue executing our plan to improve long-term profitability.

ACQUISITIONS AND DIVESTITURES We continually evaluate new opportunities to expand existing product lines into new market areas, and to introduce new and/or complementary product offerings into new or existing areas where appropriate. In the near term, we expect to continue to grow our business and further enhance our market position through the investment opportunities that exist within our core businesses, though we may evaluate acquisition opportunities that have the potential to strengthen or expand our business.

RAW MATERIALS AND SUPPLIES Our major metallurgical raw materials consist of tungsten ore concentrates and scrap carbide, which are used to make tungsten oxide, as well as compounds and secondary materials such as cobalt. Although an adequate supply of these raw materials currently exists, our major sources for raw materials are located abroad and prices fluctuate at times. We have entered into extended raw material supply agreements and expect to implement product price increases as necessary to mitigate rising costs. For these reasons, we exercise great care in selecting, purchasing and managing availability of raw materials. We also purchase steel bars and forgings for making toolholders and other tool parts, as well as for producing mining tools, rotary cutting tools and accessories. We purchase products for use in manufacturing processes and for resale from thousands of suppliers located in the U.S. and abroad. Our internal capabilities provide access to additional sources of raw materials and offer tungsten carbide recycling capabilities, and therefore, help mitigate our reliance on third parties.

RESEARCH AND DEVELOPMENT (R&D) Our R&D efforts focus on delivering innovations to our customers from both new product and process technology development. New product development provides solutions to our customers' manufacturing challenges and productivity requirements. New process technology is developed and implemented in-house as part of our simplification/modernization efforts to enhance product quality and efficiency at our plant sites. We use a disciplined framework, and have established "gates," or sequential tests to remove inefficiencies and accelerate commercial success. This framework is designed to acclerate and streamline development into a series of actions and decision points, integrating resource tasks to implement new and enhanced products and process technologies faster. It is designed to assure a strong linkage between verified customer requirements and corporate strategy, and to enable us to gain the full benefits of our investment in development work.

We hold a number of patents and trademarks which, in the aggregate, are material to the operation of our businesses. The duration of our patent protection varies throughout the world by jurisdiction.

SEASONALITY Our business is affected by seasonal variations to varying degrees by traditional summer vacation shutdowns of customers' plants and holiday shutdowns that affect our sales levels during the first and second quarters of our fiscal year.

BACKLOG Our backlog of orders generally is not significant to our operations.

COMPETITION As one of the world's leading producers of tooling and metalworking products, specialty wear-resistant components and ceramics, earth cutting tools and advanced metallurgical powders, we maintain a leading competitive position in major markets worldwide. We actively compete in the sale of all our products with several large global competitors and with many smaller niche businesses offering various capabilities to customers around the world. While several of our competitors are divisions of larger corporations, our industry remains largely fragmented, containing several hundred fabricators, toolmakers and niche specialty coating businesses. Many of our competitors operate relatively small facilities, producing a limited selection of tools while buying cemented tungsten carbide components from original producers of cemented tungsten carbide products, including Kennametal. We also supply coating solutions and other engineered wear-resistant products to both larger corporations and smaller niche businesses. Given the fragmentation, opportunities for consolidation exist from both U.S.-based and internationally-based firms, as well as among thousands of industrial supply distributors.

The principal competitive differentiators in our businesses include customer focused support and application expertise, custom and standard product innovation, product performance and quality and our brand recognition. We derive competitive advantage from our premium brand positions, global presence, application expertise and ability to address unique customer needs with new and improved tools, innovative surface and wear-resistant solutions, highly engineered components, consistent quality, traditional and digital customer service and technical assistance capabilities, state-of-the-art manufacturing and multiple sales channels. With these strengths, we are able to sell products based on the value-added productivity we deliver to our customers, rather than competing solely on price.

REGULATION From time to time, we are a party to legal claims and proceedings that arise in the ordinary course of business, which may relate to our operations or assets, including real, tangible, or intellectual property assets. While we currently believe that the amount of ultimate liability, if any, we may face with respect to these actions will not materially affect our financial position, results of operations or liquidity, the ultimate outcome of any litigation is uncertain. Were an unfavorable outcome to occur or if protracted litigation were to ensue, the effect on us could be material.

Compliance with government laws and regulations pertaining to the discharge of materials or pollutants into the environment or otherwise relating to the protection of the environment did not have a material effect on our capital expenditures or competitive position for the years covered by this Annual Report, nor is such compliance expected to have a material effect on us in the future.

The operation of our business has exposed us to certain liabilities and compliance costs related to environmental matters. We are involved in various environmental cleanup and remediation activities at certain of our locations.

We establish and maintain reserves for certain potential environmental issues. At June 30, 2019 and 2018, the balances of these reserves were $12.4 million and $12.6 million, respectively. These reserves represent anticipated costs associated with the remediation of these issues and are generally not discounted.

The reserves we have established for environmental liabilities represent our best current estimate of the costs of addressing all identified environmental situations, based on our review of currently available evidence, and taking into consideration our prior experience in remediation and that of other companies, as well as public information released by the United States Environmental Protection Agency (USEPA), other governmental agencies and by the Potentially Responsible Party (PRP) groups in which we are participating. Although the reserves currently appear to be sufficient to cover these environmental liabilities, there are uncertainties associated with environmental liabilities, and we can give no assurance that our estimate of any environmental liability will not increase or decrease in the future. The reserved and unreserved liabilities for all environmental concerns could change substantially due to factors such as the nature and extent of contamination, changes in remedial requirements, technological changes, discovery of new information, the financial strength of other PRPs, the identification of new PRPs and the involvement of and direction taken by the government on these matters.

Among other environmental laws, we are subject to the Comprehensive Environmental Response Compensation and Liability Act of 1980 (Superfund), under which we have been designated by the USEPA as a PRP with respect to environmental remedial costs at certain Superfund sites. We have evaluated our claims and potential liability associated with these Superfund sites based upon the best information currently available to us. We believe our environmental accruals will be adequate to cover our portion of the environmental remedial costs at those Superfund sites where we have been designated a PRP, to the extent these expenses are probable and reasonably estimable.

EMPLOYEES We employed approximately 10,400 people at June 30, 2019, of which approximately 3,400 were located in the U.S. and 7,000 were located in other parts of the world, principally Germany, India and China. At June 30, 2019, approximately 3,100 of our employees were represented by labor unions. We consider our labor relations to be generally good.

AVAILABLE INFORMATION Our internet address is www.kennametal.com. On the SEC Filings page of our Website, which is accessible under the "About Us" tab, under Investor Relations, we post the following filings as soon as reasonably practicable after they are electronically filed with or furnished to the Securities and Exchange Commission (SEC): our annual reports on Form 10-K, our annual proxy statements, our annual conflict minerals disclosure and reports on Form SD, our annual reports on Form 11-K, our quarterly reports on Form 10-Q, our current reports on Form 8-K and any amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act. The SEC Filings page of our Website also includes Forms 3, 4 and 5 filed pursuant to Section 16(a) of the Exchange Act. All filings posted on our SEC Filings page are available to be viewed on our Website free of charge. On the Corporate Governance page of our Website, which is accessible under the "About Us" tab, under Investor Relations, we post the following charters and guidelines: Audit Committee Charter, Compensation Committee Charter, Nominating/Corporate Governance Committee Charter, Kennametal Inc. Corporate Governance Guidelines and Kennametal Inc. Stock Ownership Guidelines. On the Ethics and Compliance page of our Website, which is under the "About Us" tab, under Company Profile, we post our Code of Conduct and our Conflict Minerals Statement. All charters and guidelines posted on our Website are available to be viewed free of charge. Information contained on our Website is not part of this Annual Report or our other filings with the SEC. Copies of this Annual Report and those items disclosed on the Corporate Governance and Ethics and Compliance pages of our Website are available without charge upon written request to: Investor Relations, Kennametal Inc., 600 Grant Street, Suite 5100, Pittsburgh, Pennsylvania 15219-2706. The SEC maintains an internet site (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

RISK FACTORS

This section describes material risks to our business that are currently known to us. Our business, financial condition or results of operations may be materially affected by a number of factors. Our management regularly monitors the risks inherent in our business, with input from our Enterprise Risk Management process. In addition to real time monitoring, we periodically conduct a formal enterprise-wide risk assessment to identify factors and circumstances that might present significant risk to the Company. Many of these risks are discussed throughout this report. The risks below, however, are not exhaustive. We operate in a rapidly changing environment. Other risks that we currently believe to be immaterial could become material in the future. We are also subject to legal and regulatory changes. New factors could emerge, and it is not possible to predict the outcome of all such risk factors on our business, financial condition or results of operations. The following discussion details the material risk factors and uncertainties that we believe could cause Kennametal’s actual results to differ materially from those projected in any forward-looking statements.

Downturns in the business cycle could adversely affect our sales and profitability. Our business has historically been cyclical and subject to significant impact from economic downturns. Global economic downturns coupled with global financial and credit market disruptions have had a negative effect on our sales and profitability historically. These events could contribute to weak end markets, a sharp drop in demand for our products and services and higher costs of borrowing and/or diminished credit availability. Although we believe that the long-term prospects for our business remain positive, we are unable to predict the future course of industry variables or the strength and pace or sustainability of economic development.

Our restructuring efforts may not have the intended effects. We are implementing restructuring and other actions to reduce structural costs, improve operational efficiency and position the Company for long-term profitable growth. However, there is no assurance that these efforts, or that any other actions that we have taken or may take in the future, will be sufficient to counter any future economic or industry disruptions. We cannot provide assurance that we will not incur additional restructuring charges or impairment charges, or that we will achieve all of the anticipated benefits from the restructuring actions we have taken, are taking now, or plan to take in the future. If we are unable to effectively restructure our operations in light of evolving market conditions, it could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our simplification/modernization initiative began in fiscal 2017. The purpose of this initiative is to invest in our plants, equipment and processes to automate and lower our overall labor cost. These capital investments have resulted in savings and are expected to result in further savings from reduced labor, maintenance and supply costs, while at the same time improving the quality of our products. We cannot provide any assurances that we will achieve all of the anticipated savings from these planned actions. These initiatives are expected to put pressure on our cash flows for the near-term. If we are unable to effectively execute our plans, it could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our international operations pose certain risks that may adversely effect sales and earnings. We have manufacturing operations and assets located outside of the U.S., including but not limited to those in Western Europe, Brazil, Canada, China, India, Israel and South Africa. We also sell our products to customers and distributors located outside of the U.S. During the year ended June 30, 2019, 57 percent of our consolidated sales were derived from non-U.S. markets. These international operations are subject to a number of special risks, in addition to the risks of our domestic operations, including currency exchange rate fluctuations, differing protections of intellectual property, trade barriers, exchange controls, regional economic uncertainty, overlap of different tax regimens, differing (and possibly more stringent) labor regulations, labor unrest, risk of governmental expropriation, domestic and foreign customs and tariffs, current and changing regulatory environments (including, but not limited to, the risks associated with the importation and exportation of products and raw materials), risk of failure of our foreign employees to comply with both U.S. and foreign laws, including antitrust laws, trade regulations and the Foreign Corrupt Practices Act, difficulty in obtaining distribution support, difficulty in staffing and managing widespread operations, differences in the availability and terms of financing, social and political instability and unrest and risks of increased taxes and/or adverse tax consequences. Also, in some foreign jurisdictions, we may be subject to laws limiting the right and ability of entities organized or operating therein to pay dividends or remit earnings to affiliated companies unless specified conditions are met. To the extent we are unable to effectively manage our international operations and these risks, our international sales may be adversely affected, we may be subject to additional and unanticipated costs, and we may be subject to litigation or regulatory action. As a consequence, our business, financial condition and results of operations could be seriously harmed.

Additional tax expense or exposures could affect our financial condition and results of operations. We are subject to various taxes in the U.S. and numerous other jurisdictions. Our future results of operations could be adversely affected by changes in our effective tax rate as a result of a change in the mix of earnings between U.S. and non-U.S. jurisdictions or among jurisdictions with differing statutory tax rates, changes in tax laws or treaties or in their application or interpretation, changes in generally accepted accounting principles, changes in the valuation of deferred tax assets and liabilities, changes in the amount of earnings indefinitely reinvested in certain non-U.S. jurisdictions, and the results of audits and examinations of previously filed tax returns and continuing assessments of our tax exposures.

Implementation of new tariffs and changes to or uncertainties related to tariffs and trade agreements could adversely affect our business. The U.S. has recently announced the implementation of certain new tariffs on steel, aluminum and other raw materials imported into the country and may also consider additional tariffs. In response, certain foreign governments have implemented or are reportedly considering implementing additional tariffs on U.S. goods. In addition, there have been recent changes to trade agreements. Uncertainties with respect to tariffs, trade agreements or any potential trade wars could negatively effect the global economic markets and could affect demand for our products and could have a material adverse effect on our financial condition, results of operations and cash flows. Changes in tariffs could also result in changes in supply and demand of our raw material needs and could affect our manufacturing capabilities and could lead to increased prices that we may not be able to effectively pass on to customers, each of which could materially adversely affect our operating margins, results of operations and cash flows.

Changes in the regulatory environment, including environmental, health and safety regulations, could subject us to increased compliance and manufacturing costs, which could have a material adverse effect on our business.
Health and Safety Regulations. Certain of our products contain hard metals, including tungsten and cobalt. Hard metal dust is being studied for potential adverse health effects by organizations in several regions throughout the world, including the U.S., Europe and Japan. Future studies on the health effects of hard metals may result in our products being classified as hazardous to human health, which could lead to new regulations in countries in which we operate that may restrict or prohibit the use of, and/or exposure to, hard metal dust. New regulation of hard metals could require us to change our operations, and these changes could affect the quality of our products and materially increase our costs.

Environmental Regulations. We are subject to various environmental laws, and any violation of, or our liabilities under, these laws could adversely affect us. Our operations necessitate the use and handling of hazardous materials and, as a result, we are subject to various federal, state, local and foreign laws, regulations and ordinances relating to the protection of the environment, including those governing discharges to air and water, handling and disposal practices for solid and hazardous wastes, the cleanup of contaminated sites and the maintenance of a safe workplace. These laws impose penalties, fines and other sanctions for noncompliance and liability for response costs, property damages and personal injury resulting from past and current spills, disposals or other releases of, or exposure to, hazardous materials. We could incur substantial costs as a result of noncompliance with or liability for cleanup or other costs or damages under these laws. We may be subject to more stringent environmental laws in the future. If more stringent environmental laws are enacted in the future, these laws could have a material adverse effect on our business, financial condition and results of operations.

Regulations affecting the mining and drilling industries or utilities industry. Some of our principal customers are mining and drilling companies. Many of our mining and drilling customers supply coal, oil, gas or other fuels as a source of energy to utility companies in the U.S. and other industrialized regions. The operations of these mining and drilling companies are geographically diverse and are subject to or affected by a wide array of regulations in the jurisdictions where they operate, such as applicable environmental laws and regulations governing the mining and drilling industry and the utilities industry. As a result of changes in regulations and laws relating to these industries, our customers' operations could be disrupted or curtailed by governmental authorities. The high cost of compliance with these regulations may also induce customers to discontinue or limit their operations and may discourage companies from developing new opportunities. As a result of these factors, demand for our mining- and drilling-related products could be substantially affected by regulations adversely effecting the mining and drilling industries or altering the consumption patterns of utilities.

Impairment of goodwill and other intangible assets with indefinite lives could result in a negative effect on our financial condition and results of operations. At June 30, 2019, goodwill and other indefinite-lived intangible assets totaled $314.6 million, or 12 percent of our total assets. Goodwill results from acquisitions, representing the excess of cost over the fair value of the net tangible and other identifiable intangible assets we have acquired. We assess at least annually whether there has been impairment in the value of our goodwill and indefinite-lived intangible asset. If future operating performance at one or more of our reporting units were to fall significantly below current levels, we could record, under current applicable accounting rules, a non-cash impairment charge for goodwill or other intangible asset impairment. Any determination requiring the impairment of a significant portion of goodwill or other intangible assets would negatively affect our financial condition and results of operations.

Our continued success depends on our ability to protect and defend our intellectual property. Our future success depends in part upon our ability to protect and defend our intellectual property. We rely principally on nondisclosure agreements and other contractual arrangements and trade secret laws and, to a lesser extent, trademark and patent laws, to protect our intellectual property. However, these measures may be inadequate to protect our intellectual property from infringement by others or prevent misappropriation of our proprietary rights. In addition, the laws of some foreign countries do not protect proprietary rights to the same extent as do U.S. laws. If one of our patents is infringed upon by a third party, we may need to devote significant time and financial resources to defend our rights with respect to such patent. We may not be successful in defending our patents. Similarly, while we do not knowingly infringe on the patents, copyrights or other intellectual property rights of others, we may be required to spend a significant amount of time and financial resources to resolve any infringement claims against us, and we may not be successful in defending our position or negotiating alternative remedies. Our inability to protect our proprietary information and enforce or defend our intellectual property rights in proceedings initiated by us or brought against us could have a material adverse effect on our business, financial condition and results of operations.

Failure of, or a breach in security of, our information technology systems could adversely affect our business. We rely on information technology infrastructure to achieve our business objectives. Any disruption of our infrastructure could negatively effect our ability to record or process orders, manufacture and ship in a timely manner, or otherwise carry on business in the normal course. Any disruption could cause us to lose customers or revenue and could require us to incur significant expense to remediate.

In recent years, cybersecurity attacks have become more sophisticated and more prevalent. A security breach of our information technology systems could interrupt or damage our operations or harm our reputation. In addition, we could be subject to liability if confidential information relating to customers, employees, vendors and the extended supply chain or other parties is misappropriated from our computer system. We do not believe we have been the target of a material successful cyber attack. While we have dedicated increased resources to fortify our security measures, our systems may be vulnerable to physical break-ins, computer viruses, human error, programming errors or similar disruptive problems. Therefore, we cannot assure that our system improvements will be sufficient to prevent or limit the damage from any cyber attack or network disruption.

We operate in a highly competitive environment. Our domestic and foreign operations are subject to significant competitive pressures. We compete directly and indirectly with other manufacturers and suppliers of metalworking tools, engineered components and advanced materials. Some of our competitors are larger than we are and may have greater access to financial resources or be less leveraged than us. In addition, the industry in which our products are used is a large, fragmented industry that is highly competitive.

If we are unable to retain our qualified management and employees, our business may be negatively affected. Our ability to provide high quality products and services depends in part on our ability to retain our skilled personnel in the areas of management, product engineering, servicing and sales. Competition for such personnel is intense, and our competitors can be expected to attempt to hire our management and skilled employees from time to time. In addition, our restructuring activities and strategies for growth have placed, and are expected to continue to place, increased demands on our management's skills and resources. If we are unable to retain our management team and professional personnel, our customer relationships and level of technical expertise could be negatively affected, which may materially and adversely affect our business.

Any interruption of our workforce, including interruptions due to our restructuring initiatives, unionization efforts, changes in labor relations or shortages of appropriately skilled individuals could effect our business.

Our future operating results may be affected by fluctuations in the prices and availability of raw materials. The raw materials we use for our products include tungsten ore concentrates and scrap carbide, which are used to make tungsten oxide, as well as compounds and secondary materials such as cobalt. A significant portion of our raw materials is supplied by sources outside of the U.S. The raw materials extraction industry is highly cyclical and at times pricing and supply can be volatile due to a number of factors beyond our control, including natural disasters, general economic and political conditions, labor costs, competition, import duties, tariffs and currency exchange rate fluctuations. This volatility can significantly affect our raw material costs. In an environment of increasing raw material prices, competitive conditions can affect how much of these price increases we can recover in the form of higher sales prices for our products. To the extent we are unable to pass on any raw material price increases to our customers, our profitability could be adversely affected. Furthermore, restrictions in the supply of tungsten, cobalt and other raw materials could adversely affect our operating results. If the prices for our raw materials increase or we are unable to secure adequate supplies of raw materials on favorable terms, our profitability could be impaired. If the prices for our raw materials decrease, we could face product pricing challenges.

Product liability claims could have a material adverse effect on our business. The sale of metalworking, mining, highway construction and other tools and related products as well as engineered components and advanced materials entails an inherent risk of product liability claims. We cannot give any assurances that the coverage limits of our insurance policies will be adequate or that our policies will cover any particular loss. Insurance can be expensive, and we may not always be able to purchase insurance on commercially acceptable terms, if at all. Claims brought against us that are not covered by insurance or that result in recoveries in excess of our insurance coverage could have a material adverse affect on our business, financial condition and results of operations.

We may not be able to complete, manage or integrate acquisitions successfully. We have acquired companies in the past and we may continue to evaluate acquisition opportunities that have the potential strengthen or expand our business. We can give no assurances, however, that any acquisition opportunities will arise or if they do, that they will be consummated, or that additional financing, if needed, will be available on satisfactory terms. In addition, acquisitions involve inherent risks that the businesses acquired will not perform in accordance with our expectations. We may not be able to achieve the synergies and other benefits we expect from the integration of acquisitions as successfully or rapidly as projected, if at all. Our failure to consummate an acquisition or effectively integrate newly acquired operations could prevent us from realizing our expected strategic growth and rate of return on an acquired business and could have a material and adverse effect on our results of operations and financial condition.

Natural disasters or other global or regional catastrophic events could disrupt our operations and adversely affect results. Despite our concerted effort to minimize risk to our production capabilities and corporate information systems and to reduce the effect of unforeseen interruptions to us through business continuity planning, we still may be exposed to interruptions due to catastrophe, natural disaster, pandemic, terrorism or acts of war, which are beyond our control. Disruptions to our facilities or systems, or to those of our key suppliers, could also interrupt operational processes and adversely effect our ability to manufacture our products and provide services and support to our customers. As a result, our business, our results of operations, financial position, cash flows and stock price could be adversely affected.

ITEM 1B – UNRESOLVED STAFF COMMENTS

None.

ITEM 2 – PROPERTIES

Our principal executive offices are located at 600 Grant Street, Suite 5100, Pittsburgh, Pennsylvania, 15219. Our corporate and technology center is located at 1600 Technology Way, P.O. Box 231, Latrobe, Pennsylvania, 15650. A summary of our principal manufacturing facilities and other materially important properties is as follows:

			Primary Segment		
Location	**Owned/Leased**	**Principal Products**	**IND[1]**	**WID[2]**	**INF[3]**
United States:					
Gurley, Alabama	Owned	Metallurgical Powders			X
Huntsville, Alabama	Owned	Metallurgical Powders			X
Rogers, Arkansas	Owned/Leased	Carbide Products, Pelletizing Die Plates and Downhole Drilling Carbide Components			X
Goshen, Indiana	Leased	Powders; Welding Rods, Wires and Machines			X
New Albany, Indiana	Leased	High Wear Coating for Steel Parts			X
Greenfield, Massachusetts	Owned	High-Speed Steel Taps		X	
Traverse City, Michigan	Owned	Wear Parts			X
Fallon, Nevada	Owned	Metallurgical Powders			X
Asheboro, North Carolina	Owned	Carbide Round Tools	X		
Henderson, North Carolina	Owned	Metallurgical Powders			X
Roanoke Rapids, North Carolina	Owned	Metalworking Inserts	X		
Cleveland, Ohio	Leased	Distribution	X		
Orwell, Ohio	Owned	Metalworking Inserts	X		
Solon, Ohio	Owned	Metalworking Toolholders	X		
Whitehouse, Ohio	Owned/Leased	Metalworking Inserts and Round Tools	X		
Bedford, Pennsylvania	Owned/Leased	Mining and Construction Tools, Wear Parts and Distribution			X
Irwin, Pennsylvania	Owned	Carbide Wear Parts			X
New Castle, Pennsylvania	Owned/Leased	Specialty Metals and Alloys			X
Johnson City, Tennessee	Owned	Metalworking Inserts	X		
La Vergne, Tennessee	Owned	Metalworking Inserts	X		
New Market, Virginia	Owned	Metalworking Toolholders	X		
International:					
La Paz, Bolivia	Owned	Tungsten Concentrate			X
Indaiatuba, Brazil	Leased	Metalworking Carbide Drills and Toolholders	X		
Belleville, Canada	Owned	Casting Components, Coatings and Powder Metallurgy Components			X
Victoria, Canada	Owned	Wear Parts			X
Fengpu, China	Owned	Intermetallic Composite Ceramic Powders and Parts			X
Shanghai, China	Owned	Powders, Welding Rods and Wires and Cast Components			X
Shanghai, China	Owned	Distribution	X		
Tianjin, China	Owned	Metalworking Inserts, Carbide Round Tools and Metallurgical Powders	X		X

Table of Contents

Location	Owned/Leased	Principal Products	Primary Segment		
			IND[1]	WID[2]	INF[3]
Xuzhou, China	Leased	Mining Tools			X
Ebermannstadt, Germany	Owned	Metalworking Inserts	X		
Essen, Germany	Owned/Leased	Metalworking Inserts	X		
Königsee, Germany	Leased	Metalworking Carbide Drills	X		
Lichtenau, Germany	Owned	Metalworking Toolholders	X		
Mistelgau, Germany	Owned	Wear Parts and Metallurgical Powders			X
Nabburg, Germany	Owned	Metalworking Toolholders and Metalworking Round Tools, Drills and Mills	X		
Neunkirchen, Germany	Owned	Distribution	X		
Schongau, Germany	Owned	Ceramic Vaporizer Boats			X
Vohenstrauss, Germany	Owned	Metalworking Carbide Drills	X		
Bangalore, India	Owned	Metalworking Inserts, Toolholders and Wear Parts	X	X	X
Shlomi, Israel	Owned	High-Speed Steel and Carbide Round Tools		X	
Zory, Poland	Leased	Mining and Construction Conicals			X
Boksburg, South Africa	Leased	Mining and Construction Conicals			X
Barcelona, Spain	Leased	Metalworking Cutting Tools	X		
Kingswinford, United Kingdom	Leased	Distribution	X		
Newport, United Kingdom	Owned	Intermetallic Composite Powders			X

(1) Industrial segment
(2) Widia segment
(3) Infrastructure segment

We also have a network of customer service centers located throughout North America, Europe, India, Asia Pacific and Latin America, a significant portion of which are leased. The majority of our research and development efforts are conducted at our technology center located in Latrobe, Pennsylvania, U.S., as well as at our facilities in Rogers, Arkansas, U.S.; Fürth, Germany and Bangalore, India.

We use all of our significant properties in the businesses of powder metallurgy, tools, tooling systems, engineered components and advanced materials. Our production capacity is adequate for our present needs. We believe that our properties have been adequately maintained, are generally in good condition and are suitable for our business as presently conducted.

ITEM 3 - LEGAL PROCEEDINGS

The information set forth in Part I, Item 1, of this Annual Report under the caption “Regulation” is incorporated by reference into this Item 3. From time to time, we are party to legal claims and proceedings that arise in the ordinary course of business, which may relate to our operations or assets, including real, tangible or intellectual property. Although certain of these types of actions are currently pending, we do not believe that any individual proceeding is material or that our pending legal proceedings in the aggregate are material to Kennametal.

ITEM 4 - MINE SAFETY DISCLOSURES

Not applicable.

EXECUTIVE OFFICERS OF THE REGISTRANT

Incorporated by reference into this Part I is the information set forth in Part III, Item 10 of this Annual Report under the caption “Information About Our Executive Officers.”

PART II

ITEM 5 - MARKET FOR THE REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

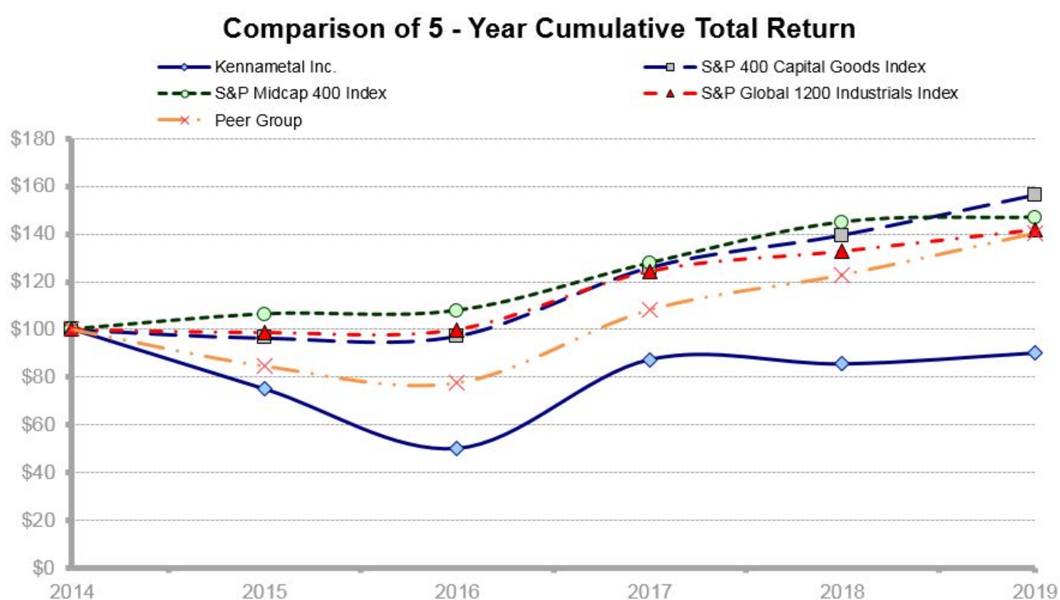
Our capital stock is traded on the New York Stock Exchange under the symbol "KMT." The number of shareholders of record as of July 31, 2019 was 1,492.

The information incorporated by reference into Part III, Item 12 of this Annual Report from our 2019 Proxy Statement under the heading "Equity Compensation Plans – Equity Compensation Plan Information" is hereby incorporated by reference into this Item 5.

PERFORMANCE GRAPH

The following graph compares cumulative total shareholder return on our capital stock with the cumulative total shareholder return on the common stock of the companies in the Standard & Poor's Mid-Cap 400 Market Index (S&P Midcap 400), the Standard & Poor's 400 Capital Goods (S&P 400 Capital Goods), the Standard & Poor's Global 1200 Industrials Index (S&P Global 1200 Industrials) and the peer group of companies determined by us for the period from July 1, 2013 to June 30, 2019.

The Peer Group consists of the following companies: Actuant Corporation; Allegheny Technologies Incorporated; Ametek, Inc.; Barnes Group Inc.; Carpenter Technology Corporation; Crane Co.; Donaldson Company, Inc.; Flowserve Corporation; Graco Inc.; Harsco Corporation; IDEX Corporation; ITT Inc.; Lincoln Electric Holdings, Inc.; The Manitowoc Company, Inc.; Nordson Corporation; Rexnord Corporation; Sandvik AB, Corp.; SPX Corporation; SPX FLOW, Inc.; The Timken Company; and Woodward, Inc.



Assumes $100 Invested on July 1, 2013 and All Dividends Reinvested

	2014	2015	2016	2017	2018	2019
Kennametal	$ 100.00	$ 75.11	$ 50.33	$ 87.29	$ 85.46	$ 89.97
Peer Group Index	100.00	84.61	77.54	108.15	122.82	140.28
S&P Midcap 400	100.00	106.40	107.81	127.83	145.09	147.07
S&P 400 Capital Goods	100.00	96.52	97.33	125.90	139.42	156.12
S&P Global 1200 Industrials	100.00	98.68	99.98	124.38	132.75	141.75

ISSUER PURCHASES OF EQUITY SECURITIES

Period	Total Number of Shares Purchased[1]	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs [2]
April 1 through April 30, 2019	1,100	$ 37.59	—	10,100,100
May 1 through May 31, 2019	2,258	33.71	—	10,100,100
June 1 through June 30, 2019	471	36.99	—	10,100,100
Total	3,829	$ 35.22	—	

(1) During the fourth quarter of 2019, 1,673 shares were purchased on the open market on behalf of Kennametal to fund the Company’s dividend reinvestment program. Employees also delivered 2,156 shares of restricted stock to Kennametal, upon vesting, to satisfy tax withholding requirements.

(2) On July 25, 2013, the Company publicly announced an open-ended, amended repurchase program for up to 17 million shares of its outstanding common stock outside of the Company's dividend reinvestment program.

UNREGISTERED SALES OF EQUITY SECURITIES

None.

ITEM 6 - SELECTED FINANCIAL DATA

		2019	2018	2017	2016	2015
OPERATING RESULTS (in thousands)						
Sales		$ 2,375,234	$ 2,367,853	$ 2,058,368	$ 2,098,436	$ 2,647,195
Cost of goods sold	(1)	1,543,738	1,547,734	1,413,453	1,492,697	1,853,458
Operating expense	(1)	474,151	503,252	468,568	496,792	557,718
Restructuring and asset impairment charges	(2)	14,084	11,907	65,018	143,810	582,235
Loss on divestiture		—	—	—	131,463	—
Interest expense		32,994	30,081	28,842	27,752	31,466
Provision (benefit) for income taxes		63,359	69,981	29,895	25,313	(16,654)
Income (loss) from continuing operations attributable to Kennametal		241,925	200,180	49,138	(225,968)	(373,896)
Net income (loss) attributable to Kennametal		241,925	200,180	49,138	(225,968)	(373,896)
FINANCIAL POSITION (in thousands)						
Working capital		$ 729,101	$ 659,635	$ 652,423	$ 648,066	$ 775,802
Total assets		2,656,269	2,925,737	2,415,496	2,362,783	2,843,655
Long-term debt, including capital leases, excluding current maturities		592,474	591,505	694,991	693,548	730,011
Total debt, including capital leases and notes payable		592,631	991,705	695,916	695,443	745,713
Total Kennametal shareholders' equity		1,335,172	1,194,325	1,017,294	964,323	1,345,807
PER SHARE DATA ATTRIBUTABLE TO KENNAMETAL SHAREHOLDERS						
Basic earnings (loss) from continuing operations	(3)	$ 2.94	$ 2.45	$ 0.61	$ (2.83)	$ (4.71)
Basic earnings (loss)	(3)	2.94	2.45	0.61	(2.83)	(4.71)
Diluted earnings (loss) from continuing operations	(3)	2.90	2.42	0.61	(2.83)	(4.71)
Diluted earnings (loss)	(3)	2.90	2.42	0.61	(2.83)	(4.71)
Dividends		0.80	0.80	0.80	0.80	0.72
Book value (at June 30)		16.17	14.63	12.61	12.10	16.96
Market Price (at June 30)		36.99	35.90	37.42	22.11	34.12
OTHER DATA (in thousands, except number of employees)						
Capital expenditures		$ 212,343	$ 171,004	$ 118,018	$ 110,697	$ 100,939
Number of employees (at June 30)		10,395	10,491	10,744	11,178	12,718
Basic weighted average shares outstanding		82,379	81,544	80,351	79,835	79,342
Diluted weighted average shares outstanding		83,291	82,754	81,169	79,835	79,342
KEY RATIOS						
Sales growth (decline)	(4)	0.3%	15.0%	(1.9)%	(20.7)%	(6.7)%
Gross profit margin		35.0	34.6	31.3	28.9	30.0
Operating margin	(5)	13.8	12.3	4.6 %	(2.7)%	(14.1)%

(1) Amounts were restated to reflect retrospective application for adoption of ASU No. 2017-07, "Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost" on July 1, 2018. Cost of goods sold was increased by $12.2 million, $12.8 million, $10.3 million and $12.3 million for 2018, 2017, 2016 and 2015, respectively. Operating expense was increased by $5.1 million, $5.4 million, $1.8 million and $2.8 million for 2018, 2017, 2016 and 2015, respectively.

(2) In 2019, 2018 and 2017, all charges were related to restructuring. In 2016, the charges related to intangible asset impairment of $108.5 million, restructuring charges of $30.0 million and fixed asset disposal charges of $5.4 million. In 2015, the charges related to intangible asset impairment of $541.7 million and restructuring charges of $40.5 million.

(3) 2019 included restructuring and related charges of $0.17, a net benefit from tax reform of $0.11, a charge related to changes in the indefinite reinvestment assertion on certain foreign subsidiaries' undistributed earnings of $0.07 and $0.01 of benefit from the release of the valuation allowance on Australian deferred tax assets. 2018 included restructuring and related charges of $0.16, effect of an out of period adjustment to the provision for income taxes of $0.06 and net effect of tax reform of $0.01. 2017 included restructuring and related charges of $0.89 and Australia deferred tax valuation allowance of $0.02. 2016 included U.S. deferred tax valuation allowance of $1.02, divestiture and related charges of $1.39, intangible asset impairment charges of $0.96, restructuring and related charges of $0.50, fixed asset disposal charges of $0.05 and operations of divested businesses of $0.02. 2015 included intangible asset impairment charges of $6.13 and restructuring and related charges of $0.56.

(4) Divestiture effect of sales decline was negative 4 percent and negative 5 percent in 2017 and 2016, respectively.

(5) Included restructuring and related charges of $16.9 million, $15.9 million, $76.2 million, $53.5 million and $58.1 million in 2019, 2018, 2017, 2016 and 2015, respectively; intangible asset impairment of $108.5 million and $541.7 million in 2016 and 2015, respectively; and divestiture and related charges of $131.5 million in 2016.

ITEM 7 - MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion should be read in connection with the consolidated financial statements of Kennametal Inc. and the related financial statement notes included in Item 8 of this Annual Report. Unless otherwise specified, any reference to a “year” is to our fiscal year ended June 30. Additionally, when used in this Annual Report, unless the context requires otherwise, the terms “we,” “our” and “us” refer to Kennametal Inc. and its subsidiaries.

OVERVIEW Kennametal Inc. was founded based on a tungsten carbide technology breakthrough in 1938. The Company was incorporated in Pennsylvania in 1943 as a manufacturer of tungsten carbide metal cutting tooling, and was listed on the New York Stock Exchange (NYSE) in 1967. With more than 80 years of materials expertise, the Company is a global industrial technology leader, helping customers across the aerospace, earthworks, energy, general engineering and transportation industries manufacture with precision and efficiency. This expertise includes the development and application of tungsten carbides, ceramics, super-hard materials and solutions used in metal cutting and extreme wear applications to keep customers up and running longer against conditions such as corrosion and high temperatures.

Our standard and custom product offering spans metalworking and wear applications including turning, milling, hole making, tooling systems and services, as well as specialized wear components and metallurgical powders. End users of the Company's metalworking products include manufacturers engaged in a diverse array of industries including: the manufacturers of transportation vehicles and components, machine tools and light and heavy machinery; airframe and aerospace components; and energy-related components for the oil and gas industry, as well as power generation. The Company’s wear and metallurgical powders are used by producers and suppliers in equipment-intensive operations such as road construction, mining, quarrying, oil and gas exploration, refining, production and supply.

Throughout the MD&A, we refer to measures used by management to evaluate performance. We also refer to a number of financial measures that are not defined under accounting principles generally accepted in the United States of America (U.S. GAAP), including organic sales growth, constant currency regional sales growth (decline) and constant currency end market sales growth (decline). The explanation at the end of the MD&A provides the definition of these non-GAAP financial measures as well as details on their use and a reconciliation to the most directly comparable GAAP financial measures.

Operational results in 2019 reflected increasing progress on our simplification/modernization initiatives with earnings per diluted share (EPS) of $2.90, a 20 percent improvement over the prior year results. A key milestone of those initiatives was the recent announcement of the intended closure of four of our facilities, which is expected to drive further structural benefits and improve operational efficiency. Sales in 2019 of $2,375.2 million grew slightly compared to $2,367.9 million in 2018, reflecting a 3 percent increase from organic sales growth offset by unfavorable currency exchange effect of 3 percent. We also continued to gain traction on our growth initiatives in general engineering and aerospace, with aerospace growing by double digits. Against this backdrop of year-over-year progress, we saw increased softening in most of our end-markets late in the year. Our expectation is that this challenging macro environment will continue into the first half of fiscal 2020. Nevertheless, we expect to continue executing our plan to improve long-term profitability.

Operating income was $328.9 million compared to $290.3 million in the prior year. The increase was driven primarily by organic sales growth, incremental simplification/modernization benefits, favorable mix and lower compensation expense, partially offset by unfavorable volume-related labor and fixed cost absorption in certain facilities in part due to simplification/modernization efforts in progress, higher raw material costs, unfavorable currency exchange and greater restructuring and related charges. Price realization exceeded raw material cost inflation in 2019, and operating margin improved to 13.8 percent from 12.3 percent in the prior year. The Industrial, Infrastructure and Widia segments had operating margins of 17.3 percent, 12.0 percent and 1.5 percent, respectively.

As previously announced, the Company initiated several restructuring actions associated with our ongoing simplification/modernization program. These proposed actions are expected to reduce structural costs, improve operational efficiency and position the Company for long-term profitable growth. Proposed facility closures and other actions in fiscal 2020 (FY20 Restructuring Actions) in total are expected to deliver estimated annualized savings of $35 million to $40 million, with total expected pre-tax charges of $55 million to $65 million.

Proposed facility closures in fiscal 2021 (FY21 Restructuring Actions) are expected to result in further structural cost reductions with estimated annualized savings of $25 million to $30 million. Most of these savings would be achieved in fiscal 2021 with full run rate savings being realized in fiscal 2022. The Company expects to incur pre-tax charges of $60 million to $75 million through fiscal 2020 and 2021 related to the restructuring. These charges are primarily cash with the majority expected to be spent in fiscal 2021.

During 2019 we recorded $17.5 million of pre-tax restructuring and related charges during the year and pre-tax benefits from cost savings initiatives were approximately $12 million, with annualized run-rate pre-tax benefits of approximately $15 million achieved.

We generated cash flow from operating activities of $300.5 million in 2019 compared to $277.3 million during the prior year. Capital expenditures were $212.3 million and $171.0 million during 2019 and 2018, respectively, with the increase due in part to higher spending in connection with our simplification/modernization efforts, and the Company returned $65.7 million to shareholders through dividends.

For discussion related to the results of operations, changes in financial condition and liquidity and capital resources for fiscal 2018 compared to fiscal 2017 refer to Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in our fiscal 2018 Form 10-K, which was filed with the United States Securities and Exchange Commission on August 10, 2018.

RESULTS OF CONTINUING OPERATIONS

SALES Sales in 2019 were $2,375.2 million and were flat compared to $2,367.9 million in 2018. Organic sales growth of 3 percent from organic sales growth was offset by unfavorable currency exchange effect of 3 percent.

	2019	
(in percentages)	As Reported	Constant Currency
End market sales growth (decline):		
Aerospace and defense	12%	16%
Energy	4	5
General engineering	3	7
Earthworks	(6)	(3)
Transportation	(9)	(5)
Regional sales growth (decline):		
Americas	4%	5%
Asia Pacific	(2)	2
Europe, the Middle East and Africa (EMEA)	(4)	2

GROSS PROFIT Gross profit increased $11.4 million to $831.5 million in 2019 from $820.1 million in 2018. This increase was primarily due to organic sales growth, incremental simplification/modernization benefits and favorable mix, partially offset by higher raw material costs, unfavorable volume-related labor and fixed cost absorption in certain facilities in part due to simplification/modernization efforts in progress, higher raw material costs and unfavorable foreign currency exchange effect of approximately $29 million. The gross profit margin for 2019 was 35.0 percent compared to 34.6 percent in 2018.

OPERATING EXPENSE Operating expense in 2019 was $474.2 million, a decrease of $29.1 million, or 5.8 percent, from $503.2 million in 2018. The decrease was primarily due to lower compensation expense, favorable currency exchange effect of approximately $13 million and incremental restructuring simplification/modernization benefits, partially offset by salary inflation.

We invested further in technology and innovation to continue delivering high quality products to our customers. Research and development expenses included in operating expense totaled $39.0 million and 38.9 million for 2019 and 2018, respectively.

RESTRUCTURING AND RELATED CHARGES AND ASSET IMPAIRMENT CHARGES

FY19 Restructuring Actions

In the June quarter of fiscal 2018, we implemented and subsequently substantially completed restructuring activities to simplify the Industrial segment's cost structure by directing our resources to more profitable business and increasing sales force productivity. We supplemented this with the rationalization of small manufacturing facilities in the Infrastructure and Industrial segments, which we substantially completed in fiscal 2019. Total restructuring and related charges since inception of $13.4 million were recorded for this program through June 30, 2019: $11.8 million in Industrial, $1.0 million in Widia, $0.5 million in Infrastructure and $0.1 million in Corporate.

FY20 Restructuring Actions
In the June quarter of fiscal 2019, we began implementing the next phase of restructuring associated with our simplification/modernization initiative. These proposed actions are expected to reduce structural costs, improve operational efficiency and position the Company for long-term profitable growth, and are currently estimated to achieve $35 million to $40 million of annualized savings by the end of fiscal 2020. The Company expects to incur pre-tax charges of $55 million to $65 million through fiscal 2020 for these restructuring activities, which are anticipated to be primarily cash expenditures and are expected to be approximately 80 percent Industrial, 5 percent Widia and 15 percent Infrastructure. Total restructuring and related charges since inception of $14.2 million were recorded for this program through June 30, 2019: $10.0 million in Industrial, $2.4 million in Infrastructure and $1.8 million in Widia.

FY21 Restructuring Actions
Fiscal 2021 proposed closures are expected to result in further structural cost reductions with estimated annualized savings of $25 million to $30 million. Most of these savings would be achieved in fiscal 2021 with full run rate savings being realized in fiscal 2022. The Company is expected to incur pre-tax charges of $60 million to $75 million, primarily in the Industrial segment, through fiscal 2020 and 2021 for this restructuring. These charges are primarily cash with the majority expected to be spent in fiscal 2021.

Annual Restructuring Charges
During 2019, we recorded restructuring and related charges of $16.9 million, net of a $4.8 million gain on the sale of our previously closed Madison, AL manufacturing location as part of our FY19 Restructuring Actions. Of this amount, restructuring charges totaled $19.5 million, of which $0.7 million was related to inventory and was recorded in cost of goods sold. Restructuring-related charges of $1.8 million were recorded in cost of goods sold and $0.3 million were recorded in operating expense during 2019.

During 2018, we recorded restructuring and related charges of $15.9 million, net of a $4.7 million gain on the sale of our previously closed Houston, TX manufacturing location as part of our legacy restructuring programs. Of this amount, restructuring charges totaled $16.4 million, of which benefit of $0.2 million was related to inventory and was recorded in cost of goods sold. Restructuring-related charges of $3.7 million were recorded in cost of goods sold and $0.5 million were recorded in operating expense during 2018.

AMORTIZATION OF INTANGIBLES Amortization expense was $14.4 million and $14.7 million in 2019 and 2018, respectively.

INTEREST EXPENSE Interest expense in 2019 was $33.0 million, an increase of $2.9 million, compared to $30.1 million in 2018. The increase was primarily due to the incremental interest expense on the $300.0 million of 4.625 percent Senior Unsecured Notes issued in June 2018 (New Notes). The portion of our debt subject to variable rates of interest was less than 1 percent at June 30, 2019 and 2018.

OTHER INCOME, NET In 2019, other income, net was $15.4 million, an increase of $0.6 million from $14.8 million in 2018. The increase was primarily due to lower foreign currency transaction losses, partially offset by lower pension income and lower interest income in the current year.

INCOME TAXES The effective tax rate for 2019 was 20.4 percent compared to 25.4 percent for 2018. The current year rate reflects several effects associated with the Tax Cuts and Jobs Act of 2017 (TCJA) including a lower U.S. federal statutory tax rate, a $9.3 million net tax benefit associated with the finalization of a one-time tax that is imposed on our unremitted foreign earnings (toll tax), a tax on global intangible low-taxed income (GILTI) and a $6.1 million charge related to changes in the Company's permanent reinvestment assertion on certain foreign subsidiaries' undistributed earnings, which are no longer considered permanently reinvested. The 2019 rate also includes a benefit of $1.1 million from the release of the valuation allowance that was previously recorded against the net deferred tax assets of our subsidiary in Australia. The prior year rate includes charges related to TCJA and an out of period adjustment. See Note 11 of our consolidated financial statements set forth in Item 8 of this Annual Report for a more comprehensive discussion about the TCJA (Note 11).

In 2012, we received an assessment from the Italian tax authority that denied certain tax deductions primarily related to our 2008 tax return. Attempts at negotiating a reasonable settlement with the tax authority were unsuccessful; and as a result, we decided to litigate the matter. The outcome of the litigation is still pending; however, we continue to believe that the assessment is baseless, and do not anticipate making a payment in connection with this assessment. Accordingly, no income tax liability has been recorded in connection with this assessment in any period. However, if the Italian tax authority were to be successful in litigation, settlement of the amount alleged by the Italian tax authority would result in an increase to income tax expense for as much as €35 million, or $40 million, of which penalties and interest is €20 million, or $23 million.

NET INCOME ATTRIBUTABLE TO KENNAMETAL Net income attributable to Kennametal was $241.9 million, or $2.90 EPS, in 2019, compared to $200.2 million, or $2.42 EPS, in 2018. The increase is a result of the factors previously discussed.

BUSINESS SEGMENT REVIEW We operate in three reportable operating segments consisting of Industrial, Widia and Infrastructure. Corporate expenses that are not allocated are reported in Corporate. Segment determination is based upon internal organizational structure, the manner in which we organize segments for making operating decisions and assessing performance and the availability of separate financial results. See Note 19 of our consolidated financial statements set forth in Item 8 of this Annual Report.

Our sales and operating income by segment are as follows:

(in thousands)	2019	2018
Sales:		
Industrial	$ 1,274,499	$ 1,292,098
Widia	197,522	198,568
Infrastructure	903,213	877,187
Total sales	$ 2,375,234	$ 2,367,853
Operating income (loss):		
Industrial	$ 220,696	$ 176,978
Widia	2,882	2,919
Infrastructure	108,480	112,998
Corporate	(3,208)	(2,596)
Total operating income	328,850	290,299
Interest expense	32,994	30,081
Other income, net	(15,379)	(14,823)
Income from continuing operations before income taxes	$ 311,235	$ 275,041

INDUSTRIAL

(in thousands)	2019	2018
Sales	$ 1,274,499	$ 1,292,098
Operating income	220,696	176,978
Operating margin	17.3%	13.7%

(in percentages)	2019
Organic sales growth	2%
Foreign currency exchange impact	(3)
Business days impact	—
Sales decline	(1)%

	2019	
(in percentages)	As Reported	Constant Currency
End market sales growth (decline):		
Aerospace and defense	12%	16%
General engineering	2	5
Energy	(2)	1
Transportation	(9)	(5)
Regional sales growth (decline):		
Americas	4%	7%
EMEA	(5)	1
Asia Pacific	(5)	(1)

In 2019, Industrial sales of $1,274.5 million decreased by $17.6 million, or 1 percent, from 2018. Sales in aerospace were higher in all three regions driven by higher demand for engines and frames globally, and general engineering sales increased in all three regions due to the overall economic environment, particularly in the first half of the fiscal year. The slight growth in energy, excluding the unfavorable impact of currency exchange, was driven primarily by oil and gas drilling in the Americas and strength in the renewable energy market in China. Transportation sales declined in all three regions due to weaker market conditions. Growth in the Americas and slight growth in EMEA, excluding the unfavorable impact of currency exchange, was primarily driven by the performance in the general engineering and aerospace end markets, partially offset by a decrease in the transportation end market. The sales decrease in Asia Pacific was primarily driven by conditions in the transportation end market, partially offset by growth in the aerospace, general engineering and energy end markets.

In 2019, Industrial operating income was $220.7 million, a $43.7 million increase from 2018. The primary drivers for the increase were organic sales growth, incremental simplification/modernization benefits and favorable mix, partially offset by unfavorable volume-related labor and fixed cost absorption in certain facilities in part due to simplification/modernization efforts in progress, unfavorable currency exchange impact of approximately $11 million, $8.4 million incremental restructuring and related charges and higher raw material costs.

WIDIA

(in thousands)	2019	2018
Sales	$ 197,522	$ 198,568
Operating income	2,882	2,919
Operating margin	1.5%	1.5%

(in percentages)	2019
Organic sales growth	3%
Foreign currency exchange impact	(4)
Business days impact	—
Sales decline	(1)%

	2019	
(in percentages)	As Reported	Constant Currency
Regional sales growth (decline):		
EMEA	—%	7%
Americas	(1)	—
Asia Pacific	(1)	5

In 2019, Widia sales of $197.5 million decreased by $1.0 million, or 1 percent, from 2018. Sales growth in EMEA, despite the increasingly difficult market environment, was driven mainly by growth in products focused on aerospace applications due in part to our successful aerospace growth initiatives. Sales growth in Asia Pacific, excluding the unfavorable impact of currency exchange, was driven primarily by strong sales in India, partially offset by overall market softness in China. Sales in the Americas were flat, with increases in Mexico and in aerospace applications offset by the effects of exiting portions of our product portfolio and actions taken to improve the effectiveness of the distribution network.

Widia operating income was $2.9 million in 2019 and 2018. The current year operating income reflects organic sales growth in the current period, offset by unfavorable mix, salary inflation, $1.6 million incremental restructuring and related charges and unfavorable currency exchange impact of approximately $1 million.

INFRASTRUCTURE

(in thousands)	2019	2018
Sales	$ 903,213	$ 877,187
Operating income	108,480	112,998
Operating margin	12.0%	12.9%

(in percentages)	2019
Organic sales growth	5%
Foreign currency exchange impact	(2)
Business days impact	—
Sales growth	3%

	2019	
(in percentages)	As Reported	Constant Currency
End market sales growth (decline):		
General engineering	10%	12%
Energy	6	7
Earthworks	(6)	(3)
Regional sales growth (decline):		
Americas	4%	5%
Asia Pacific	2	6
EMEA	(1)	5

In 2019, Infrastructure sales of $903.2 million increased by $26.0 million, or 3 percent, from 2018. Strong growth in general engineering was driven primarily by more robust activity in all regions. Increases in process industries, power generation, and the U.S. oil and gas market drove year-over-year growth in energy, with average U.S. land rig counts up 7 percent compared to the prior year. Earthworks end market sales were down year-over-year due to softness in mining in the Americas and EMEA, offset by growth in Asia Pacific. The sales increase in Asia Pacific was driven primarily by the performance in the earthworks and energy end markets. Growth in the Americas and in EMEA, excluding the unfavorable impact of currency exchange, was driven by the performance in the general engineering and energy end markets, partially offset by a decrease in earthworks.

In 2019, Infrastructure operating income was $108.5 million, a $4.5 million decrease from 2018. The primary drivers for the decrease were higher raw material costs and manufacturing expenses and an unfavorable currency exchange impact of approximately $3 million, partially offset by, organic sales growth, incremental simplification/modernization benefits and $3.6 million less restructuring and related charges.

CORPORATE

(in thousands)	2019	2018
Corporate expense	$ (3,208)	$ (2,596)

In 2019, Corporate expense increased $0.6 million from 2018.

LIQUIDITY AND CAPITAL RESOURCES Cash flow from operations is the primary source of funding for our capital expenditures. During the year ended June 30, 2019, cash flow provided by operating activities was $300.5 million.

Our five-year, multi-currency, revolving credit facility, as amended and restated in June 2018 (Credit Agreement), is used to augment cash from operations and as an additional source of funds. The Credit Agreement provides for revolving credit loans of up to $700.0 million for working capital, capital expenditures and general corporate purposes. The Credit Agreement allows for borrowings in U.S. dollars, euros, Canadian dollars, pounds sterling and Japanese yen. Interest payable under the Credit Agreement is based upon the type of borrowing under the facility and may be (1) LIBOR plus an applicable margin, (2) the greater of the prime rate or the Federal Funds effective rate plus an applicable margin or (3) fixed as negotiated by us. The Credit Agreement matures in June 2023. We had no outstanding borrowings on our Credit Agreement as of June 30, 2019.

The Credit Agreement requires us to comply with various restrictive and affirmative covenants, including two financial covenants: a maximum leverage ratio and a minimum consolidated interest coverage ratio (as those terms are defined in the Credit agreement). We were in compliance with all covenants as of June 30, 2019. For the year ended June 30, 2019, average daily borrowings outstanding under the Credit Agreement were approximately $12.1 million. We had no borrowings outstanding under the Credit Agreement as of June 30, 2019 and 2018. Borrowings under the Credit Agreement are guaranteed by our significant domestic subsidiaries.

Additionally, we obtain local financing through credit lines with commercial banks in the various countries in which we operate. At June 30, 2019, these borrowings were immaterial. We believe that cash flow from operations and the availability under our credit lines will be sufficient to meet our cash requirements over the next 12 months.

Based upon our debt structure at June 30, 2019 and 2018, less than 1 percent of our debt was exposed to variable rates of interest.

Based on regulations issued by the U.S. Department of the Treasury and the Internal Revenue Service and other relevant guidance issued through June 30, 2019, we recorded a net benefit of $9.3 million during 2019 to finalize the toll tax. We did not make a cash payment associated with the toll tax.

As a result of the Tax Cuts and Jobs Act of 2017 (TCJA), which among other provisions allows for a 100 percent dividends received deduction from controlled foreign subsidiaries, we re-evaluated our assertion with respect to permanent reinvestment in all jurisdictions during the current year and concluded that a portion of the unremitted earnings and profits of certain non-U.S. subsidiaries and affiliates will no longer be permanently reinvested. These changes in assertion required the recognition of a tax charge of $6.1 million recorded in the current year primarily for foreign withholding and U.S. state income taxes. The remaining amount of approximately $1.4 billion is substantially all of the unremitted earnings of our non-U.S. subsidiaries which continues to be indefinitely reinvested. The deferred tax liability associated with unremitted earnings of our non-U.S. subsidiaries not permanently reinvested is $3.9 million as of June 30, 2019. Determination of the amount of unrecognized deferred tax liability related to indefinitely reinvested earnings is not practicable due to our legal entity structure and the complexity of U.S. and local tax laws. With regard to the unremitted earnings which remain indefinitely reinvested, we have not, nor do we anticipate the need to, repatriate funds to the U.S. to satisfy domestic liquidity needs arising in the ordinary course of business, including liquidity needs associated with our domestic debt service requirements.

At June 30, 2019, we had cash and cash equivalents of $182.0 million. Total Kennametal Shareholders’ equity was $1,335.2 million and total debt was $592.6 million. Our current senior credit ratings are considered investment grade. We believe that our current financial position, liquidity and credit ratings provide us access to the capital markets. We continue to closely monitor our liquidity position and the condition of the capital markets, as well as the counterparty risk of our credit providers.

The following is a summary of our contractual obligations and other commercial commitments as of June 30, 2019 (in thousands):

Contractual Obligations		Total	2020	2021-2022	2023-2024	Thereafter
Long-term debt, including current maturities	(1)	$ 713,450	$ 25,500	$ 347,125	$ 27,750	$ 313,075
Notes payable	(2)	196	196	—	—	—
Pension benefit payments		(3)	51,516	104,535	109,198	(3)
Postretirement benefit payments		(3)	1,418	2,535	2,177	(3)
Operating leases		60,077	17,074	18,905	6,930	17,168
Purchase obligations	(4)	254,450	139,444	99,976	15,030	—
Unrecognized tax benefits	(5)	9,701	608	2,694	5,376	1,023
Total			$ 235,756	$ 575,770	$ 166,461	

(1) Long-term debt includes interest obligations of $114.3 million and excludes debt issuance costs of $5.5 million. Interest obligations were determined assuming interest rates as of June 30, 2019 remain constant.
(2) Notes payable includes interest obligations of an immaterial amount. Interest obligations were determined assuming interest rates as of June 30, 2019 remain constant.
(3) Annual payments are expected to continue into the foreseeable future at the amounts noted in the table.
(4) Purchase obligations consist of purchase commitments for materials, supplies and machinery and equipment as part of the ordinary conduct of business. Purchase obligations with variable price provisions were determined assuming market prices as of June 30, 2019 remain constant.
(5) Unrecognized tax benefits are positions taken or expected to be taken on an income tax return that may result in additional payments to tax authorities. These amounts include interest of $0.7 million and penalty of $0.1 million accrued related to such positions as of June 30, 2019. Positions for which we are not able to reasonably estimate the timing of potential future payments are included in the ‘Thereafter’ column. If a tax authority agrees with the tax position taken or expected to be taken or the applicable statute of limitations expires, then additional payments will not be necessary.

Other Commercial Commitments	Total	2020	2021-2022	2023-2024	Thereafter
Standby letters of credit	$ 4,097	$ 2,665	$ 1,432	$ —	$ —
Guarantees	29,708	19,004	2,026	—	8,678
Total	$ 33,805	$ 21,669	$ 3,458	$ —	$ 8,678

The standby letters of credit relate to insurance and other activities. The guarantees are non-debt guarantees with financial institutions, which are required primarily for security deposits, product performance guarantees and advances.

Cash Flow Provided by Operating Activities
During 2019, cash flow provided by operating activities was $300.5 million, compared to $277.3 million in 2018. During 2019, cash flow provided by operating activities consisted of net income and non-cash items amounting to $388.0 million and changes in certain assets and liabilities netting to an outflow of $87.5 million. Contributing to the changes in certain assets and liabilities were an increase in inventories of $53.4 million, a decrease in accounts payable and accrued liabilities of $49.4 million and a decrease in accrued pension and postretirement benefits of $8.2 million, partially offset by a decrease in accounts receivable of $17.3 million. The changes in inventories and accounts receivable were primarily due to increased demand in the September and December quarters, increased strategic inventory on our high volume/high profitability products for improved customer service, raw material price increases, a temporary increase in inventory related to product moves between facilities as part of simplification/modernization and lower than anticipated sales in the March and June quarters.

During 2018, cash flow provided by operating activities was $277.3 million. Cash flow provided by operating activities consisted of net income and non-cash items amounting to $361.9 million and changes in certain assets and liabilities netting to an outflow of $84.6 million. Contributing to the changes in certain assets and liabilities were an increase in inventories of $37.2 million, a decrease in accrued pension and postretirement benefits of $26.8 million, an increase in accounts receivable of $22.2 million and a decrease in accounts payable and accrued liabilities of $5.0 million, partially offset by an increase in accrued income taxes of $11.1 million. The increases in inventories and accounts receivable were due in part to higher demand in our end markets, in addition to the effects of raw material cost inflation on inventories.

Cash Flow Used for Investing Activities
Cash flow used for investing activities was $201.5 million for 2019, an increase of $44.6 million, compared to $156.9 million in 2018. During 2019, cash flow used for investing activities included capital expenditures, net of $201.1 million, which consisted primarily of equipment upgrades and modernization initiatives.

Cash flow used for investing activities was $156.9 million for 2018. During 2018, cash flow used for investing activities included capital expenditures, net of $156.6 million, which consisted primarily of machinery and equipment upgrades and additions related to our modernization initiatives and capacity additions.

Cash Flow (Used for) Provided by Financing Activities
Cash flow used for financing activities was $471.4 million for 2019, compared to cash flow provided by financing activities of $247.2 million in 2018. During 2019, cash flow used for financing activities included outflows of $400.9 million of net term debt repayments primarily due to the early extinguishment of our 2.650 percent Senior Unsecured Notes, $65.7 million of cash dividends paid to Shareholders and $4.7 million of the effect of employee benefit and stock plans and dividend reinvestment.

Cash flow provided by financing activities was $247.2 million for 2018. During 2018, cash flow provided by financing activities included a $296.2 million net increase in borrowings due primarily to the issuance of the New Notes and $18.0 million of the effect of employee benefit and stock plans and dividend reinvestment, partially offset by $65.1 million of cash dividends paid to Shareholders.

FINANCIAL CONDITION At June 30, 2019, total assets were $2,656.3 million, a decrease of $269.5 million from $2,925.7 million at June 30, 2018. Total liabilities decreased $413.8 million from $1,695.4 million at June 30, 2018 to $1,281.6 million at June 30, 2019.

Working capital was $729.1 million at June 30, 2019, an increase of $69.5 million from $659.6 million at June 30, 2018. The increase in working capital was primarily driven by a decrease in current maturities of long-term debt and capital leases of $399.3 million due to the early redemption of our $400 million of 2.650 percent Senior Unsecured Notes; an increase in inventory of $46.1 million due primarily to increased demand in the September and December quarters, increased strategic inventory on our high volume/high profitability products for improved customer service, raw material price increases, a temporary increase in inventory related to product moves between facilities as part of simplification/modernization and lower than anticipated sales in the March and June quarters; a decrease in accrued payroll of $18.0 million and a decrease in accounts payable of $9.0 million. Partially offsetting these items were a decrease in cash and cash equivalents of $374.1 million, a decrease in accounts receivable of $21.4 million and an increase in accrued income taxes of $10.6 million due primarily to increased taxable income in taxpaying jurisdictions. Currency exchange rate effects decreased working capital by a total of approximately $11 million, the effects of which are included in the aforementioned changes.

Property, plant and equipment, net increased $110.7 million from $824.2 million at June 30, 2018 to $934.9 million at June 30, 2019, primarily due to capital additions of $212.3 million and favorable currency exchange effects of $7.2 million. This increase was partially offset by depreciation expense of $97.6 million and disposals of $11.2 million.

At June 30, 2019, other assets were $530.5 million, a decrease of $24.8 million from $555.4 million at June 30, 2018. The primary drivers for the decrease were a decrease in intangible assets of $15.5 million, which was due to amortization expense of $14.4 million and unfavorable currency exchange effects of $1.1 million, a decrease in pension plan assets of $11.0 million due mostly to lower discount rates and a decrease in goodwill of $1.8 million primarily due to unfavorable currency exchange rate effects.

Kennametal Shareholders' equity was $1,335.2 million at June 30, 2019, an increase of $140.8 million from $1,194.3 million in the prior year. The increase was primarily due to net income attributable to Kennametal of $241.9 million, capital stock issued under employee benefit and stock plans of $17.9 million, the reclassification of net pension and other postretirement benefit loss of $5.1 million and the reclassification of unrealized loss on expired derivatives designated and qualified as cash flow hedges of $1.3 million, partially offset by cash dividends paid to Shareholders of $65.7 million, unrecognized net pension and other postretirement benefit loss of $39.6 million and unfavorable currency exchange effects of $20.2 million.

EFFECTS OF INFLATION Despite modest inflation in recent years, rising costs, including the cost of certain raw materials, continue to affect our operations throughout the world. We strive to minimize the effects of inflation through cost containment, productivity improvements and price increases.

DISCUSSION OF CRITICAL ACCOUNTING POLICIES In preparing our financial statements in conformity with accounting principles generally accepted in the U.S., we make judgments and estimates about the amounts reflected in our financial statements. As part of our financial reporting process, our management collaborates to determine the necessary information on which to base our judgments and develops estimates used to prepare the financial statements. We use historical experience and available information to make these judgments and estimates. However, different amounts could be reported using different assumptions and in light of different facts and circumstances. Therefore, actual amounts could differ from the estimates reflected in our financial statements. Our significant accounting policies are described in Note 2 of our financial statements, which are included in Item 8 of this Annual Report. We believe that the following discussion addresses our critical accounting policies.

Revenue Recognition The Company's contracts with customers are comprised of purchase orders, and for larger customers, may also include long-term agreements. We account for a contract when it has approval and commitment from both parties, the rights of the parties and payment terms are identified, the contract has commercial substance and collectability of consideration is probable. These contracts with customers typically relate to the manufacturing of products, which represent single performance obligations that are satisfied when control of the product passes to the customer. The Company considers the timing of right to payment, transfer of risk and rewards, transfer of title, transfer of physical possession and customer acceptance when determining when control transfers to the customer. As a result, revenue is generally recognized at a point in time - either upon shipment or delivery - based on the specific shipping terms in the contract. The shipping terms vary across all businesses and depend on the product, customary local commercial terms and the type of transportation. Shipping and handling activities are accounted for as activities to fulfill a promise to transfer a product to a customer and as such, costs incurred are recorded when the related revenue is recognized. Payment for products is due within a limited time period after shipment or delivery, typically within 30 to 90 calendar days of the respective invoice dates. The Company does not generally offer extended payment terms.

Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods. Amounts billed and due from our customers are classified as accounts receivable, less allowance for doubtful accounts on the consolidated balance sheet. Certain contracts with customers, primarily distributor customers, have an element of variable consideration that is estimated when revenue is recognized under the contract. Variable consideration primarily includes volume incentive rebates, which are based on achieving a certain level of purchases and other performance criteria as established by our distributor programs. These rebates are estimated based on projected sales to the customer and accrued as a reduction of net sales as they are earned. The majority of our products are consumed by our customers or end users in the manufacture of their products. Historically, we have experienced very low levels of returned products and do not consider the effect of returned products to be material. We have recorded an estimated returned goods allowance to provide for any potential returns.

We warrant that products sold are free from defects in material and workmanship under normal use and service when correctly installed, used and maintained. This warranty terminates 30 days after delivery of the product to the customer and does not apply to products that have been subjected to misuse, abuse, neglect or improper storage, handling or maintenance. Products may be returned to Kennametal only after inspection and approval by Kennametal and upon receipt by the customer of shipping instructions from Kennametal. We have included an estimated allowance for warranty returns in our returned goods allowance discussed above.

The Company records a contract asset when it has a right to payment from a customer that is conditioned on events that have occurred other than the passage of time. The Company also records a contract liability when customers prepay but the Company has not yet satisfied its performance obligation. The Company did not have any material remaining performance obligations, contract assets or liabilities as of June 30, 2019 and 2018.

The Company pays sales commissions related to certain contracts, which qualify as incremental costs of obtaining a contract. However, the Company applies the practical expedient that allows an entity to recognize incremental costs of obtaining a contract as an expense when incurred if the amortization period of the asset that would have been recognized is one year or less. These costs are recorded within operating expense in our condensed consolidated statement of income.

Stock-Based Compensation We recognize stock-based compensation expense for all stock options, restricted stock awards and restricted stock units over the period from the date of grant to the date when the award is no longer contingent on the employee providing additional service (substantive vesting period), net of expected forfeitures. We utilize the Black-Scholes valuation method to establish the fair value of all stock option awards. Time vesting stock units are valued at the market value of the stock on the grant date. Performance vesting stock units with a market condition are valued using a Monte Carlo model.

Accounting for Contingencies We accrue for contingencies when it is probable that a liability or loss has been incurred and the amount can be reasonably estimated. Contingencies by their nature relate to uncertainties that require the exercise of judgment in both assessing whether or not a liability or loss has been incurred and estimating the amount of probable loss. The significant contingencies affecting our financial statements include environmental, health and safety matters and litigation.

Long-Lived Assets We evaluate the recoverability of property, plant and equipment and intangible assets that are amortized whenever events or changes in circumstances indicate the carrying amount of such assets may not be fully recoverable. Changes in circumstances include technological advances, changes in our business model, capital structure, economic conditions or operating performance. Our evaluation is based upon, among other things, our assumptions about the estimated future undiscounted cash flows these assets are expected to generate. When the sum of the undiscounted cash flows is less than the carrying value, we will recognize an impairment loss to the extent that carrying value exceeds fair value. We apply our best judgment when performing these evaluations to determine if a triggering event has occurred, the undiscounted cash flows used to assess recoverability and the fair value of the asset.

Goodwill and Indefinite-Lived Intangible Assets We evaluate the recoverability of goodwill of each of our reporting units by comparing the fair value of each reporting unit with its carrying value. The fair values of our reporting units are determined using a combination of a discounted cash flow analysis and market multiples based upon historical and projected financial information. We perform our annual impairment tests during the June quarter in connection with our annual planning process unless there are impairment indicators based on the results of an ongoing cumulative qualitative assessment that warrant a test prior to that quarter. We apply our best judgment when assessing the reasonableness of the financial projections used to determine the fair value of each reporting unit. The discounted cash flow method was used to measure the fair value of our equity under the income approach. A terminal value utilizing a constant growth rate of cash flows was used to calculate a terminal value after the explicit projection period. The estimates and assumptions used in our calculations include revenue and gross margin growth rates, expected capital expenditures to determine projected cash flows, expected tax rates and an estimated discount rate to determine present value of expected cash flows. These estimates are based on historical experiences, our projections of future operating activity and our weighted average cost of capital (WACC). In order to determine the discount rate, the Company uses a market perspective WACC approach. The WACC is calculated incorporating weighted average returns on debt and equity from market participants. Therefore, changes in the market, which are beyond the control of the Company, may have an effect on future calculations of estimated fair value.

The $272.7 million of goodwill allocated to the Industrial reporting unit is not at risk of failing the quantitative impairment test since fair value substantially exceeded the carrying value as of the date of the last impairment test. There is no goodwill allocated to the Infrastructure reporting unit.

The $27.3 million of goodwill allocated to the Widia reporting unit exceeded carrying value by 25 percent as of the date of the last impairment test. We completed a quantitative test of goodwill impairment using both an income approach and a market approach. To determine fair value, we assumed revenue growth rates of 4 percent to 9 percent and a residual period growth rate of 3 percent. The future period cash flows were discounted at 17 percent per annum. Under the market approach, we estimate the fair value based on market multiples of revenue and earnings of comparable publicly traded companies and comparable transactions of similar companies. The valuation model assumes an increase in sales and profitability within the projection period. Changes in demand and end market conditions may also have an effect on future calculations of estimated fair value. The Company also performed sensitivity analysis on revenue and gross margin growth rate assumptions, as well as the discount rate.

Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions and factors. As a result, there can be no assurance that the estimates and assumptions made for purposes of the annual goodwill and indefinite-lived intangible impairment test will prove to be an accurate prediction of the future. Certain events or circumstances that could reasonably be expected to negatively affect the underlying key assumptions and ultimately impact the estimated fair value of our reporting units may include such items as: (i) a decrease in expected future cash flows, specifically, a decrease in sales volume driven by a prolonged weakness in customer demand or other pressures adversely affecting our long-term sales trends; (ii) inability to achieve the anticipated benefits from simplification/modernization and other cost reduction programs and (iii) inability to achieve the sales from our strategic growth initiatives.

Further, an indefinite-lived trademark intangible asset of $14.5 million in the Widia reporting unit had a fair value that approximated its carrying value as of the date of the last impairment test. To determine fair value, we used a relief from royalty approach and assumed revenue growth rates of 4 percent to 9 percent and a residual period growth rate of 3 percent. We assumed a royalty rate of 1 percent, and the future period cash flows were discounted at 18.5 percent per annum. The estimated fair value of this asset could be negatively affected by a decrease in expected future cash flows, specifically, a decrease in sales volume driven by a prolonged weakness in customer demand or other pressures adversely affecting our long-term sales trends, and inability to achieve the sales from our strategic growth initiatives. Certain events or circumstances that could reasonably be expected to negatively affect the underlying key assumptions and ultimately impact the estimated fair value of our reporting units may include such items as: (i) a decrease in expected future cash flows, specifically, a decrease in sales volume driven by a prolonged weakness in customer demand or other pressures adversely affecting our long-term sales trends; (ii) inability to achieve the sales from our strategic growth initiatives.

Pension and Other Postretirement Benefits We sponsor pension and other postretirement benefit plans for certain employees and retirees. Accounting for the cost of these plans requires the estimation of the cost of the benefits to be provided well into the future and attributing that cost over either the expected work life of employees or over average life of participants participating in these plans, depending on plan status and on participant population. This estimation requires our judgment about the discount rate used to determine these obligations, expected return on plan assets, rate of future compensation increases, rate of future health care costs, withdrawal and mortality rates and participant retirement age. Differences between our estimates and actual results may significantly affect the cost of our obligations under these plans.

In the valuation of our pension and other postretirement benefit liabilities, management utilizes various assumptions. Our discount rates are derived by identifying a theoretical settlement portfolio of high quality corporate bonds sufficient to provide for a plan’s projected benefit payments. This rate can fluctuate based on changes in the corporate bond yields. At June 30, 2019, a hypothetical 25 basis point increase in our discount rates would increase our pre-tax income by approximately $0.2 million, and a hypothetical 25 basis point decrease in our discount rates would decrease our pre-tax income by an immaterial amount.

The long-term rate of return on plan assets is estimated based on an evaluation of historical returns for each asset category held by the plans, coupled with the current and short-term mix of the investment portfolio. The historical returns are adjusted for expected future market and economic changes. This return will fluctuate based on actual market returns and other economic factors.

The rate of future health care cost increases is based on historical claims and enrollment information projected over the next fiscal year and adjusted for administrative charges. This rate is expected to decrease until 2027. At June 30, 2019, a hypothetical 1 percent increase or decrease in our health care cost trend rates would be immaterial to our pre-tax income.

Future compensation rates, withdrawal rates and participant retirement age are determined based on historical information. These assumptions are not expected to significantly change. Mortality rates are determined based on a review of published mortality tables.

We expect to contribute approximately $10 million and $1 million to our pension and other postretirement benefit plans, respectively, in 2020. Expected pension contributions in 2020 are primarily for international plans.

Allowance for Doubtful Accounts We record allowances for estimated losses resulting from the inability of our customers to make required payments. We assess the creditworthiness of our customers based on multiple sources of information and analyze additional factors such as our historical bad debt experience, industry concentrations of credit risk, current economic trends and changes in customer payment terms. This assessment requires significant judgment. If the financial condition of our customers was to deteriorate, additional allowances may be required, resulting in future operating losses that are not included in the allowance for doubtful accounts at June 30, 2019.

Inventories We use the last-in, first-out method for determining the cost of a significant portion of our U.S. inventories, and they are stated at the lower of cost or market. The cost of the remainder of our inventories is measured using approximate costs determined on the first-in, first-out basis or using the average cost method, and are stated at the lower of cost or net realizable value. When market conditions indicate an excess of carrying costs over market value, a lower of cost or net realizable value provision or a lower of cost or market provision, as applicable, is recorded. Excess and obsolete inventory reserves are established based upon our evaluation of the quantity of inventory on hand relative to demand.

Income Taxes Realization of our deferred tax assets is primarily dependent on future taxable income, the timing and amount of which are uncertain, in part, due to the expected profitability of certain foreign subsidiaries. A valuation allowance is recognized if it is “more likely than not” that some or all of a deferred tax asset will not be realized. As of June 30, 2019, the deferred tax assets net of valuation allowances relate primarily to net operating loss carryforwards, pension benefits, accrued employee benefits and inventory reserves. In the event that we were to determine that we would not be able to realize our deferred tax assets in the future, an increase in the valuation allowance would be required. In the event we were to determine that we are able to use our deferred tax assets for which a valuation allowance is recorded, a decrease in the valuation allowance would be required.

NEW ACCOUNTING STANDARDS

Adopted

In May 2014, the Financial Accounting Standards Board (FASB) issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)," which requires an entity to recognize revenue in a manner that depicts the transfer of promised goods to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange. The standard also expands the disclosure requirements around contracts with customers. We adopted Topic 606 on July 1, 2018 using the modified retrospective transition method applied to those contracts that were not completed as of that date. The adoption did not have a material impact on the condensed consolidated financial statements beyond the additional disclosure requirements. Refer to the "Revenue Recognition" section of Note 2 and to Note 19 of our consolidated financial statements set forth in Item 8 of this Annual Report for further details.

In August 2016, the FASB issued ASU No. 2016-15, "Classification of Certain Cash Receipts and Cash Payments (a consensus of the Emerging Issues Task Force)," which addresses eight specific cash flow issues with the objective of reducing the existing diversity in practice with respect to how these are classified in the statement of cash flows. We adopted this ASU on July 1, 2018. Adoption of this guidance did not have a material effect on our consolidated financial statements.

In October 2016, the FASB issued ASU No. 2016-16, "Intra-Entity Transfers of Assets Other Than Inventory," which clarifies that an entity should recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. We adopted this ASU on July 1, 2018. Adoption of this guidance did not have a material effect on our consolidated financial statements.

In March 2017, the FASB issued ASU No. 2017-07, "Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost," which requires that an employer report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net benefit cost are required to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations. We adopted this ASU on July 1, 2018, with the amendments applied on a retrospective basis. Refer to Note 12 to the consolidated financial statements for further details.

In May 2017, the FASB issued ASU No. 2017-09, "Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting," which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. We adopted this ASU on July 1, 2018. Adoption of this guidance did not have a material effect on our condensed consolidated financial statements.

Issued

In August 2018, the FASB issued ASU 2018-15, "Intangibles - Goodwill and Other - Internal-use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract." The standard requires implementation costs incurred by customers in cloud computing arrangements to be capitalized and amortized under the same premises of authoritative guidance for internal-use software. This standard is effective for Kennametal beginning July 1, 2020. We are in the process of assessing the impact the adoption of this guidance will have on our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-14, "Compensation - Retirement Benefits - Defined Benefit Plans - General: Disclosure Framework - Changes to Disclosure Requirements for Defined Benefit Plans." The standard modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. This standard is effective for Kennametal beginning July 1, 2021. We are in the process of assessing the impact the adoption of this guidance will have on our consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07, “Improvements to Nonemployee Share-Based Payment Accounting" which expands the scope of accounting for stock-based compensation to nonemployees. This guidance is effective for Kennametal July 1, 2019. We do not expect the adoption of this guidance to have a material effect on our consolidated financial statements.

In February 2018, the FASB issued ASU No. 2018-02, “Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income," which includes amendments allowing the reclassification of the income tax effects of the Tax Cuts and Jobs Act of 2017 (TCJA) to improve the usefulness of information reported to financial statement users. The amendments in this update also require certain disclosures about stranded tax effects. Certain guidance is optional and is effective for Kennametal July 1, 2019, although early adoption is permitted. We elected not to reclassify the stranded tax effects as permissible under this standard. We do not expect the adoption of this guidance to have a material effect on the consolidated financial statements.

In August 2017, the FASB issued ASU No. 2017-12, "Targeted Improvements to Accounting for Hedging Activities," which seeks to improve financial reporting and obtain closer alignment with risk management activities, in addition to simplifying the application of hedge accounting guidance and additional disclosures. This guidance is effective for Kennametal July 1, 2019. We do not expect the adoption of this guidance to have a material effect on our consolidated financial statements.

In June 2016, the FASB issued ASU No. 2016-13, "Measurement of Credit Losses on Financial Instruments," which introduces an approach based on expected losses to estimate credit losses on certain types of financial instruments. Beyond other modifications in the update, the scope of this amendment includes valuation of trade receivables. This standard is effective for Kennametal beginning July 1, 2020. We are in the process of assessing the impact the adoption of this guidance will have on our consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, "Leases: Topic 842," which replaces the existing guidance in ASC 840, Leases. The standard establishes a right-of-use (ROU) model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. This standard is effective for Kennametal beginning July 1, 2019. We expect to elect the optional transition relief that allows for a cumulative-effect adjustment in the period of adoption and not restate prior periods. We expect to elect the package of practical expedients permitted under the transition guidance within the new standard, which among other things, allows us to carryforward our historical lease classification. We also expect to elect the short-term lease measurement and recognition exemption, which means that leases with an initial term of 12 months or less would not be recorded on the consolidated balance sheet. We are nearly complete in assessing the effect the adoption will have on our consolidated financial statements and expect to record a right-of-use asset and lease liability, each in the range of $45 million to $55 million, on the consolidated balance sheet for several types of operating leases, including land and buildings, vehicles and equipment.

RECONCILIATION OF FINANCIAL MEASURES NOT DEFINED BY U.S. GAAP In accordance with the SEC's Regulation G, we are providing descriptions of the non-GAAP financial measures included in this Annual Report and reconciliations to the most closely related GAAP financial measures. We believe that these measures provide useful perspective on underlying business trends and results and a supplemental measure of year-over-year results. The non-GAAP financial measures described below are used by management in making operating decisions, allocating financial resources and for business strategy purposes and may, therefore, also be useful to investors as they are a view of our business results through the eyes of management. These non-GAAP financial measures are not intended to be considered by the user in place of the related GAAP financial measure, but rather as supplemental information to our business results. These non-GAAP financial measures may not be the same as similar measures used by other companies due to possible differences in method and in the items or events being adjusted.

Organic sales growth Organic sales growth is a non-GAAP financial measure of sales growth (decline) (which is the most directly comparable GAAP measure) excluding the impacts of acquisitions, divestitures, business days and foreign currency exchange from year-over-year comparisons. We believe this measure provides investors with a supplemental understanding of underlying sales trends by providing sales growth on a consistent basis. We report organic sales growth at the consolidated and segment levels.

Constant currency end market sales growth (decline) Constant currency end market sales growth (decline) is a non-GAAP financial measure of sales growth (decline) (which is the most directly comparable GAAP measure) by end market excluding the impacts of acquisitions, divestitures and foreign currency exchange from year-over-year comparisons. We note that, unlike organic sales growth, constant currency end market sales growth (decline) does not exclude the impact of business days. We believe this measure provides investors with a supplemental understanding of underlying end market trends by providing end market sales growth (decline) on a consistent basis. We report constant currency end market sales growth (decline) at the consolidated and segment levels. Widia sales are reported only in the general engineering end market. Therefore, we do not provide constant currency end market sales growth (decline) for the Widia segment and, thus, do not include a reconciliation for that metric.

Constant currency regional sales growth (decline) Constant currency regional sales growth (decline) is a non-GAAP financial measure of sales growth (decline) (which is the most directly comparable GAAP measure) by region excluding the impacts of acquisitions, divestitures and foreign currency exchange from year-over-year comparisons. We note that, unlike organic sales growth, constant currency regional sales growth (decline) does not exclude the impact of business days. We believe this measure provides investors with a supplemental understanding of underlying regional trends by providing regional sales growth (decline) on a consistent basis. We report constant currency regional sales growth (decline) at the consolidated and segment levels.

Reconciliations of organic sales growth to sales growth are as follows:

Year ended June 30, 2019	Industrial	Widia	Infrastructure	Total
Organic sales growth	2%	3%	5%	3%
Foreign currency exchange impact[6]	(3)	(4)	(2)	(3)
Business days impact[7]	—	—	—	—
Sales (decline) growth	(1)%	(1)%	3%	—%

Reconciliations of constant currency end market sales growth (decline) to end market sales growth (decline)[9], are as follows:

Industrial

Year ended June 30, 2019	General engineering	Transportation	Aerospace and defense	Energy
Constant currency end market sales growth (decline)	5%	(5)%	16%	1%
Foreign currency exchange impact[6]	(3)	(4)	(4)	(3)
End market sales growth (decline)[8]	2%	(9)%	12%	(2)%

Infrastructure

Year ended June 30, 2019	Energy	Earthworks	General engineering
Constant currency end market sales growth (decline)	7%	(3)%	12%
Foreign currency exchange impact[6]	(1)	(3)	(2)
End market sales growth (decline)[8]	6%	(6)%	10%

Total

Year ended June 30, 2019	General engineering	Transportation	Aerospace and defense	Energy	Earthworks
Constant currency end market sales growth (decline)	7%	(5)%	16%	5%	(3)%
Foreign currency exchange impact[6]	(4)	(4)	(4)	(1)	(3)
End market sales growth (decline)[8]	3%	(9)%	12%	4%	(6)%

Reconciliations of constant currency regional sales growth (decline) to reported regional sales growth (decline)[10], are as follows:

	Year Ended June 30, 2019		
	Americas	EMEA	Asia Pacific
Industrial			
Constant currency regional sales growth (decline)	7%	1%	(1)%
Foreign currency exchange impact[6]	(3)	(6)	(4)
Regional sales growth (decline)[9]	4%	(5)%	(5)%
Widia			
Constant currency regional sales growth	—%	7%	5%
Foreign currency exchange impact[6]	(1)	(7)	(6)
Regional sales decline[9]	(1)%	—%	(1)%
Infrastructure			
Constant currency regional sales growth	5%	5%	6%
Foreign currency exchange impact[6]	(1)	(6)	(4)
Regional sales growth (decline)[9]	4%	(1)%	2%
Total			
Constant currency regional sales growth	5%	2%	2%
Foreign currency exchange impact[6]	(1)	(6)	(4)
Regional sales growth (decline)[9]	4%	(4)%	(2)%

[6] Foreign currency exchange impact is calculated by dividing the difference between current period sales at prior period foreign exchange rates and prior period sales by prior period sales.
[7] Business days impact is calculated by dividing the year-over-year change in weighted average working days (based on mix of sales by country) by prior period weighted average working days.
[8] Aggregate sales for all end markets sum to the sales amount presented on Kennametal's financial statements.
[9] Aggregate sales for all regions sum to the sales amount presented on Kennametal's financial statements.

ITEM 7A - QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

MARKET RISK We are exposed to certain market risks arising from transactions that are entered into in the normal course of business. As part of our financial risk management program, we use certain derivative financial instruments to manage these risks. We do not enter into derivative transactions for speculative purposes and, therefore, hold no derivative instruments for trading purposes. We may use derivative financial instruments to provide predictability to the effects of changes in foreign exchange rates on our consolidated results and to achieve our targeted mix of fixed and floating interest rates on our outstanding debt. Our objective in managing foreign exchange exposures with derivative instruments is to reduce volatility in cash flow, allowing us to focus more of our attention on business operations. With respect to interest rate management, these derivative instruments may allow us to achieve our targeted fixed-to-floating interest rate mix as a separate decision from funding arrangements in the bank and public debt markets. We measure hedge effectiveness by assessing the changes in the fair value or expected future cash flows of the hedged item. The ineffective portions are recorded in other income, net. See Notes 2 and 15 of our consolidated financial statements set forth in Item 8 of this Annual Report.

We are exposed to counterparty credit risk for nonperformance of derivative contracts and, in the event of nonperformance, to market risk for changes in interest and currency exchange rates, as well as settlement risk. We manage exposure to counterparty credit risk through credit standards, diversification of counterparties and procedures to monitor concentrations of credit risk. We do not anticipate nonperformance by any of the counterparties.

The following provides additional information on our use of derivative instruments. Included below is a sensitivity analysis that is based upon a hypothetical 10 percent weakening or strengthening in the U.S. dollar and its effects on the June 30, 2019 currency exchange rates and the effective interest rates under our current borrowing arrangements. We compared our contractual derivative and borrowing arrangements in effect at June 30, 2019 to the hypothetical foreign exchange or interest rates in the sensitivity analysis to determine the effect on interest expense, pre-tax income and accumulated other comprehensive loss. Our analysis takes into consideration the different types of derivative instruments and the applicability of hedge accounting.

CASH FLOW HEDGES *Currency* A portion of our operations consists of investments in foreign subsidiaries. Our exposure to market risk from changes in foreign exchange rates arises from these investments, intercompany loans utilized to finance these subsidiaries, trade receivables and payables and firm commitments arising from international transactions. We manage our foreign exchange transaction risk to reduce the volatility of cash flows caused by currency exchange rate fluctuations through natural offsets where appropriate and through foreign exchange contracts. These contracts are designated as hedges of forecasted transactions that will settle in future periods and that would otherwise expose us to currency risk.

Our foreign exchange hedging program is intended to mitigate our exposure to currency exchange rate movements. This exposure arises largely from anticipated cash flows from cross-border intercompany sales of products and services. This program utilizes range forwards and forward contracts primarily to sell foreign currency. The notional amounts of the contracts translated into U.S. dollars at June 30, 2019 and 2018 were $61.5 million and $62.9 million, respectively. We would have received $0.2 million and $0.8 million at June 30, 2019 and 2018, respectively, to settle these contracts representing the fair value of these agreements. At June 30, 2019, a hypothetical 10 percent strengthening or weakening of the U.S. dollar would have changed accumulated other comprehensive loss, net of tax, by $1.4 million.

In addition, we may enter into forward contracts to hedge transaction exposures or significant cross-border intercompany loans by either purchasing or selling specified amounts of foreign currency at a specified date. At June 30, 2019 and 2018, we had outstanding forward contracts to purchase and sell foreign currency with notional amounts, translated into U.S. dollars at June 30, 2019 and 2018 rates, of $14.1 million in a buy position and $3.9 million in a sell position, respectively. At June 30, 2019, a hypothetical 10 percent change in the year-end exchange rates would have resulted in a $0.6 million increase or decrease in pre-tax income and a $1.3 million increase or decrease in accumulated other comprehensive loss, net of tax, related to these positions.

DEBT AND NOTES PAYABLE At June 30, 2019 and 2018, we had $592.6 million and $991.7 million, respectively, of outstanding debt, including capital leases and notes payable. Effective interest rates as of June 30, 2019 and 2018 were 4.8 percent and 3.6 percent, respectively. A hypothetical change of 10 percent in market interest rates from June 30, 2019 levels would have had an immaterial impact on our interest expense.

CURRENCY EXCHANGE RATE FLUCTUATIONS Currency exchange rate fluctuations decreased diluted earnings per share by $0.17 in 2019 and increased diluted earnings per share by $0.05 in 2018. Currency exchange rate fluctuations may have a material impact on future earnings in the short term and long term.

ITEM 8 - FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

MANAGEMENT’S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Management has conducted an assessment of the Company’s internal controls over financial reporting as of June 30, 2019 using the criteria in *Internal Control – Integrated Framework (2013)*, issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company’s internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. 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.

Based on its assessment, management has concluded that the Company maintained effective internal control over financial reporting as of June 30, 2019, based on the criteria in *Internal Control – Integrated Framework (2013)* issued by the COSO. The effectiveness of the Company’s internal control over financial reporting as of June 30, 2019 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included in this Annual Report on Form 10-K.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Kennametal Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Kennametal Inc. and its subsidiaries (the “Company”) as of June 30, 2019 and 2018, and the related consolidated statements of income, comprehensive income, cash flow and shareholders’ equity for each of the three years in the period ended June 30, 2019, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of June 30, 2019, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of June 30, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended June 30, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of June 30, 2019, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 8. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

Critical Audit Matters

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 (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters 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.

Goodwill and Indefinite-Lived Intangible Asset Impairment Assessments – Widia Reporting Unit and WIDIA Trademark

As described in Notes 2 and 7 to the consolidated financial statements, the Company's goodwill balance was $300.0 million and indefinite-lived intangible assets balance was $14.5 million at June 30, 2019. The goodwill associated with the Widia reporting unit was $27.3 million, and the carrying value of the indefinite-lived trademark intangible asset in the Widia reporting unit (WIDIA trademark) was $14.5 million. Management performs an annual impairment test during the June quarter, unless there are impairment indicators based on the results of an ongoing cumulative qualitative assessment that warrant a test prior to that quarter. Management evaluates the recoverability of goodwill for each of its reporting units by comparing the fair value of each reporting unit to its carrying value. Fair value is determined using a combination of a market multiples approach and a discounted cash flow analysis based upon historical and projected financial information. Estimating fair value of each reporting unit requires various assumptions, including revenue and gross margin growth rates, expected capital expenditures to determine projected cash flows, expected tax rates and an estimated discount rate. Management evaluates the recoverability of indefinite-lived intangible assets by comparing the fair value of the asset to its carrying value. Fair value is determined using a discounted cash flow analysis based on projected financial information. Estimating fair value of the indefinite-lived asset requires various assumptions, including revenue growth rate and an estimated royalty rate.

The principal considerations for our determination that performing procedures relating to goodwill and indefinite-lived intangible asset impairment assessments of the Widia reporting unit and WIDIA trademark is a critical audit matter are there was significant judgment by management when developing the fair value measurement of the Widia reporting unit and WIDIA trademark, which in turn led to a high degree of auditor judgment, effort and subjectivity in performing procedures and evaluating audit evidence obtained relating to management's projected financial information and significant assumptions, including revenue and gross margin growth rates for goodwill and revenue growth rate for the indefinite-lived intangible asset.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's goodwill and indefinite-lived intangible asset impairment assessments, including controls over the valuation of the Widia reporting unit and the WIDIA trademark. These procedures also included, among others, testing management's process for developing the fair value estimates; evaluating the appropriateness of the market multiple and discounted cash flow analysis; testing the completeness, accuracy, and relevance of underlying data used in the model; and evaluating the reasonableness of significant assumptions used by management in estimating the fair value of the Widia reporting unit and WIDIA trademark, including revenue and gross margin growth rates. Evaluating management's assumptions related to revenue and gross margin growth rates involved evaluating whether the assumptions used by management were reasonable considering the current and past performance of the reporting unit, consistency with third-party industry data, and whether the assumptions were consistent with evidence obtained in other areas of the audit.

/s/ PricewaterhouseCoopers LLP

Pittsburgh, Pennsylvania
August 13, 2019

We have served as the Company's auditor since 2002.

CONSOLIDATED STATEMENTS OF INCOME

Year ended June 30 (in thousands, except per share data)	2019	2018	2017
Sales	$ 2,375,234	$ 2,367,853	$ 2,058,368
Cost of goods sold	1,543,738	1,547,730	1,413,452
Gross profit	831,496	820,123	644,916
Operating expense	474,151	503,249	468,568
Restructuring and asset impairment charges (Note 14)	14,084	11,907	65,018
Amortization of intangibles	14,411	14,668	16,578
Operating income	328,850	290,299	94,752
Interest expense	32,994	30,081	28,842
Other income, net	(15,379)	(14,823)	(15,965)
Income before income taxes	311,235	275,041	81,875
Provision for income taxes (Note 11)	63,359	69,981	29,895
Net income	247,876	205,060	51,980
Less: Net income attributable to noncontrolling interests	5,951	4,880	2,842
Net income attributable to Kennametal	$ 241,925	$ 200,180	$ 49,138
PER SHARE DATA ATTRIBUTABLE TO KENNAMETAL SHAREHOLDERS			
Basic earnings per share	$ 2.94	$ 2.45	$ 0.61
Diluted earnings per share	$ 2.90	$ 2.42	$ 0.61
Dividends per share	$ 0.80	$ 0.80	$ 0.80
Basic weighted average shares outstanding	82,379	81,544	80,351
Diluted weighted average shares outstanding	83,291	82,754	81,169

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Year ended June 30 (in thousands)	2019	2018	2017
Net income	$ 247,876	$ 205,060	$ 51,980
Other comprehensive (loss) income, net of tax			
Unrealized gain (loss) on derivatives designated and qualified as cash flow hedges	197	(922)	(471)
Reclassification of unrealized loss on expired derivatives designated and qualified as cash flow hedges	1,348	3,747	1,557
Unrecognized net pension and other postretirement benefit (loss) gain	(39,639)	(5,991)	15,559
Reclassification of net pension and other postretirement benefit loss	5,124	7,274	7,566
Foreign currency translation adjustments	(20,785)	(1,490)	5,888
Total other comprehensive (loss) income, net of tax	(53,755)	2,618	30,099
Total comprehensive income	194,121	207,678	82,079
Less: comprehensive income attributable to noncontrolling interests	5,414	4,131	4,124
Comprehensive income attributable to Kennametal Shareholders	$ 188,707	$ 203,547	$ 77,955

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

Table of Contents

CONSOLIDATED BALANCE SHEETS

As of June 30 (in thousands, except per share data)	2019	2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 182,015	$ 556,153
Accounts receivable, less allowance for doubtful accounts of $10,083 and $11,807 respectively	379,855	401,290
Inventories (Note 6)	571,576	525,466
Other current assets	57,381	63,257
Total current assets	1,190,827	1,546,166
Property, plant and equipment:		
Land and buildings	351,142	351,953
Machinery and equipment	1,804,871	1,702,243
Less accumulated depreciation	(1,221,118)	(1,229,983)
Property, plant and equipment, net	934,895	824,213
Other assets:		
Goodwill (Notes 2 and 7)	300,011	301,802
Other intangible assets, less accumulated amortization of $158,507 and $145,334, respectively (Notes 2 and 7)	160,998	176,468
Deferred income taxes (Note 11)	20,507	17,015
Long-term prepaid pension benefit (Note 12)	31,581	42,543
Other	17,450	17,530
Total other assets	530,547	555,358
Total assets	$ 2,656,269	$ 2,925,737
LIABILITIES		
Current liabilities:		
Current maturities of long-term debt (Note 9)	$ —	$ 399,266
Notes payable to banks (Note 10)	157	934
Accounts payable	212,908	221,903
Accrued income taxes	29,223	18,603
Accrued vacation pay	17,422	18,078
Accrued payroll	59,194	77,161
Other current liabilities (Note 8)	142,822	150,586
Total current liabilities	461,726	886,531
Long-term debt, less current maturities (Note 9)	592,474	591,505
Deferred income taxes (Note 11)	23,322	26,991
Accrued postretirement benefits (Note 12)	11,174	13,725
Accrued pension benefits (Note 12)	162,829	145,797
Accrued income taxes	9,038	6,249
Other liabilities	21,002	24,612
Total liabilities	1,281,565	1,695,410
Commitments and contingencies (Note 18)		
EQUITY		
Kennametal Shareholders' Equity:		
Preferred stock, no par value; 5,000 shares authorized; none issued	—	—
Capital stock, $1.25 par value; 120,000 shares authorized; 82,421 and 81,646 shares issued, respectively	103,026	102,058
Additional paid-in capital	528,827	511,909
Retained earnings	1,076,862	900,683
Accumulated other comprehensive loss (Note 13)	(373,543)	(320,325)
Total Kennametal Shareholders' Equity	1,335,172	1,194,325
Noncontrolling interests	39,532	36,002
Total equity	1,374,704	1,230,327
Total liabilities and equity	$ 2,656,269	$ 2,925,737

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

CONSOLIDATED STATEMENTS OF CASH FLOW

Year ended June 30 (in thousands)	2019	2018	2017
OPERATING ACTIVITIES			
Net income	$ 247,876	$ 205,060	$ 51,980
Adjustments for non-cash items:			
Depreciation	97,641	94,012	91,078
Amortization	14,411	14,668	16,578
Stock-based compensation expense	22,845	20,830	21,065
Restructuring and asset impairment charges (Notes 2 and 14)	(203)	(248)	1,802
Deferred income tax provision	2,806	22,915	6,267
Other	2,654	4,651	94
Changes in certain assets and liabilities:			
Accounts receivable	17,323	(22,201)	(7,606)
Inventories	(53,387)	(37,230)	(24,300)
Accounts payable and accrued liabilities	(49,378)	(5,046)	54,554
Accrued income taxes	9,013	11,093	6,873
Accrued pension and postretirement benefits	(8,186)	(26,759)	(27,818)
Other	(2,896)	(4,441)	4,771
Net cash flow provided by operating activities	300,519	277,304	195,338
INVESTING ACTIVITIES			
Purchases of property, plant and equipment	(212,343)	(171,004)	(118,018)
Disposals of property, plant and equipment	11,243	14,358	5,023
Other	(381)	(225)	247
Net cash flow used for investing activities	(201,481)	(156,871)	(112,748)
FINANCING ACTIVITIES			
Net (decrease) increase in notes payable	(715)	495	(317)
Net decrease in short-term revolving and other lines of credit	(174)	—	—
Term debt borrowings	—	295,863	25,298
Term debt repayments	(400,000)	(190)	(25,899)
Purchase of capital stock	(214)	(217)	(241)
The effect of employee benefit and stock plans and dividend reinvestment	(4,744)	17,975	18,319
Cash dividends paid to Shareholders	(65,746)	(65,104)	(64,128)
Other	161	(1,625)	(6,317)
Net cash flow (used for) provided by financing activities	(471,432)	247,197	(53,285)
Effect of exchange rate changes on cash and cash equivalents	(1,744)	(2,106)	(255)
CASH AND CASH EQUIVALENTS			
Net (decrease) increase in cash and cash equivalents	(374,138)	365,524	29,050
Cash and cash equivalents, beginning of year	556,153	190,629	161,579
Cash and cash equivalents, end of year	$ 182,015	$ 556,153	$ 190,629

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

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

	2019		2018		2017	
Year ended June 30 (in thousands)	Shares	Amount	Shares	Amount	Shares	Amount
CAPITAL STOCK						
Balance at beginning of year	81,646	$ 102,058	80,665	$ 100,832	79,694	$ 99,618
Dividend reinvestment	6	7	5	7	7	9
Capital stock issued under employee benefit and stock plans	775	968	981	1,226	971	1,214
Purchase of capital stock	(6)	(7)	(5)	(7)	(7)	(9)
Balance at end of year	82,421	103,026	81,646	102,058	80,665	100,832
ADDITIONAL PAID-IN CAPITAL						
Balance at beginning of year		511,909		474,547		436,617
Dividend reinvestment		207		210		235
Capital stock issued under employee benefit and stock plans		16,918		37,362		37,930
Purchase of capital stock		(207)		(210)		(235)
Balance at end of year		528,827		511,909		474,547
RETAINED EARNINGS						
Balance at beginning of year		900,683		765,607		780,597
Net income		241,925		200,180		49,138
Cash dividends		(65,746)		(65,104)		(64,128)
Balance at end of year		1,076,862		900,683		765,607
ACCUMULATED OTHER COMPREHENSIVE LOSS						
Balance at beginning of year		(320,325)		(323,692)		(352,509)
Unrealized gain (loss) on derivatives designated and qualified as cash flow hedges		197		(922)		(471)
Reclassification of unrealized loss on expired derivatives designated and qualified as cash flow hedges		1,348		3,747		1,557
Unrecognized net pension and other postretirement benefit (loss) gain		(39,639)		(5,991)		15,559
Reclassification of net pension and other postretirement benefit loss		5,124		7,274		7,566
Foreign currency translation adjustments		(20,248)		(741)		4,606
Other comprehensive (loss) income, net of tax		(53,218)		3,367		28,817
Balance at end of year		(373,543)		(320,325)		(323,692)
NONCONTROLLING INTERESTS						
Balance at beginning of year		36,002		35,359		31,478
Net income		5,951		4,880		2,842
Other comprehensive (loss) income, net of tax		(537)		(749)		1,282
Additions to noncontrolling interests		443		591		—
Cash dividends		(2,327)		(4,079)		(243)
Balance at end of year		39,532		36,002		35,359
Total equity, June 30		$ 1,374,704		$ 1,230,327		$ 1,052,653

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

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1 — NATURE OF OPERATIONS

With more than 80 years of materials expertise, the Company is a global industrial technology leader, helping customers across the aerospace, earthworks, energy, general engineering and transportation end markets manufacture with precision and efficiency. This expertise includes the development and application of tungsten carbides, ceramics, super-hard materials and solutions used in metal cutting and extreme wear applications to keep customers up and running longer against conditions such as corrosion and high temperatures.

Our standard and custom product offering spans metalworking and wear applications including turning, milling, hole making, tooling systems and services, as well as specialized wear components and metallurgical powders. End users of the Company's metalworking products include manufacturers engaged in a diverse array of industries including: the manufacturers of transportation vehicles and components, machine tools and light and heavy machinery; airframe and aerospace components; and energy-related components for the oil and gas industry, as well as power generation. The Company’s wear and metallurgical powders are used by producers and suppliers in equipment-intensive operations such as road construction, mining, quarrying, oil and gas exploration, refining, production and supply.

Unless otherwise specified, any reference to a “year” is to a fiscal year ended June 30. When used in this Annual Report on Form 10-K, unless the context requires otherwise, the terms “we,” “our” and “us” refer to Kennametal Inc. and its subsidiaries.

NOTE 2 — SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The summary of our significant accounting policies is presented below to assist in evaluating our consolidated financial statements.

PRINCIPLES OF CONSOLIDATION The consolidated financial statements include our accounts and those of our majority-owned subsidiaries. All significant intercompany balances and transactions are eliminated. Investments in entities of less than 50 percent of the voting stock over which we have significant influence are accounted for on an equity basis. The factors used to determine significant influence include, but are not limited to, our management involvement in the investee, such as hiring and setting compensation for management of the investee, the ability to make operating and capital decisions of the investee, representation on the investee’s board of directors and purchase and supply agreements with the investee. Investments in entities of less than 50 percent of the voting stock in which we do not have significant influence are accounted for on the cost basis.

USE OF ESTIMATES IN THE PREPARATION OF FINANCIAL STATEMENTS In preparing our consolidated financial statements in conformity with accounting principles generally accepted in the United States of America (U.S. GAAP), we make judgments and estimates about the amounts reflected in our financial statements. As part of our financial reporting process, our management collaborates to determine the necessary information on which to base our judgments and develop estimates used to prepare the financial statements. We use historical experience and available information to make these judgments and estimates. However, different amounts could be reported using different assumptions and in light of different facts and circumstances. Therefore, actual amounts could differ from the estimates reflected in our financial statements.

CASH AND CASH EQUIVALENTS Cash investments having original maturities of three months or less are considered cash equivalents. Cash equivalents principally consist of investments in money market funds and bank deposits at June 30, 2019.

ACCOUNTS RECEIVABLE We market our products to a diverse customer base throughout the world. Trade credit is extended based upon periodically updated evaluations of each customer’s ability to satisfy its obligations. We make judgments as to our ability to collect outstanding receivables and provide allowances for the portion of receivables when collection becomes doubtful. Accounts receivable reserves are determined based upon an aging of accounts and a review of specific accounts.

INVENTORIES We use the last-in, first-out (LIFO) method for determining the cost of a significant portion of our United States (U.S.) inventories, and they are stated at the lower of cost or market. The cost of the remainder of our inventories is measured using approximate costs determined on the first-in, first-out basis or using the average cost method, and are stated at the lower of cost or net realizable value. When market conditions indicate an excess of carrying costs over market value, a lower of cost or net realizable value provision or a lower of cost or market provision, as applicable, is recorded. Excess and obsolete inventory reserves are established based upon our evaluation of the quantity of inventory on hand relative to demand. The excess and obsolete inventory reserve at June 30, 2019 and 2018 was $37.4 million and $31.3 million, respectively.

PROPERTY, PLANT AND EQUIPMENT Property, plant and equipment are carried at cost. Major improvements are capitalized, while maintenance and repairs are expensed as incurred. Retirements and disposals are removed from cost and accumulated depreciation accounts, with the gain or loss reflected in operating income. Interest related to the construction of major facilities is capitalized as part of the construction costs and is depreciated over the facilities' estimated useful lives.

Depreciation for financial reporting purposes is computed using the straight-line method over the following estimated useful lives: building and improvements over 15-40 years; machinery and equipment over 4-15 years; furniture and fixtures over 5-10 years and computer hardware and software over 3-5 years.

Leased property and equipment under capital leases are depreciated using the straight-line method over the terms of the related leases.

LONG-LIVED ASSETS We evaluate the recoverability of property, plant and equipment and intangible assets that are amortized, whenever events or changes in circumstances indicate the carrying amount of any such assets may not be fully recoverable. Changes in circumstances include technological advances, changes in our business model, capital structure, economic conditions or operating performance. Our evaluation is based upon, among other things, our assumptions about the estimated future undiscounted cash flows these assets are expected to generate. When the sum of the undiscounted cash flows is less than the carrying value of the asset or asset group, we will recognize an impairment loss to the extent that carrying value exceeds fair value. We apply our best judgment when performing these evaluations to determine if a triggering event has occurred, the undiscounted cash flows used to assess recoverability and the fair value of the asset.

GOODWILL AND OTHER INTANGIBLE ASSETS Goodwill represents the excess of cost over the fair value of the net assets of acquired companies. Goodwill and other intangible assets with indefinite lives are tested at least annually for impairment. We perform our annual impairment tests during the June quarter in connection with our annual planning process unless there are impairment indicators based on the results of an ongoing cumulative qualitative assessment that warrant a test prior to that quarter. We evaluate the recoverability of goodwill for each of our reporting units by comparing the fair value of each reporting unit with its carrying value. The fair values of our reporting units are determined using a combination of a discounted cash flow analysis and market multiples based upon historical and projected financial information. We apply our best judgment when assessing the reasonableness of the financial projections used to determine the fair value of each reporting unit. We evaluate the recoverability of indefinite-lived intangible assets using a discounted cash flow analysis based on projected financial information. This evaluation is sensitive to changes in market interest rates and other external factors.

The majority of our intangible assets with definite lives are amortized on a straight-line basis, while certain customer-related intangible assets are amortized on an accelerated method. Identifiable assets with finite lives are reviewed for impairment when events or circumstances indicate that the carrying value may not be recoverable.

We performed our annual goodwill and indefinite-lived intangible assets impairment test during the June quarter of fiscal 2019 and concluded that there was no impairment.

PENSION AND OTHER POSTRETIREMENT BENEFITS We sponsor these types of benefit plans for certain employees and retirees. Accounting for the cost of these plans requires the estimation of the cost of the benefits to be provided well into the future and attributing that cost over either the expected work life of employees or over average life of participants participating in these plans, depending on plan status and on participant population. This estimation requires our judgment about the discount rate used to determine these obligations, expected return on plan assets, rate of future compensation increases, rate of future health care costs, withdrawal and mortality rates and participant retirement age. Differences between our estimates and actual results may significantly affect the cost of our obligations under these plans.

In the valuation of our pension and other postretirement benefit liabilities, management utilizes various assumptions. Discount rates are derived by identifying a theoretical settlement portfolio of high quality corporate bonds sufficient to provide for a plan’s projected benefit payments. This rate can fluctuate based on changes in the corporate bond yields.

The long-term rate of return on plan assets is estimated based on an evaluation of historical returns for each asset category held by the plans, coupled with the current and short-term mix of the investment portfolio. The historical returns are adjusted for expected future market and economic changes. This return will fluctuate based on actual market returns and other economic factors.

The rate of future health care costs is based on historical claims and enrollment information projected over the next year and adjusted for administrative charges. This rate is expected to decrease until 2027.

Future compensation rates, withdrawal rates and participant retirement age are determined based on historical information. These assumptions are not expected to significantly change. Mortality rates are determined based on a review of published mortality tables.

EARNINGS PER SHARE Basic earnings per share is computed using the weighted average number of shares outstanding during the period, while diluted earnings per share is calculated to reflect the potential dilution that would occur related to the issuance of capital stock under stock option grants, performance awards and restricted stock units. The difference between basic and diluted earnings per share relates solely to the effect of capital stock options, performance awards and restricted stock units.

The following tables provide the computation of diluted shares outstanding:

(in thousands)	2019	2018	2017
Weighted-average shares outstanding during period	82,379	81,544	80,351
Add: Unexercised stock options and unvested restricted stock units	912	1,210	818
Number of shares on which diluted earnings per share is calculated	83,291	82,754	81,169
Unexercised stock options with an exercise price greater than the average market price and restricted stock units not included in the computation because they were anti-dilutive	427	381	1,412

REVENUE RECOGNITION The Company's contracts with customers are comprised of purchase orders, and for larger customers, may also include long-term agreements. We account for a contract when it has approval and commitment from both parties, the rights of the parties and payment terms are identified, the contract has commercial substance and collectability of consideration is probable. These contracts with customers typically relate to the manufacturing of products, which represent single performance obligations that are satisfied when control of the product passes to the customer. The Company considers the timing of right to payment, transfer of risk and rewards, transfer of title, transfer of physical possession and customer acceptance when determining when control transfers to the customer. As a result, revenue is generally recognized at a point in time - either upon shipment or delivery - based on the specific shipping terms in the contract. The shipping terms vary across all businesses and depend on the product, customary local commercial terms and the type of transportation. Shipping and handling activities are accounted for as activities to fulfill a promise to transfer a product to a customer and as such, costs incurred are recorded when the related revenue is recognized. Payment for products is due within a limited time period after shipment or delivery, typically within 30 to 90 calendar days of the respective invoice dates. The Company does not generally offer extended payment terms.

Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods. Amounts billed and due from our customers are classified as accounts receivable, less allowance for doubtful accounts on the consolidated balance sheet. Certain contracts with customers, primarily distributor customers, have an element of variable consideration that is estimated when revenue is recognized under the contract. Variable consideration primarily includes volume incentive rebates, which are based on achieving a certain level of purchases and other performance criteria as established by our distributor programs. These rebates are estimated based on projected sales to the customer and accrued as a reduction of net sales as they are earned. The majority of our products are consumed by our customers or end users in the manufacture of their products. Historically, we have experienced very low levels of returned products and do not consider the effect of returned products to be material. We have recorded an estimated returned goods allowance to provide for any potential returns.

We warrant that products sold are free from defects in material and workmanship under normal use and service when correctly installed, used and maintained. This warranty terminates 30 days after delivery of the product to the customer and does not apply to products that have been subjected to misuse, abuse, neglect or improper storage, handling or maintenance. Products may be returned to Kennametal only after inspection and approval by Kennametal and upon receipt by the customer of shipping instructions from Kennametal. We have included an estimated allowance for warranty returns in our returned goods allowance discussed above.

See "Note 19. Segment Data" for disaggregation of revenue by geography and end market.

The Company records a contract asset when it has a right to payment from a customer that is conditioned on events that have occurred other than the passage of time. The Company also records a contract liability when customers prepay but the Company has not yet satisfied its performance obligation. The Company did not have any material remaining performance obligations, contract assets or liabilities as of June 30, 2019 and 2018.

The Company pays sales commissions related to certain contracts, which qualify as incremental costs of obtaining a contract. However, the Company applies the practical expedient that allows an entity to recognize incremental costs of obtaining a contract as an expense when incurred if the amortization period of the asset that would have been recognized is one year or less. These costs are recorded within operating expense in our condensed consolidated statement of income.

STOCK-BASED COMPENSATION We recognize stock-based compensation expense for all stock options, restricted stock awards and restricted stock units over the period from the date of grant to the date when the award is no longer contingent on the employee providing additional service (substantive vesting period), net of expected forfeitures. We utilize the Black-Scholes valuation method to establish the fair value of all stock option awards. Time vesting stock units are valued at the market value of the stock on the grant date. Performance vesting stock units with a market condition are valued using a Monte Carlo model.

Capital stock options are granted to eligible employees at fair market value at the date of grant. Capital stock options are exercisable under specified conditions for up to 10 years from the date of grant. The Kennametal Inc. Stock and Incentive Plan of 2010, as Amended and Restated on October 22, 2013, and as further amended January 27, 2015 (A/R 2010 Plan) and the Kennametal Inc. 2016 Stock and Incentive Plan (2016 Plan) authorize the issuance of up to 9,500,000 shares of the Company's capital stock plus any shares remaining unissued under the Kennametal Inc. Stock and Incentive Plan of 2002, as amended (2002 Plan). Under the provisions of the A/R 2010 Plan and 2016 Plan participants may deliver stock, owned by the holder for at least six months, in payment of the option price and receive credit for the fair market value of the shares on the date of delivery. The fair market value of shares delivered during 2019, 2018 and 2017 was immaterial. In addition to stock option grants, the A/R 2010 Plan and the 2016 Plan permit the award of stock appreciation rights, performance share awards, performance unit awards, restricted stock awards, restricted unit awards and share awards to directors, officers and key employees.

RESEARCH AND DEVELOPMENT COSTS Research and development costs of $39.0 million, $38.9 million and $38.0 million in 2019, 2018 and 2017, respectively, were expensed as incurred. These costs are included in operating expense in the consolidated statements of income.

SHIPPING AND HANDLING FEES AND COSTS All fees billed to customers for shipping and handling are classified as a component of sales. All costs associated with shipping and handling are classified as a component of cost of goods sold.

INCOME TAXES Deferred income taxes are recognized based on the future income tax effects (using enacted tax laws and rates) of differences in the carrying amounts of assets and liabilities for financial reporting and tax purposes. A valuation allowance is recognized if it is "more likely than not" that some or all of a deferred tax asset will not be realized.

DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES As part of our financial risk management program, we use certain derivative financial instruments. We do not enter into derivative transactions for speculative purposes and, therefore, hold no derivative instruments for trading purposes. We use derivative financial instruments to provide predictability to the effects of changes in foreign exchange rates on our consolidated results. Our objective in managing foreign exchange exposures with derivative instruments is to reduce volatility in cash flow, allowing us to focus more of our attention on business operations.

We account for derivative instruments as a hedge of the related asset, liability, firm commitment or anticipated transaction, when the derivative is specifically designated as a hedge of such items. We measure hedge effectiveness by assessing the changes in the fair value or expected future cash flows of the hedged item. The ineffective portions are recorded in other income, net. Certain currency forward contracts hedging significant cross-border intercompany loans are considered other derivatives and, therefore, do not qualify for hedge accounting. These contracts are recorded at fair value in the balance sheet, with the offset to other income, net.

CASH FLOW HEDGES *Currency* Forward contracts and range forward contracts (a transaction where both a put option is purchased and a call option is sold) are designated as cash flow hedges and hedge anticipated cash flows from cross-border intercompany sales of products and services. Gains and losses realized on these contracts are recorded in accumulated other comprehensive loss, and are recognized as a component of other income, net when the underlying sale of products or services is recognized into earnings.

FAIR VALUE HEDGES *Interest Rate* Fixed-to-floating interest rate swap contracts, designated as fair value hedges, may be entered into from time to time to hedge our exposure to fair value fluctuations on a portion of our fixed rate debt. These interest rate swap contracts convert a portion of our fixed rate debt to floating rate debt. When in place, these contracts require periodic settlement, and the difference between amounts to be received and paid under the contracts is recognized in interest expense.

NET INVESTMENT HEDGES We designate financial instruments as net investment hedges from time to time to hedge the foreign exchange exposure of our net investment in foreign currency-based subsidiaries. The remeasurements of these non-derivatives designated as net investment hedges are calculated each period with changes reported in foreign currency translation adjustment within accumulated other comprehensive loss. Such amounts will remain in accumulated other comprehensive loss unless we complete or substantially complete liquidation or disposal of our investment in the underlying foreign operations.

CURRENCY TRANSLATION Assets and liabilities of international operations are translated into U.S. dollars using year-end exchange rates, while revenues and expenses are translated at average exchange rates throughout the year. The resulting net translation adjustments are recorded as a component of accumulated other comprehensive loss. The local currency is the functional currency of most of our locations.

Losses of $2.7 million, $6.4 million and $6.7 million from currency transactions were included in other income, net in 2019, 2018 and 2017, respectively.

NEW ACCOUNTING STANDARDS

Adopted
In May 2014, the Financial Accounting Standards Board (FASB) issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)," which requires an entity to recognize revenue in a manner that depicts the transfer of promised goods to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange. The standard also expands the disclosure requirements around contracts with customers. We adopted Topic 606 on July 1, 2018 using the modified retrospective transition method applied to those contracts that were not completed as of that date. The adoption did not have a material impact on the condensed consolidated financial statements beyond the additional disclosure requirements. Refer to the "Revenue Recognition" section of this Note 2 and to Note 19 to the consolidated financial statements for further details.

In August 2016, the FASB issued ASU No. 2016-15, "Classification of Certain Cash Receipts and Cash Payments (a consensus of the Emerging Issues Task Force)," which addresses eight specific cash flow issues with the objective of reducing the existing diversity in practice with respect to how these are classified in the statement of cash flows. We adopted this ASU on July 1, 2018. Adoption of this guidance did not have a material effect on our consolidated financial statements.

In October 2016, the FASB issued ASU No. 2016-16, "Intra-Entity Transfers of Assets Other Than Inventory," which clarifies that an entity should recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. We adopted this ASU on July 1, 2018. Adoption of this guidance did not have a material effect on our consolidated financial statements.

In March 2017, the FASB issued ASU No. 2017-07, "Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost," which requires that an employer report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net benefit cost are required to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations. We adopted this ASU on July 1, 2018, with the amendments applied on a retrospective basis. Refer to Note 12 to the consolidated financial statements for further details.

In May 2017, the FASB issued ASU No. 2017-09, "Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting," which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. We adopted this ASU on July 1, 2018. Adoption of this guidance did not have a material effect on our condensed consolidated financial statements.

Issued
In August 2018, the FASB issued ASU 2018-15, "Intangibles - Goodwill and Other - Internal-use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract." The standard requires implementation costs incurred by customers in cloud computing arrangements to be capitalized and amortized under the same premises of authoritative guidance for internal-use software. This standard is effective for Kennametal beginning July 1, 2020. We are in the process of assessing the impact the adoption of this guidance will have on our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-14, "Compensation - Retirement Benefits - Defined Benefit Plans - General: Disclosure Framework - Changes to Disclosure Requirements for Defined Benefit Plans." The standard modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. This standard is effective for Kennametal beginning July 1, 2021. We are in the process of assessing the impact the adoption of this guidance will have on our consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07, “Improvements to Nonemployee Share-Based Payment Accounting" which expands the scope of accounting for stock-based compensation to nonemployees. This guidance is effective for Kennametal July 1, 2019. We do not expect the adoption of this guidance to have a material effect on our consolidated financial statements.

In February 2018, the FASB issued ASU No. 2018-02, “Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income," which includes amendments allowing the reclassification of the income tax effects of the Tax Cuts and Jobs Act of 2017 (TCJA) to improve the usefulness of information reported to financial statement users. The amendments in this update also require certain disclosures about stranded tax effects. Certain guidance is optional and is effective for Kennametal July 1, 2019, although early adoption is permitted. We elected not to reclassify the stranded tax effects as permissable under this standard. We do not expect the adoption of this guidance to have a material effect on the consolidated financial statements.

In August 2017, the FASB issued ASU No. 2017-12, "Targeted Improvements to Accounting for Hedging Activities," which seeks to improve financial reporting and obtain closer alignment with risk management activities, in addition to simplifying the application of hedge accounting guidance and additional disclosures. This guidance is effective for Kennametal July 1, 2019. We do not expect the adoption of this guidance to have a material effect on our consolidated financial statements.

In June 2016, the FASB issued ASU No. 2016-13, "Measurement of Credit Losses on Financial Instruments," which introduces an approach based on expected losses to estimate credit losses on certain types of financial instruments. Beyond other modifications in the update, the scope of this amendment includes valuation of trade receivables. This standard is effective for Kennametal beginning July 1, 2020. We are in the process of assessing the impact the adoption of this guidance will have on our consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, "Leases: Topic 842," which replaces the existing guidance in ASC 840, Leases. The standard establishes a right-of-use (ROU) model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. This standard is effective for Kennametal beginning July 1, 2019. We expect to elect the optional transition relief that allows for a cumulative-effect adjustment in the period of adoption and not restate prior periods. We expect to elect the package of practical expedients permitted under the transition guidance within the new standard, which among other things, allows us to carryforward our historical lease classification. We also expect to elect the short-term lease measurement and recognition exemption, which means that leases with an initial term of 12 months or less would not be recorded on the consolidated balance sheet. We are nearly complete in assessing the effect the adoption will have on our consolidated financial statements and expect to record a right-of-use asset and lease liability, each in the range of $45 million to $55 million, on the consolidated balance sheet for several types of operating leases, including land and buildings, vehicles and equipment.

NOTE 3 — SUPPLEMENTAL CASH FLOW DISCLOSURES

Year ended June 30 (in thousands)	2019	2018	2017
Cash paid during the period for:			
Income taxes	$ 51,540	$ 35,974	$ 16,755
Interest	30,265	27,887	27,529
Supplemental disclosure of non-cash information:			
Changes in accounts payable related to purchases of property, plant and equipment	15,500	9,500	(3,900)

NOTE 4 — FAIR VALUE MEASUREMENTS

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy consists of three levels to prioritize the inputs used in valuations, as defined below:

Level 1: Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities.

Level 2: Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly, including quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in markets that are not active; inputs other than quoted prices that are observable for the asset or liability (e.g., interest rates); and inputs that are derived principally from or corroborated by observable market data by correlation or other means.

Level 3: Inputs that are unobservable.

As of June 30, 2019, the fair values of the Company's financial assets and financial liabilities measured at fair value on a recurring basis are categorized as follows:

(in thousands)	Level 1	Level 2	Level 3	Total
Assets:				
Derivatives [1]	$ —	$ 152	$ —	$ 152
Total assets at fair value	$ —	$ 152	$ —	$ 152
Liabilities:				
Derivatives [1]	$ —	$ 55	$ —	$ 55
Total liabilities at fair value	$ —	$ 55	$ —	$ 55

As of June 30, 2018, the fair value of the Company's financial assets and financial liabilities measured at fair value on a recurring basis are categorized as follows:

(in thousands)	Level 1	Level 2	Level 3	Total
Assets:				
Derivatives [1]	$ —	$ 1,665	$ —	$ 1,665
Total assets at fair value	$ —	$ 1,665	$ —	$ 1,665
Liabilities:				
Derivatives [1]	$ —	$ 207	$ —	$ 207
Total liabilities at fair value	$ —	$ 207	$ —	$ 207

[1] Currency derivatives are valued based on observable market spot and forward rates and are classified within Level 2 of the fair value hierarchy.

There have been no changes in classification and transfers between levels in the fair value hierarchy in the current period.

NOTE 5 — DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES

As part of our financial risk management program, we use certain derivative financial instruments. See Note 2 for discussion on our derivative instruments and hedging activities policy.

The fair value of derivatives designated and not designated as hedging instruments in the consolidated balance sheet are as follows:

(in thousands)	2019	2018
Derivatives designated as hedging instruments		
Other current assets - range forward contracts	$ 145	$ 799
Other current liabilities - range forward contracts	—	(5)
Other assets - range forward contracts	—	27
Total derivatives designated as hedging instruments	145	821
Derivatives not designated as hedging instruments		
Other current assets - currency forward contracts	8	839
Other current liabilities - currency forward contracts	(56)	(202)
Total derivatives not designated as hedging instruments	(48)	637
Total derivatives	$ 97	$ 1,458

Certain currency forward contracts that hedge significant cross-border intercompany loans are considered as other derivatives and therefore do not qualify for hedge accounting. These contracts are recorded at fair value in the consolidated balance sheet, with the offset to other income, net. Losses (gains) related to derivatives not designated as hedging instruments have been recognized as follows:

(in thousands)	2019	2018	2017
Other income, net - currency forward contracts	$ 108	$ (122)	$ (873)

FAIR VALUE HEDGES

Fixed-to-floating interest rate swap contracts, designated as fair value hedges, may be entered into from time to time to hedge our exposure to fair value fluctuations on a portion of our fixed rate debt. We had no such contracts outstanding at June 30, 2019 and June 30, 2018.

CASH FLOW HEDGES

Currency forward contracts and range forward contracts (a transaction where both a put option is purchased and a call option is sold) are designated as cash flow hedges and hedge anticipated cash flows from cross-border intercompany sales of products and services. Gains and losses realized on these contracts are recorded in accumulated other comprehensive loss, and are recognized as a component of other income, net when the underlying sale of products or services is recognized into earnings. The notional amount of the contracts translated into U.S. dollars at June 30, 2019 and 2018 was $61.5 million and $62.9 million, respectively. The time value component of the fair value of range forward contracts is excluded from the assessment of hedge effectiveness. Assuming the market rates remain constant with the rates at June 30, 2019, we expect to recognize into earnings in the next 12 months $0.2 million of loss on outstanding derivatives.

The following represents gains and losses related to cash flow hedges:

(in thousands)	2019	2018	2017
Gains (losses) recognized in other comprehensive (loss) income, net	$ 921	$ (922)	$ (471)
Losses reclassified from accumulated other comprehensive loss into other income, net	$ 1,004	$ 3,001	$ 1,557

No portion of the gains or losses recognized in earnings was due to ineffectiveness and no amounts were excluded from our effectiveness testing for the years ended June 30, 2019, 2018 and 2017.

NET INVESTMENT HEDGES

As of June 30, 2019, we had certain foreign currency-denominated intercompany loans payable with total aggregate principal amounts of €22.5 million designated as net investment hedges to hedge the foreign exchange exposure of our net investment in Euro-based subsidiaries. A gain of $2.4 million and losses of $0.7 million and $4.5 million were recorded as a component of foreign currency translation adjustments in other comprehensive (loss) income during 2019, 2018 and 2017, respectively.

As of June 30, 2019, the foreign currency-denominated intercompany loans payable designated as net investment hedges consisted of:

Instrument	Notional (EUR in thousands)[2]	Notional (USD in thousands)[2]	Maturity
Foreign currency-denominated intercompany loan payable	28,125	32,024	June 26, 2022

[2] Includes principal and accrued interest.

NOTE 6 — INVENTORIES

Inventories consisted of the following at June 30:

(in thousands)	2019	2018
Finished goods	$ 311,684	$ 279,240
Work in process and powder blends	246,414	232,973
Raw materials	95,620	96,859
Inventories at current cost	653,718	609,072
Less: LIFO valuation	(82,142)	(83,606)
Total inventories	$ 571,576	$ 525,466

We used the LIFO method of valuing inventories for approximately 41 percent and 40 percent of total inventories at June 30, 2019 and 2018, respectively.

NOTE 7 — GOODWILL AND OTHER INTANGIBLE ASSETS

A summary of the carrying amount of goodwill attributable to each segment, as well as the changes in such, is as follows:

(in thousands)	Industrial	Widia	Infrastructure	Total
Gross goodwill	$ 410,694	$ 41,515	$ 633,211	$ 1,085,420
Accumulated impairment losses	(137,204)	(13,638)	(633,211)	(784,053)
Balance as of June 30, 2017	$ 273,490	$ 27,877	$ —	$ 301,367
Activity for 2018:				
Change in gross goodwill due to translation	764	(329)	—	435
Gross goodwill	411,458	41,186	633,211	1,085,855
Accumulated impairment losses	(137,204)	(13,638)	(633,211)	(784,053)
Balance as of June 30, 2018	$ 274,254	$ 27,548	$ —	$ 301,802
Activity for 2019:				
Change in gross goodwill due to translation	(1,546)	(245)	—	(1,791)
Gross goodwill	409,912	40,941	633,211	1,084,064
Accumulated impairment losses	(137,204)	(13,638)	(633,211)	(784,053)
Balance as of June 30, 2019	$ 272,708	$ 27,303	$ —	$ 300,011

The components of our other intangible assets were as follows:

		June 30, 2019		June 30, 2018	
(in thousands)	Estimated Useful Life (in years)	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Contract-based	3 to 15	$ 7,062	$ (7,062)	$ 7,061	$ (7,036)
Technology-based and other	4 to 20	46,228	(31,890)	46,666	(30,923)
Customer-related	10 to 21	205,213	(94,711)	206,162	(85,301)
Unpatented technology	10 to 30	31,702	(15,492)	31,854	(13,096)
Trademarks	5 to 20	14,755	(9,352)	12,450	(8,978)
Trademarks	Indefinite	14,545	—	17,609	—
Total		$ 319,505	$ (158,507)	$ 321,802	$ (145,334)

Amortization expense for intangible assets was $14.4 million, $14.7 million and $16.6 million for 2019, 2018 and 2017, respectively. Estimated amortization expense for 2019 through 2023 is $14.5 million, $14.2 million, $13.8 million, $13.6 million, and $12.3 million, respectively.

NOTE 8 — OTHER CURRENT LIABILITIES

Other current liabilities consisted of the following at June 30:

(in thousands)	2019	2018
Accrued employee benefits	$ 36,268	$ 48,889
Accrued restructuring (Note 14)	19,212	17,469
Accrued legal and professional fees	13,481	9,291
Payroll, state and local taxes	7,971	10,146
Accrued interest	5,205	7,898
Other	60,685	56,893
Total other current liabilities	$ 142,822	$ 150,586

NOTE 9 — LONG-TERM DEBT

Long-term debt and capital lease obligations consisted of the following at June 30:

(in thousands)	2019	2018
2.650% Senior Unsecured Notes due fiscal 2020, net of discount of $0.1 million for 2018	$ —	$ 399,898
3.875% Senior Unsecured Notes due fiscal 2022, net of discount of $0.1 million for 2019 and 2018	299,903	299,868
4.625% Senior Unsecured Notes due fiscal 2028, net of discount of $2.0 million for 2019 and $2.2 million for 2018	298,046	297,813
Total debt	597,949	997,579
Less unamortized debt issuance costs	(5,475)	(6,808)
Less current maturities:		
Long-term debt	—	(399,266)
Total long-term debt	$ 592,474	$ 591,505

Senior Unsecured Notes On June 7, 2018, we issued $300.0 million of 4.625 percent Senior Unsecured Notes with a maturity date of June 15, 2028. Interest will be paid semi-annually on June 15 and December 15 of each year. We used the net proceeds from the offering of the notes, plus cash on hand, for the early extinguishment of our $400.0 million of 2.650 percent Senior Unsecured Notes ($400.0 million Notes) in July of fiscal 2019. The $400 million Notes, with an original maturity date of November 1, 2019, were reclassified to current maturities of long-term debt as of June 30, 2018, since our notification of early redemption to bondholders in June 2018 created an irrevocable commitment to redeem the debt. Interest on the $400 million Notes was paid semi-annually on May 1 and November 1 of each year. On February 14, 2012, we issued $300 million of 3.875 percent Senior Unsecured Notes with a maturity date of February 15, 2022. Interest on these Notes is paid semi-annually on February 15 and August 15 of each year.

Credit Agreement The five-year, multi-currency, revolving credit facility, as amended and restated in June 2018 (Credit Agreement) provides for revolving credit loans of up to $700.0 million for working capital, capital expenditures and general corporate purposes. The Credit Agreement matures in June 2023 and allows for borrowings in U.S. dollars, euros, Canadian dollars, pounds sterling and Japanese yen. Interest payable under the Credit Agreement is based upon the type of borrowing under the facility and may be (1) LIBOR plus an applicable margin, (2) the greater of the prime rate or the Federal Funds effective rate plus an applicable margin, or (3) fixed as negotiated by us.

The Credit Agreement requires us to comply with various restrictive and affirmative covenants, including two financial covenants: a maximum leverage ratio and a minimum consolidated interest coverage ratio (as those terms are defined in the Credit agreement). We were in compliance with all covenants as of June 30, 2019. We had no borrowings outstanding under the Credit Agreement as of June 30, 2019 and 2018. Borrowings under the Credit Agreement are guaranteed by our significant domestic subsidiaries.

Future principal maturities of long-term debt are $300 million in 2022 and $300 million in 2028.

NOTE 10 — NOTES PAYABLE AND LINES OF CREDIT

Notes payable to banks of $0.2 million and $0.9 million at June 30, 2019 and 2018, respectively, represent short-term borrowings under credit lines with commercial banks in the various countries in which we operate. These credit lines, translated into U.S. dollars at June 30, 2019 exchange rates, totaled $70.9 million at June 30, 2019, of which $70.7 million was unused.

NOTE 11 — INCOME TAXES

Income before income taxes consisted of the following for the years ended June 30:

(in thousands)	2019	2018	2017
Income (loss) before income taxes:			
United States	$ 60,756	$ 57,109	$ (23,055)
International	250,479	217,932	104,930
Total income before income taxes	$ 311,235	$ 275,041	$ 81,875
Current income taxes:			
Federal	$ 5,679	$ 3,755	$ (1,455)
State	321	(816)	172
International	54,553	44,127	24,911
Total current income taxes	60,553	47,066	23,628
Deferred income taxes:			
Federal	$ (3,606)	$ 1,121	$ 298
State	45	3,552	(867)
International	6,367	18,242	6,836
Total deferred income taxes:	2,806	22,915	6,267
Provision for income taxes	$ 63,359	$ 69,981	$ 29,895
Effective tax rate	20.4%	25.4%	36.5%

Tax Cuts and Jobs Act of 2017 (TCJA)

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (TCJA) was signed into law in the U.S. TCJA amends the Internal Revenue Code of 1986 to reduce tax rates and modify policies, credits and deductions for individuals and corporations. For corporations, TCJA reduced the federal tax rate from a maximum of 35.0 percent to a flat 21.0 percent rate and eliminated U.S. federal taxes on most future foreign earnings. TCJA also added many new provisions including changes to bonus depreciation, the deduction for executive compensation and interest expense, a tax on global intangible low-taxed income (GILTI), the base erosion anti-abuse tax (BEAT) and a deduction for foreign-derived intangible income (FDII). The three primary items from TCJA that effected the Company for fiscal 2019 are the reduction in the statutory tax rate, the one-time tax that was imposed on our unremitted foreign earnings (toll tax) and the tax on global intangible low-taxed income (GILTI) which we elected to record as a period cost. BEAT and FDII did not have an impact on our 2019 income tax provision.

The U.S. federal tax rate reduction was effective January 1, 2018. As a June 30 fiscal year-end taxpayer, our 2018 fiscal year U.S. federal statutory tax rate was a blended rate of 28.1 percent, and our 2019 U.S. federal statutory tax rate was 21.0 percent.

The finalized total toll tax charge is $71.2 million as of June 30, 2019. Based on regulations issued by the U.S. Department of the Treasury and the Internal Revenue Service and other relevant guidance issued through June 30, 2019, we recorded a net benefit of $9.3 million during the year ended June 30, 2019 to adjust the toll tax charge. We did not make a cash payment associated with the toll tax.

In accordance with the SEC Staff Accounting Bulletin 118, in the December quarter of fiscal 2019 we finalized our accounting for the impacts of the TCJA provisions enacted in fiscal 2018, including the remeasurement of deferred tax assets and liabilities at the reduced U.S. federal rate of 21.0 percent.

The reconciliation of income taxes computed using the statutory U.S. income tax rate and the provision for income taxes was as follows for the years ended June 30:

(in thousands)	2019	2018	2017
Income taxes at U.S. statutory rate	$ 65,359	$ 77,286	$ 28,656
State income taxes, net of federal tax benefit	289	2,975	(306)
U.S. income taxes provided on international income	7,347	1,010	10,273
Combined tax effects of international income	162	(9,333)	(11,530)
Change in valuation allowance and other uncertain tax positions	(1,473)	(90,817)	5,163
U.S. research and development credit	(3,911)	(3,141)	(1,895)
Change in permanent reinvestment assertion	6,093	—	—
Combined effects of U.S. tax reform	(9,280)	86,044	—
Adjustment to deferred tax charges on intra-entity transfers	—	5,297	—
Other	(1,227)	660	(466)
Provision for income taxes	$ 63,359	$ 69,981	$ 29,895

During 2019, we recorded a net tax benefit of $9.3 million associated with the finalization of our toll tax charge which included a benefit of $15.0 million for the toll tax charge and a $5.3 million charge for an unrecognized tax benefit. The impact of these items is included in the tax reconciliation table under the caption “Combined effects of U.S. tax reform.”

During 2019, we recorded a charge of $6.1 million related to a change in assertion with respect to a portion of the unremitted earnings and profits of certain non-U.S. subsidiaries and affiliates. The impact of this item is included in the tax reconciliation table under the caption “Change in permanent reinvestment assertion.”

During 2019, we released a $1.1 million valuation allowance that was previously recorded against the net deferred tax assets of our Australian subsidiary. The impact of this item is included in the tax reconciliation table under the caption “Change in valuation allowance and other uncertain tax positions.”

During 2018, we recorded a charge for the combined effects of tax reform of $86.0 million, which included $80.9 million for the toll tax charge and a net charge in our U.S. provision of $5.1 million for revaluation of U.S. net deferred taxes. The impact of these items is included in the tax reconciliation table under the caption “Combined effects of tax reform.” The revaluation of U.S. net deferred taxes was preliminary and subject to finalization of the 2018 U.S. federal income tax return.

During 2018, we released $91.3 million of the U.S. valuation allowance that was previously recorded against our net deferred tax assets in the U.S., including deferred tax assets related to items of Other Comprehensive Income. The valuation allowance release was triggered by utilization of a significant portion of our deferred tax assets to satisfy the toll tax provision in TCJA.

During 2017, we recorded a valuation allowance against the net deferred tax assets of our Australian subsidiary. The impact of the valuation allowance was approximately $1.3 million and is included in the tax reconciliation table under the caption "change in valuation allowance and other uncertain tax positions."

The components of net deferred tax assets and liabilities were as follows at June 30:

(in thousands)		2019		2018
Deferred tax assets:				
Net operating loss (NOL) carryforwards	$	28,886	$	39,884
Inventory valuation and reserves		8,230		10,023
Pension benefits		21,445		15,750
Other postretirement benefits		4,752		3,996
Accrued employee benefits		16,029		15,697
Other accrued liabilities		7,758		9,386
Tax credits and other carryforwards		4,733		644
Total		91,833		95,380
Valuation allowance		(14,614)		(21,629)
Total deferred tax assets	$	77,219	$	73,751
Deferred tax liabilities:				
Tax depreciation in excess of book	$	74,645	$	77,106
Intangible assets		4,259		537
Other		1,130		6,084
Total deferred tax liabilities	$	80,034	$	83,727
Total net deferred tax liabilities	$	(2,815)	$	(9,976)

As noted previously, TCJA reduced the statutory Federal income tax rate from 35.0 percent to 21.0 percent. The table above reflects deferred taxes calculated using the U.S. Federal rates, which was at the 21.0 percent rate as of June 30, 2019 and 2018.

During 2018, we identified an error related to the tax rate that had historically been used to calculate the deferred tax charge on intra-entity product transfers. This resulted in an overstatement of deferred tax assets of $8.2 million as of June 30, 2017. During 2018, $2.9 million of this amount was corrected in connection with the release of the U.S. valuation allowance. Therefore, the out of period adjustment recorded resulted in a further increase of $5.3 million to the provision for income taxes during 2018. The remaining balance related to this item was reclassified and included in other current assets. The impact to the effective tax rate was 1.9 percent in 2018. After evaluation, we determined that the impact of the adjustment was not material to the previously issued financial statements, nor are the out of period adjustments material to the 2018 results.

Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not (greater than 50 percent) that a tax benefit will not be realized. In evaluating the need for a valuation allowance, we consider all potential sources of taxable income, including income available in carryback periods, future reversals of taxable temporary differences, projections of taxable income, and income from tax planning strategies, as well as all available positive and negative evidence. Positive evidence includes factors such as a history of profitable operations, and projections of future profitability within the carry forward period, including taxable income from tax planning strategies. Negative evidence includes items such as cumulative losses, projections of future losses, or carryforward periods that are not long enough to allow for the utilization of the deferred tax asset based on existing projections of income. Upon changes in facts and circumstances, we may conclude that deferred tax assets for which no valuation allowance is currently recorded may not be realized, resulting in a future charge to establish a valuation allowance. Existing valuation allowances are re-examined under the same standards of positive and negative evidence. If it is determined that it is more likely than not that a deferred tax asset will be realized, the appropriate amount of the valuation allowance, if any, is released.

In 2016, we recorded a valuation allowance of $105.9 million against our net deferred tax assets in the U.S. During 2018, we released $91.3 million of the valuation allowance, which was triggered by utilization of a significant portion of our deferred tax assets to satisfy the toll tax provision in TCJA. A valuation allowance on certain state NOLs in the amount of $9.7 million remains recorded on our U.S. deferred tax assets.

Included in deferred tax assets at June 30, 2019 is $4.7 million associated with tax credits and other carryforward items primarily in federal and state jurisdictions. Of that amount, $0.1 million expires through 2024, $4.4 million expires through 2039 and $0.2 million does not expire.

Included in deferred tax assets at June 30, 2019 is $28.9 million associated with NOL carryforwards in state and foreign jurisdictions. Of that amount, $7.4 million expires through 2024, $1.7 million expires through 2029, $1.3 million expires through 2034, $3.0 million expires through 2039, and the remaining $15.5 million does not expire. The realization of these tax benefits is primarily dependent on future taxable income in these jurisdictions.

A valuation allowance of $14.6 million has been placed against deferred tax assets primarily in the U.S., Brazil and the Netherlands, all of which would be allocated to income tax expense upon realization of the deferred tax assets. As the respective operations generate sufficient income, the valuation allowances will be partially or fully reversed at such time we believe it will be more likely than not that the deferred tax assets will be realized. In 2019, the valuation allowance related to these deferred tax assets decreased by $7.0 million.

As a result of the Tax Cuts and Jobs Act of 2017 (TCJA), which among other provisions allows for a 100 percent dividends received deduction from controlled foreign subsidiaries, we re-evaluated our assertion with respect to permanent reinvestment in all jurisdictions during the current year and concluded that a portion of the unremitted earnings and profits of certain non-U.S. subsidiaries and affiliates will no longer be permanently reinvested. These changes in assertion required the recognition of a tax charge of $6.1 million recorded in the current year primarily for foreign withholding and U.S. state income taxes. The remaining amount of approximately $1.4 billion is substantially all of the unremitted earnings of our non-U.S. subsidiaries which continues to be indefinitely reinvested. The deferred tax liability associated with unremitted earnings of our non-U.S. subsidiaries not permanently reinvested is $3.9 million as of June 30, 2019. Determination of the amount of unrecognized deferred tax liability related to indefinitely reinvested earnings is not practicable due to our legal entity structure and the complexity of U.S. and local tax laws. With regard to the unremitted earnings which remain indefinitely reinvested, we have not, nor do we anticipate the need to, repatriate funds to the U.S. to satisfy domestic liquidity needs arising in the ordinary course of business, including liquidity needs associated with our domestic debt service requirements.

A reconciliation of the beginning and ending amount of unrecognized tax benefits (excluding interest) is as follows as of June 30:

(in thousands)	2019	2018	2017
Balance at beginning of year	$ 5,775	$ 2,632	$ 3,106
Increases for tax positions of prior years	7,384	3,409	—
Decreases related to settlement with taxing authority	(3,765)	—	(231)
Decreases related to lapse of statute of limitations	(324)	(289)	(184)
Foreign currency translation	(118)	23	(59)
Balance at end of year	$ 8,952	$ 5,775	$ 2,632

The total amount of unrecognized tax benefits that, if recognized, would affect the effective tax rate in 2019, 2018 and 2017 is $9.0 million, $5.8 million and $2.6 million, respectively. Our policy is to recognize interest and penalties related to income taxes as a component of the provision for income taxes in the consolidated statement of income. We recognized a decrease of $0.4 million in 2019 and increases of $0.7 million and $0.2 million in 2018 and 2017, respectively. As of June 30, 2019 and 2018 the amount of interest accrued was $0.7 million and $1.1 million, respectively. As of June 30, 2019 and 2018, the amount of penalty accrued was $0.1 million.

With few exceptions, we are no longer subject to income tax examinations by tax authorities for years prior to 2013. The Internal Revenue Service has audited or the statute of limitations has expired for all U.S. tax years prior to 2016. Various state and foreign jurisdiction tax authorities are in the process of examining our income tax returns for various tax years ranging from 2013 to 2016. We continuously review our uncertain tax positions and evaluate any potential issues that may lead to an increase or decrease in the total amount of unrecognized tax benefits recorded.

We believe that it is reasonably possible that the amount of unrecognized tax benefits could decrease by approximately $0.4 million within the next twelve months.

NOTE 12 — PENSION AND OTHER POSTRETIREMENT BENEFITS

Defined Benefit Pension Plans

We have defined benefit pension plans that cover certain employees in the U.S., Germany, the UK, Switzerland, Canada and Israel. Pension benefits under defined benefit pension plans are based on years of service and, for certain plans, on average compensation for specified years preceding retirement. We fund pension costs in accordance with the funding requirements of the Employee Retirement Income Security Act of 1974 (ERISA), as amended, for U.S. plans and in accordance with local regulations or customs for non-U.S. plans. Beginning in 2017, the accrued benefit for all participants in the Kennametal Inc. Retirement Income Plan is frozen as the result of amendment. The majority of our defined benefit pension plans are closed to future participation.

We have an Executive Retirement Plan for various executives and a Supplemental Executive Retirement Plan both of which have been closed to future participation on June 15, 2017 and July 26, 2006, respectively.

We presently provide varying levels of postretirement health care and life insurance benefits to certain employees and retirees. Postretirement health care benefits are available to employees and their spouses retiring on or after age 55 with 10 or more years of service. Beginning with retirements on or after January 1, 1998, our portion of the costs of postretirement health care benefits is capped at 1996 levels. Beginning with retirements on or after January 1, 2009, we have no obligation to provide a company subsidy for retiree medical costs. Postretirement health and life benefits are closed to future participants as of December 31, 2016.

We use a June 30 measurement date for all of our plans.

The funded status of our pension plans and amounts recognized in the consolidated balance sheets as of June 30 were as follows:

(in thousands)	2019	2018
Change in benefit obligation:		
Benefit obligation, beginning of year	$ 902,711	$ 941,094
Service cost	1,627	1,635
Interest cost	31,901	30,751
Participant contributions	—	3
Actuarial losses (gains)	64,648	(24,501)
Benefits and expenses paid	(49,510)	(47,212)
Currency translation adjustments	(6,208)	3,876
Plan amendments	1,465	—
New plans	18,107	—
Plan settlements	—	(2,935)
Benefit obligation, end of year	$ 964,741	$ 902,711
Change in plans' assets:		
Fair value of plans' assets, beginning of year	$ 792,758	$ 808,635
Actual return on plans' assets	68,981	24,931
Company contributions	7,905	7,999
Participant contributions	—	3
New plans	9,480	—
Plan settlements	—	(2,935)
Benefits and expenses paid	(49,510)	(47,212)
Currency translation adjustments	(3,745)	1,337
Fair value of plans' assets, end of year	$ 825,869	$ 792,758
Funded status of plans	$ (138,872)	$ (109,953)
Amounts recognized in the balance sheet consist of:		
Long-term prepaid benefit	$ 31,581	$ 42,543
Short-term accrued benefit obligation	(7,624)	(6,699)
Accrued pension benefits	(162,829)	(145,797)
Net amount recognized	$ (138,872)	$ (109,953)

The amount included under the captions "new plans" in the preceding table represents obligations under a defined benefit pension plan in Switzerland and a termination benefit plan covering certain employees in Israel. We determined in 2019 that these obligations should be included within our defined benefit pension plan obligation and the related disclosures. After evaluation, we determined that the effect of the corrections was not material to the previously issued financial statements.

The pre-tax amounts related to our defined benefit pension plans recognized in accumulated other comprehensive loss were as follows at June 30:

(in thousands)	2019	2018
Unrecognized net actuarial losses	$ 292,992	$ 247,230
Unrecognized net prior service costs	2,229	723
Unrecognized transition obligations	432	539
Total	$ 295,653	$ 248,492

To the best of our knowledge and belief, the asset portfolios of our defined benefit pension plans do not contain our capital stock. We do not issue insurance contracts to cover future annual benefits of defined benefit pension plan participants. Transactions between us and our defined benefit pension plans include the reimbursement of plan expenditures incurred by us on behalf of the plans. To the best of our knowledge and belief, the reimbursement of cost is permissible under current ERISA rules or local government law. The accumulated benefit obligation for all defined benefit pension plans was $962.9 million and $902.1 million as of June 30, 2019 and 2018, respectively.

Included in the above information are plans with accumulated benefit obligations exceeding the fair value of plan assets as of June 30 as follows:

(in thousands)	2019	2018
Projected benefit obligation	$ 179,921	$ 152,485
Accumulated benefit obligation	178,039	151,871
Fair value of plan assets	9,480	—

The components of net periodic pension income include the following as of June 30:

(in thousands)	2019	2018	2017
Service cost	$ 1,627	$ 1,635	$ 2,908
Interest cost	31,901	30,751	31,113
Expected return on plans' assets	(53,789)	(56,579)	(58,781)
Amortization of transition obligation	91	94	89
Amortization of prior service cost	(19)	48	(452)
Special termination benefit charge	—	—	98
Settlement loss	—	626	379
Recognition of actuarial losses	6,723	6,907	8,356
Net periodic pension income	$ (13,466)	$ (16,518)	$ (16,290)

As of June 30, 2019, the projected benefit payments, including future service accruals for these plans for 2020 through 2024, are $51.5 million, $52.0 million, $52.6 million, $53.7 million and $55.5 million, respectively, and $278.6 million in 2025 through 2029.

The amounts of accumulated other comprehensive loss expected to be recognized in net periodic pension cost during 2020 related to net actuarial losses are $10.4 million. The amount of accumulated other comprehensive income expected to be recognized in net periodic pension cost during 2020 related to transition obligations and prior service cost is immaterial.

We expect to contribute approximately $10 million to our pension plans in 2020, which is primarily for international plans.

Other Postretirement Benefit Plans

The funded status of our other postretirement benefit plans and the related amounts recognized in the consolidated balance sheets were as follows:

(in thousands)	2019	2018
Change in benefit obligation:		
Benefit obligation, beginning of year	$ 15,323	$ 18,160
Interest cost	613	629
Actuarial losses	(264)	(323)
Benefits paid	(1,505)	(2,208)
Plan amendments	(1,525)	(935)
Benefit obligation, end of year	$ 12,642	$ 15,323
Funded status of plan	$ (12,642)	$ (15,323)
Amounts recognized in the balance sheet consist of:		
Short-term accrued benefit obligation	$ (1,468)	$ (1,598)
Accrued postretirement benefits	(11,174)	(13,725)
Net amount recognized	$ (12,642)	$ (15,323)

The pre-tax amounts related to our other postretirement benefit plans which were recognized in accumulated other comprehensive loss were as follows at June 30:

(in thousands)	2019	2018
Unrecognized net actuarial losses	$ 4,150	$ 4,662
Unrecognized net prior service credits	(2,476)	(1,041)
Total	$ 1,674	$ 3,621

The components of net periodic other postretirement benefit cost include the following for the years ended June 30:

(in thousands)	2019	2018	2017
Interest cost	$ 613	$ 629	$ 673
Amortization of prior service credit	(90)	(22)	(22)
Recognition of actuarial loss	248	280	355
Net periodic other postretirement benefit cost	$ 771	$ 887	$ 1,006

As of June 30, 2019, the projected benefit payments, including future service accruals for our other postretirement benefit plans for 2020 through 2024, are $1.4 million, $1.3 million, $1.2 million, $1.1 million and $1.0 million, respectively, and $4.1 million in 2025 through 2029.

The amounts of accumulated other comprehensive loss expected to be recognized in net periodic pension cost during 2020 related to net actuarial losses and related to prior service credit are costs of $0.3 million and income of $0.3 million, respectively.

We expect to contribute approximately $1 million to our other postretirement benefit plans in 2020.

In accordance with ASU 2017-07, as described in Note 2, the service cost component of net periodic pension income of $1.6 million, $1.6 million and $2.9 million for 2019, 2018 and 2017, respectively, was reported as a component of cost of goods sold and operating expense. The other components of net periodic pension income and net periodic other postretirement benefit cost totaling a net benefit of $14.3 million, $17.3 million and $18.2 million for 2019, 2018 and 2017, respectively, were presented as a component of other income, net. For 2018 and 2017, we reclassified a net benefit of $12.2 million and $12.8 million, respectively, from cost of goods sold to other income, net and a net benefit of $5.1 million and $5.4 million, respectively, from operating expense to other income, net.

Assumptions

The significant actuarial assumptions used to determine the present value of net benefit obligations for our defined benefit pension plans and other postretirement benefit plans were as follows:

	2019	2018	2017
Discount Rate:			
U.S. plans	2.7-3.6%	4.0-4.3%	3.3-3.9%
International plans	0.4-2.9%	1.8-3.3%	2.0-3.3%
Rates of future salary increases:			
U.S. plans	4.0%	4.0%	4.0%
International plans	1.8-3.0%	2.5-3.0%	2.5-3.0%

The significant assumptions used to determine the net periodic (income) cost for our pension and other postretirement benefit plans were as follows:

	2019	2018	2017
Discount Rate:			
U.S. plans	4.0-4.3%	3.3-3.9%	2.4-3.7%
International plans	1.8-3.3%	2.0-3.3%	0.9-3.2%
Rates of future salary increases:			
U.S. plans	4.0%	4.0%	3.0-4.0%
International plans	2.5-3.0%	2.5-3.0%	2.5-3.0%
Rate of return on plans assets:			
U.S. plans	7.0%	7.3%	7.5%
International plans	5.0-5.3%	5.3%	5.3-5.5%

The rates of return on plan assets are based on historical performance, as well as future expected returns by asset class considering macroeconomic conditions, current portfolio mix, long-term investment strategy and other available relevant information.

The annual assumed rate of increase in the per capita cost of covered benefits (the health care cost trend rate) for our postretirement benefit plans was as follows:

	2019	2018	2017
Health care costs trend rate assumed for next year	7.0%	7.5%	8.0%
Rate to which the cost trend rate gradually declines	5.0%	5.0%	5.0%
Year that the rate reaches the rate at which it is assumed to remain	2027	2027	2027

A change of one percentage point in the assumed health care cost trend rates would have an immaterial effect on both the total service and interest cost components of our other postretirement cost and other postretirement benefit obligation at June 30, 2019.

Plan Assets

The primary objective of certain of our pension plans' investment policies is to ensure that sufficient assets are available to provide the benefit obligations at the time the obligations come due. The overall investment strategy for the defined benefit pension plans' assets combine considerations of preservation of principal and moderate risk-taking. The assumption of an acceptable level of risk is warranted in order to achieve satisfactory results consistent with the long-term objectives of the portfolio. Fixed income securities comprise a significant portion of the portfolio due to their plan-liability-matching characteristics and to address the plans' cash flow requirements. Additionally, diversification of investments within each asset class is utilized to further reduce the impact of losses in single investments.

Investment management practices for U.S. defined benefit pension plans must comply with ERISA and all applicable regulations and rulings thereof. The use of derivative instruments is permitted where appropriate and necessary for achieving overall investment policy objectives. Currently, the use of derivative instruments is not significant when compared to the overall investment portfolio.

The Company utilizes a liability driven investment strategy (LDI) for the assets of its U.S. defined benefit pension plans in order to reduce the volatility of the funded status of these plans and to meet the obligations at an acceptable cost over the long term. This LDI strategy entails modifying the asset allocation and duration of the assets of the plans to more closely match the liability profile of these plans. The asset reallocation involves increasing the fixed income allocation, reducing the equity component and adding alternative investments. Longer duration interest rate swaps have been utilized periodically in order to increase the overall duration of the asset portfolio to more closely match the liabilities.

Our defined benefit pension plans' asset allocations as of June 30, 2019 and 2018 and target allocations for 2020, by asset class, were as follows:

	2019	2018	Target %
Equity	23%	28%	23%
Fixed Income	67	62	70
Other	10	11	7

The following sections describe the valuation methodologies used by the trustee to measure the fair value of the defined benefit pension plan assets, including an indication of the level in the fair value hierarchy in which each type of asset is generally classified (see Note 4 for the definition of fair value and a description of the fair value hierarchy).

Corporate fixed income securities Investments in corporate fixed income securities consist of corporate debt and asset backed securities. These investments are classified as level two and are valued using independent observable market inputs such as the treasury curve, swap curve and yield curve.

Common stock Common stocks are classified as level one and are valued at their quoted market price.

Government securities Investments in government securities consist of fixed income securities such as U.S. government and agency obligations and foreign government bonds and asset and mortgage backed securities such as obligations issued by government sponsored organizations. These investments are classified as level two and are valued using independent observable market inputs such as the treasury curve, credit spreads and interest rates.

Other fixed income securities Investments in other fixed income securities are classified as level two and valued based on observable market data.

Other Other investments consist primarily of a hedge fund, in addition to state and local obligations and short term investments including cash, corporate notes, and various short term debt instruments which can be redeemed within a nominal redemption notice period. These investments are primarily classified as level two and are valued using independent observable market inputs.

The fair value methods described may not be reflective of future fair values. Additionally, while the Company believes the valuation methods used by the plans' trustee are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in different fair value measurement at the reporting date.

The following table presents the fair value of the benefit plan assets by asset category as of June 30, 2019:

(in thousands)	Level 1	Level 2	Level 3	NAV[3]	Total
Common / collective trusts [3]:					
Value funds	$ —	$ —	$ —	$ 66,950	$ 66,950
Growth funds	—	—	—	38,119	38,119
Balanced funds	—	—	—	10,921	10,921
Corporate fixed income securities	—	407,008	—	—	407,008
Common stock	74,448	—	—	—	74,448
Government securities:					
U.S. government securities	—	61,770	—	—	61,770
Foreign government securities	—	48,011	—	—	48,011
Other fixed income securities	—	32,971	—	—	32,971
Other	3,888	81,783	—	—	85,671
Total investments	$ 78,336	$ 631,543	$ —	$ 115,990	$ 825,869

The following table presents the fair value of the benefit plan assets by asset category as of June 30, 2018:

(in thousands)	Level 1	Level 2	Level 3	NAV[3]	Total
Common / collective trusts [3]:					
Value funds	$ —	$ —	$ —	$ 74,070	$ 74,070
Growth funds	—	—	—	49,438	49,438
Balanced funds	—	—	—	11,854	11,854
Corporate fixed income securities	—	350,394	—	—	350,394
Common stock	83,361	—	—	—	83,361
Government securities:					
U.S. government securities	—	62,381	—	—	62,381
Foreign government securities	—	46,286	—	—	46,286
Other fixed income securities	—	31,630	—	—	31,630
Other	3,898	79,446	—	—	83,344
Total investments	$ 87,259	$ 570,137	$ —	$ 135,362	$ 792,758

[3] Investments in common / collective trusts invest primarily in publicly traded securities and are valued using net asset value (NAV) of units of a bank collective trust. Therefore, these amounts have not been classified in the fair value hierarchy and are presented in the tables to reconcile the fair value hierarchy to the total fair value of plan assets.

Defined Contribution Plans

We sponsor several defined contribution retirement plans. Costs for defined contribution plans were $16.3 million, $19.6 million and $15.8 million in 2019, 2018 and 2017, respectively.

Certain U.S. employees are eligible to participate in the Kennametal Thrift Plus Plan (Thrift), which is a qualified defined contribution plan under section 401(k) of the Internal Revenue Code. Under the Thrift, eligible employees receive a full match of their contributions up to 6 percent of eligible compensation. Additionally, we have the right to make discretionary contributions to the Thrift.

All contributions, including the company match and discretionary, are made in cash and invested in accordance with participants' investment elections. There are no minimum amounts that must be invested in company stock, and there are no restrictions on transferring amounts out of company stock to another investment choice, other than excessive trading rules applicable to such investments. Employee contributions and our matching and discretionary contributions vest immediately as of the participants' employment dates.

NOTE 13 — ACCUMULATED OTHER COMPREHENSIVE LOSS

The components of and changes in accumulated other comprehensive loss (AOCL) were as follows, net of tax, for the year ended June 30, 2019 (in thousands):

Attributable to Kennametal:	Postretirement benefit plans	Currency translation adjustment	Derivatives	Total
Balance, June 30, 2018	$ (187,755)	$ (127,347)	$ (5,223)	$ (320,325)
Other comprehensive loss before reclassifications	(39,639)	(20,248)	197	(59,690)
Amounts Reclassified from AOCL	5,124	—	1,348	6,472
Net current period other comprehensive loss	(34,515)	(20,248)	1,545	(53,218)
AOCL, June 30, 2019	$ (222,270)	$ (147,595)	$ (3,678)	$ (373,543)
Attributable to noncontrolling interests:				
Balance, June 30, 2018	$ —	$ (2,913)	$ —	$ (2,913)
Other comprehensive loss before reclassifications	—	(537)	—	(537)
Net current period other comprehensive loss	—	(537)	—	(537)
AOCL, June 30, 2019	$ —	$ (3,450)	$ —	$ (3,450)

The components of and changes in AOCL were as follows, net of tax, for the year ended June 30, 2018 (in thousands):

Attributable to Kennametal:	Postretirement benefit plans	Currency translation adjustment	Derivatives	Total
Balance, June 30, 2017	$ (189,038)	$ (126,606)	$ (8,048)	$ (323,692)
Other comprehensive loss before reclassifications	(5,991)	(741)	(922)	(7,654)
Amounts Reclassified from AOCL	7,274	—	3,747	11,021
Net current period other comprehensive income	1,283	(741)	2,825	3,367
AOCL, June 30, 2018	$ (187,755)	$ (127,347)	$ (5,223)	$ (320,325)
Attributable to noncontrolling interests:				
Balance, June 30, 2017	$ —	$ (2,164)	$ —	$ (2,164)
Other comprehensive loss before reclassifications	—	(749)	—	(749)
Net current period other comprehensive loss	—	(749)	—	(749)
AOCL, June 30, 2018	$ —	$ (2,913)	$ —	$ (2,913)

The components of and changes in AOCL were as follows, net of tax, for the year ended June 30, 2017 (in thousands):

Attributable to Kennametal:	Postretirement benefit plans	Currency translation adjustment	Derivatives	Total
Balance, June 30, 2016	$ (212,163)	$ (131,212)	$ (9,134)	$ (352,509)
Other comprehensive income before reclassifications	15,559	4,606	(471)	19,694
Amounts Reclassified from AOCL	7,566	—	1,557	9,123
Net current period other comprehensive income	23,125	4,606	1,086	28,817
AOCL, June 30, 2017	$ (189,038)	$ (126,606)	$ (8,048)	$ (323,692)
Attributable to noncontrolling interests:				
Balance, June 30, 2016	$ —	$ (3,446)	$ —	$ (3,446)
Other comprehensive income before reclassifications	—	1,282	—	1,282
Net current period other comprehensive income	—	1,282	—	1,282
AOCL, June 30, 2017	$ —	$ (2,164)	$ —	$ (2,164)

Reclassifications out of AOCL for the years ended June 30, 2019, 2018 and 2017 consisted of the following:

Details about AOCL components (in thousands)	Year Ended June 30, 2019	2018	2017	Affected line item in the Income Statement
Gains and losses on cash flow hedges:				
Forward starting interest rate swaps	$ 2,352	$ 2,265	$ 2,180	Interest expense
Currency exchange contracts	(567)	2,243	(623)	Other income, net
Total before tax	1,785	4,508	1,557	
Tax impact	(437)	(761)	—	Provision for income taxes
Net of tax	$ 1,348	$ 3,747	$ 1,557	
Postretirement benefit plans:				
Amortization of transition obligations	$ 91	$ 94	$ 89	Other income, net
Amortization of prior service credit	(109)	26	(474)	Other income, net
Recognition of actuarial losses	6,971	7,187	8,711	Other income, net
Total before tax	6,953	7,307	8,326	
Tax impact	(1,829)	(33)	(760)	Provision for income taxes
Net of tax	$ 5,124	$ 7,274	$ 7,566	

The amount of income tax allocated to each component of other comprehensive income for the year ended June 30, 2019:

(in thousands)	Pre-tax	Tax impact	Net of tax
Unrealized gain on derivatives designated and qualified as cash flow hedges	$ 261	$ (64)	$ 197
Reclassification of unrealized loss on expired derivatives designated and qualified as cash flow hedges	1,785	(437)	1,348
Unrecognized net pension and other postretirement benefit loss	(52,087)	12,448	(39,639)
Reclassification of net pension and other postretirement benefit loss	6,953	(1,829)	5,124
Foreign currency translation adjustments	(20,881)	96	(20,785)
Other comprehensive income	$ (63,969)	$ 10,214	$ (53,755)

The amount of income tax allocated to each component of other comprehensive loss for the year ended June 30, 2018:

(in thousands)	Pre-tax	Tax impact	Net of tax
Unrealized loss on derivatives designated and qualified as cash flow hedges	$ (928)	$ 6	$ (922)
Reclassification of unrealized loss on expired derivatives designated and qualified as cash flow hedges	4,508	(761)	3,747
Unrecognized net pension and other postretirement benefit loss	(8,043)	2,052	(5,991)
Reclassification of net pension and other postretirement benefit loss	7,307	(33)	7,274
Foreign currency translation adjustments	(1,593)	103	(1,490)
Other comprehensive income	$ 1,251	$ 1,367	$ 2,618

The amount of income tax allocated to each component of other comprehensive loss for the year ended June 30, 2017:

(in thousands)	Pre-tax	Tax impact	Net of tax
Unrealized loss on derivatives designated and qualified as cash flow hedges	$ (471)	$ —	$ (471)
Reclassification of unrealized loss on expired derivatives designated and qualified as cash flow hedges	1,557	—	1,557
Unrecognized net pension and other postretirement benefit gain	18,656	(3,097)	15,559
Reclassification of net pension and other postretirement benefit loss	8,326	(760)	7,566
Foreign currency translation adjustments	6,266	(378)	5,888
Other comprehensive income	$ 34,334	$ (4,235)	$ 30,099

NOTE 14 — RESTRUCTURING AND RELATED CHARGES AND ASSET IMPAIRMENT CHARGES

FY19 Restructuring Actions
In the June quarter of fiscal 2018, we implemented and subsequently substantially completed restructuring activities to simplify the Industrial segment's cost structure by directing our resources to more profitable business and increasing sales force productivity. We supplemented this with the rationalization of small manufacturing facilities in the Infrastructure and Industrial segments, which we substantially completed in fiscal 2019. Total restructuring and related charges since inception of $13.4 million were recorded for this program through June 30, 2019: $11.8 million in Industrial, $1.0 million in Widia, $0.5 million in Infrastructure and $0.1 million in Corporate.

FY20 Restructuring Actions
In the June quarter of fiscal 2019, we began implementing the next phase of restructuring associated with our simplification/modernization initiative. These proposed actions are expected to reduce structural costs, improve operational efficiency and position the Company for long-term profitable growth. The Company expects to incur pre-tax charges of $55 million to $65 million through fiscal 2020 for these restructuring activities, which are anticipated to be primarily cash expenditures. Total restructuring and related charges since inception of $14.2 million were recorded for this program through June 30, 2019: $10.0 million in Industrial, $2.4 million in Infrastructure and $1.8 million in Widia.

FY21 Restructuring Actions
On July 11, 2019, we announced the initiation of restructuring actions in Germany associated with simplification/modernization. Incremental to restructuring actions previously announced, the actions are expected to reduce structural costs and be completed by fiscal 2022. Pre-tax charges of $60 million to $75 million are expected to be incurred through fiscal 2020 and 2021 and are anticipated to be primarily cash expenditures.

Annual Restructuring Charges
During 2019, we recorded restructuring and related charges of $16.9 million, net of a $4.8 million gain on the sale of our previously closed Madison, AL manufacturing location as part of our legacy restructuring programs. Of this amount, restructuring charges totaled $19.5 million, of which $0.7 million was related to inventory and was recorded in cost of goods sold. Restructuring-related charges of $1.8 million were recorded in cost of goods sold and $0.3 million were recorded in operating expense during 2019.

During 2018, we recorded restructuring and related charges of $15.9 million, net of a $4.7 million gain on the sale of our previously closed Houston, TX manufacturing location as part of our legacy restructuring programs. Of this amount, restructuring charges totaled $16.4 million, of which benefit of $0.2 million was related to inventory and was recorded in cost of goods sold. Restructuring-related charges of $3.7 million were recorded in cost of goods sold and $0.5 million were recorded in operating expense during 2018.

During 2017, we recorded restructuring and related charges of $76.2 million. Of this amount, restructuring charges totaled $65.6 million, of which $0.6 million were charges related to inventory and was recorded in cost of goods sold. Restructuring-related charges of $7.1 million were recorded in cost of goods sold and $3.5 million were recorded in operating expense during 2017.

As of June 30, 2019, the restructuring accrual of $19.2 million is recorded in other current liabilities. As of June 30, 2018 and 2017, $17.5 million and $27.3 million of the restructuring accrual is recorded in other current liabilities, and $0.1 million and $2.5 million is recorded in other liabilities, respectively, in our consolidated balance sheet. The amount attributable to each segment is as follows:

(in thousands)	June 30, 2018	Expense	Asset Write-Down	Translation	Cash Expenditures	June 30, 2019
Industrial						
Severance	$ 7,967	$ 8,957	$ —	$ (176)	$ (7,885)	$ 8,863
Facilities	—	3,488	(3,488)	—	—	—
Other	—	(103)	—	(1)	139	35
Total Industrial	7,967	12,342	(3,488)	(177)	(7,746)	8,898
Widia						
Severance	2,087	2,185	—	(43)	(1,923)	2,306
Facilities	—	401	(401)	—	—	—
Other	15	(25)	—	—	34	24
Total Widia	2,102	2,561	(401)	(43)	(1,889)	2,330
Infrastructure						
Severance	7,558	3,977	—	(78)	(3,501)	7,956
Facilities	—	708	(708)	—	—	—
Other	12	(46)	—	—	62	28
Total Infrastructure	7,570	4,639	(708)	(78)	(3,439)	7,984
Total	$ 17,639	$ 19,542	$ (4,597)	$ (298)	$ (13,074)	$ 19,212

(in thousands)	June 30, 2017	Expense	Asset Write-Down	Translation	Cash Expenditures	June 30, 2018
Industrial						
Severance	$ 17,639	$ 9,734	$ —	$ 868	$ (20,274)	$ 7,967
Facilities	—	3,084	(3,084)	—	—	—
Other	94	(85)	—	1	(10)	—
Total Industrial	17,733	12,733	(3,084)	869	(20,284)	7,967
Widia						
Severance	2,434	475	—	42	(864)	2,087
Facilities	—	747	(747)	—	—	—
Other	—	(4)	—	—	19	15
Total Widia	2,434	1,218	(747)	42	(845)	2,102
Infrastructure						
Severance	9,573	2,053	—	183	(4,251)	7,558
Facilities	21	433	(433)	—	(21)	—
Other	45	(18)	—	—	(15)	12
Total Infrastructure	9,639	2,468	(433)	183	(4,287)	7,570
Total	$ 29,806	$ 16,419	$ (4,264)	$ 1,094	$ (25,416)	$ 17,639

NOTE 15 — FINANCIAL INSTRUMENTS

The methods used to estimate the fair value of our financial instruments are as follows:

Cash and Equivalents, Current Maturities of Long-Term Debt and Notes Payable to Banks The carrying amounts approximate their fair value because of the short maturity of the instruments.

Long-Term Debt, Including Current Maturities Fixed rate debt had a fair market value of $622.0 million and $996.4 million at June 30, 2019 and 2018, respectively. The Level 2 fair value is determined based on the quoted market prices for similar debt instruments as of June 30, 2019 and 2018, respectively.

Foreign Exchange Contracts The notional amount of outstanding foreign exchange contracts, translated at current exchange rates, was $61.5 million and $62.9 million at June 30, 2019 and 2018, respectively. We would have received $0.2 million and $0.8 million at June 30, 2019 and 2018, respectively, to settle these contracts representing the fair value of these agreements. The carrying value equaled the fair value for these contracts at June 30, 2019 and 2018. Fair value was estimated based on quoted market prices of comparable instruments.

Concentrations of Credit Risk Financial instruments that potentially subject us to concentrations of credit risk consist primarily of temporary cash investments and trade receivables. By policy, we make temporary cash investments with high credit quality financial institutions and limit the amount of exposure to any one financial institution. With respect to trade receivables, concentrations of credit risk are significantly reduced because we serve numerous customers in many industries and geographic areas.

We are exposed to counterparty credit risk for nonperformance of derivatives and, in the unlikely event of nonperformance, to market risk for changes in interest and currency exchange rates, as well as settlement risk. We manage exposure to counterparty credit risk through credit standards, diversification of counterparties and procedures to monitor concentrations of credit risk. We do not anticipate nonperformance by any of the counterparties. As of June 30, 2019 and 2018, we had no significant concentrations of credit risk.

NOTE 16 — STOCK-BASED COMPENSATION

Stock Options

Changes in our stock options for 2019 were as follows:

	Options	Weighted Average Exercise Price	Weighted Average Remaining Life (years)	Aggregate Intrinsic value (in thousands)
Options outstanding, June 30, 2018	989,992	$ 33.08		
Exercised	(188,528)	28.47		
Lapsed and forfeited	(19,791)	44.20		
Options outstanding, June 30, 2019	781,673	$ 33.92	3.5	$ 4,158
Options vested and expected to vest, June 30, 2019	781,673	$ 33.92	3.5	$ 4,158
Options exercisable, June 30, 2019	781,673	$ 33.92	3.5	$ 4,158

During 2019, 2018 and 2017, compensation expense related to stock options was $0.1 million, $0.7 million and $1.5 million, respectively. As of June 30, 2019, there was no unrecognized compensation cost related to options outstanding.

Fair value of options vested during 2019, 2018 and 2017 was $1.2 million, $1.9 million and $3.3 million, respectively.

Tax benefits relating to excess stock-based compensation deductions are presented in the consolidated statements of cash flow as operating cash inflows for 2019 and 2018 and as financing cash inflows for 2017. Tax benefits resulting from stock-based compensation deductions were greater than the amounts reported for financial reporting purposes by $1.3 million in 2019 and by an immaterial amount in 2018. No tax benefits were realized resulting from stock-based compensation deductions for 2017 due to the valuation allowance on U.S. deferred tax assets.

The amount of cash received from the exercise of capital stock options during 2019, 2018 and 2017 was $4.8 million, $22.2 million and $21.3 million, respectively. The related tax benefit in 2019 and 2018 was $0.5 million and $1.4 million, respectively. No related tax benefit was realized in 2017 due to the valuation allowance on U.S. deferred tax assets. The total intrinsic value of options exercised in 2019, 2018 and 2017 was $2.4 million, $6.6 million and $3.1 million, respectively.

Restricted Stock Units – Time Vesting and Performance Vesting

Performance vesting restricted stock units are earned pro rata each year if certain performance goals are met over a three-year period, and are also subject to a service condition that requires the individual to be employed by the Company at the payment date after the three-year performance period, with the exception of retirement eligible grantees, who upon retirement are entitled to receive payment for any units that have been earned, including a prorated portion in the partially completed fiscal year in which the retirement occurs. Time vesting stock units are valued at the market value of the stock on the grant date. Performance vesting stock units with a market condition are valued using a Monte Carlo model.

Changes in our time vesting and performance vesting restricted stock units for 2019 were as follows:

	Performance Vesting Stock Units	Performance Vesting Weighted Average Fair Value	Time Vesting Stock Units	Time Vesting Weighted Average Fair Value
Unvested, June 30, 2018	409,297	$ 31.22	1,083,675	$ 30.47
Granted	161,066	40.10	544,297	38.91
Vested	(141,394)	27.77	(646,155)	28.73
Performance metric adjustments, net	41,196	29.69	—	—
Forfeited	(64,935)	32.60	(54,890)	34.67
Unvested, June 30, 2019	405,230	$ 35.58	926,927	$ 36.43

During 2019, 2018 and 2017, compensation expense related to time vesting and performance vesting restricted stock units was $21.9 million, $19.4 million and $19.3 million, respectively. As of June 30, 2019, the total unrecognized compensation cost related to unvested time vesting and performance vesting restricted stock units was $17.7 million and is expected to be recognized over a weighted average period of 1.9 years.

NOTE 17— ENVIRONMENTAL MATTERS

The operation of our business has exposed us to certain liabilities and compliance costs related to environmental matters. We are involved in various environmental cleanup and remediation activities at certain of our locations.

We establish and maintain reserves for certain potential environmental issues. At June 30, 2019 and 2018, the balances of these reserves were $12.4 million and $12.6 million, respectively. These reserves represent anticipated costs associated with the remediation of these issues and are generally not discounted.

The reserves we have established for environmental liabilities represent our best current estimate of the costs of addressing all identified environmental situations, based on our review of currently available evidence, and taking into consideration our prior experience in remediation and that of other companies, as well as public information released by the United States Environmental Protection Agency (USEPA), other governmental agencies and by the Potentially Responsible Party (PRP) groups in which we are participating. Although the reserves currently appear to be sufficient to cover these environmental liabilities, there are uncertainties associated with environmental liabilities, and we can give no assurance that our estimate of any environmental liability will not increase or decrease in the future. The reserved and unreserved liabilities for all environmental concerns could change substantially due to factors such as the nature and extent of contamination, changes in remedial requirements, technological changes, discovery of new information, the financial strength of other PRPs, the identification of new PRPs and the involvement of and direction taken by the government on these matters.

Among other environmental laws, we are subject to the Comprehensive Environmental Response Compensation and Liability Act of 1980 (Superfund), under which we have been designated by the USEPA as a PRP with respect to environmental remedial costs at certain Superfund sites. We have evaluated our claims and potential liability associated with these Superfund sites based upon the best information currently available to us. We believe our environmental accruals will be adequate to cover our portion of the environmental remedial costs at those Superfund sites where we have been designated a PRP, to the extent these expenses are probable and reasonably estimable.

NOTE 18 — COMMITMENTS AND CONTINGENCIES

Legal Matters Various lawsuits arising during the normal course of business are pending against us. In our opinion, the ultimate liability, if any, resulting from these matters will have no significant effect on our consolidated financial positions or results of operations.

Lease Commitments We lease a wide variety of facilities and equipment under operating leases, primarily for warehouses, production and office facilities and equipment. Lease expense under these rentals amounted to $26.6 million in 2019 and 2018, and $26.3 million in 2017. Future minimum lease payments for non-cancelable operating leases are $17.1 million, $12.2 million, $6.7 million, $4.3 million and $2.6 million for the years 2020 through 2024 and $17.2 million thereafter.

Purchase Commitments We have purchase commitments for materials, supplies and machinery and equipment as part of the ordinary conduct of business. Some of these commitments extend beyond one year and are based on minimum purchase requirements. We believe these commitments are not at prices in excess of current market.

Other Contractual Obligations We do not have material financial guarantees or other contractual commitments that are reasonably likely to adversely affect our liquidity.

Related Party Transactions Sales to affiliated companies were immaterial in 2019, 2018 and 2017. We do not have any other related party transactions that affect our operations, results of operations, cash flow or financial condition.

NOTE 19 — SEGMENT DATA

The Company manages and reports its business in the following three segments: Industrial, Widia and Infrastructure. The Company's reportable operating segments have been determined in accordance with the Company's internal management structure, which is organized based on operating activities, the manner in which we organize segments for making operating decisions and assessing performance and the availability of separate financial results. We do not allocate certain corporate expenses related to executive retirement plans, the Company’s Board of Directors and strategic initiatives, as well as certain other costs and report them in Corporate. None of our reportable operating segments represent the aggregation of two or more operating segments.

Sales to a single customer did not aggregate to 4 percent or more of total sales in 2019, 2018 and 2017. Export sales from U.S. operations to unaffiliated customers were $67.8 million, $72.4 million and $58.6 million in 2019, 2018 and 2017, respectively.

INDUSTRIAL The Industrial segment develops and manufactures high performance tooling and metalworking products and services for diverse end markets, including aerospace and defense, general engineering, energy and transportation. These products include milling, hole making, turning, threading and toolmaking systems used in the manufacture of airframes, aero engines, trucks and automobiles, ships and various types of industrial equipment. We leverage advanced manufacturing capabilities in combination with varying levels of customization to solve our customers’ toughest challenges and deliver improved productivity for a wide range of applications**.** Industrial goes to market under the Kennametal® brand through its direct sales force, a network of independent and national distributors, integrated supplier channels and via the Internet. Application engineers and technicians are critical to the sales process and directly assist our customers with specified product design, selection, application and support.

WIDIA Widia offers an assortment of standard and custom metal cutting solutions to general engineering, aerospace, energy and transportation customers. We serve our customers primarily through a network of value added resellers, integrated supplier channels and via the internet. Widia markets its products under the WIDIA®, WIDIA Hanita® and WIDIA GTD® brands.

INFRASTRUCTURE Our Infrastructure segment produces engineered tungsten carbide and ceramic components, earth-cutting tools, and advanced metallurgical powders, primarily for the energy, earthworks and general engineering end markets. These wear-resistant products include compacts, nozzles, frac seats and custom components used in oil & gas and petrochemical industries; rod blanks and abrasive water jet nozzles for general industries; earth cutting tools and systems used in underground mining, trenching and foundation drilling and road milling; tungsten carbide and specialty alloy powders for the oil and gas, aerospace and process industries; and ceramics used by the packaging industry for metallization of films and papers. We combine deep metallurgical and engineering expertise with advanced manufacturing capabilities to deliver solutions that drive improved productivity for our customers. Infrastructure markets its products primarily under the Kennametal® brand and sells through a direct sales force as well as through distributors.

Segment data is summarized as follows:

(in thousands)	2019	2018	2017
Sales:			
Industrial	$ 1,274,499	$ 1,292,098	$ 1,126,309
Widia	197,522	198,568	177,662
Infrastructure	903,213	877,187	754,397
Total sales	$ 2,375,234	$ 2,367,853	$ 2,058,368
Operating income (loss):			
Industrial	$ 220,696	$ 176,978	$ 73,053
Widia	2,882	2,919	(6,800)
Infrastructure	108,480	112,998	28,063
Corporate	(3,208)	(2,596)	436
Total operating income	$ 328,850	$ 290,299	$ 94,752
Interest expense	$ 32,994	$ 30,081	$ 28,842
Other income, net	(15,379)	(14,823)	(15,965)
Income from continuing operations before income taxes	$ 311,235	$ 275,041	$ 81,875
Depreciation and amortization:			
Industrial	$ 58,373	$ 57,261	$ 54,269
Widia	9,390	9,483	10,728
Infrastructure	44,284	41,916	42,596
Corporate	5	20	63
Total depreciation and amortization	$ 112,052	$ 108,680	$ 107,656
Total assets:			
Industrial	$ 1,245,624	$ 1,169,610	$ 1,103,686
Widia	216,633	193,971	191,626
Infrastructure	883,566	864,402	813,747
Corporate	310,446	697,754	306,437
Total assets	$ 2,656,269	$ 2,925,737	$ 2,415,496
Capital expenditures:			
Industrial	$ 145,485	$ 112,124	$ 70,281
Widia	22,162	17,445	17,853
Infrastructure	44,696	41,435	29,884
Total capital expenditures	$ 212,343	$ 171,004	$ 118,018

Table of Contents

Geographic information for sales, based on country where the sale originated, and long-lived assets is as follows:

(in thousands)	2019	2018	2017
Sales:			
United States	$ 1,014,189	$ 970,003	$ 868,466
Germany	314,035	331,893	282,347
China	247,858	271,343	220,561
India	113,287	102,120	84,769
Canada	108,261	102,139	85,488
Italy	68,585	69,049	59,967
France	59,899	62,982	56,231
United Kingdom	44,384	45,714	39,731
Other[4]	404,736	412,610	360,808
Total sales	$ 2,375,234	$ 2,367,853	$ 2,058,368
Total long-lived assets:			
United States	$ 525,713	$ 456,678	$ 423,543
Germany	201,714	188,673	157,323
China	78,410	67,462	60,908
India	44,643	31,984	28,569
Israel	24,042	25,831	26,627
Canada	20,435	19,396	19,576
Other	39,938	34,189	34,822
Total long-lived assets[5]	$ 934,895	$ 824,213	$ 751,368

[4] Other consists of sales from 27 countries, none of which individually exceed 2 percent of total sales.
[5] Total long-lived assets as of June 30, 2019 and 2018 include property, plant and equipment, net of $934.9 million and $824.2 million, respectively. Total long-lived assets as of June 30, 2017 include property, plant and equipment, net of $744.4 million and assets held for sale of $7.0 million.

The following table presents Kennametal's revenue disaggregated by segment by geography:

	Industrial			Widia			Infrastructure			Total Kennametal		
	2019	2018	2017	2019	2018	2017	2019	2018	2017	2019	2018	2017
Americas	40%	38%	39%	45%	46%	49%	66%	65%	65%	50%	49%	49%
EMEA	40	41	41	26	25	24	16	16	17	30	31	31
Asia Pacific	20	21	20	29	29	27	18	19	18	20	20	20

The following table presents Kennametal's revenue disaggregated by segment by end market:

	Industrial			Widia			Infrastructure			Total Kennametal		
	2019	2018	2017	2019	2018	2017	2019	2018	2017	2019	2018	2017
General Engineering	44%	43%	43%	100%	100%	100%	34%	31%	28%	45%	41%	39%
Transportation	34	36	36	—	—	—	—	—	—	18	20	20
Aerospace and Defense	13	12	12	—	—	—	—	—	—	7	8	8
Energy	9	9	9	—	—	—	33	33	33	17	17	18
Earthworks	—	—	—	—	—	—	33	36	39	13	14	15

NOTE 20 — SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)

For the quarter ended (in thousands, except per share data)	September 30	December 31	March 31	June 30
2019				
Sales	$ 586,687	$ 587,394	$ 597,204	$ 603,949
Gross profit	211,092	198,598	208,086	213,719
Net income attributable to Kennametal	56,699	54,698	68,550	61,978
Basic earnings per share attributable to Kennametal [(6)]				
Net income	0.69	0.66	0.83	0.75
Diluted earnings per share attributable to Kennametal [(6)]				
Net income	0.68	0.66	0.82	0.74
2018				
Sales	$ 542,454	$ 571,345	$ 607,936	$ 646,119
Gross profit	181,949	189,501	216,417	232,256
Net income attributable to Kennametal	39,183	41,601	50,866	68,528
Basic earnings per share attributable to Kennametal [(6)]				
Net income	0.48	0.51	0.62	0.84
Diluted earnings per share attributable to Kennametal [(6)]				
Net income	0.48	0.50	0.61	0.83

[(6)] Earnings per share amounts attributable to Kennametal for each quarter are computed using the weighted average number of shares outstanding during the quarter. Earnings per share amounts attributable to Kennametal for the full year are computed using the weighted average number of shares outstanding during the year. Thus, the sum of the four quarters' earnings per share attributable to Kennametal does not always equal the full-year earnings per share attributable to Kennametal.

ITEM 9 — CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A — CONTROLS AND PROCEDURES

(a) Evaluation of Disclosure Controls and Procedures

The Company's management evaluated, with the participation of the Company's Chief Executive Officer and Chief Financial Officer, the effectiveness of the Company's disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) as of June 30, 2019. The Company's disclosure controls were designed to provide a reasonable assurance that information required to be disclosed in reports that we file or submit under the Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission. It should be noted that the design of any system of controls is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions, regardless of how remote. However, the controls have been designed to provide reasonable assurance of achieving the controls' stated goals. Based on that evaluation, the Company's Chief Executive Officer and Chief Financial Officer have concluded that the Company's disclosure controls and procedures are effective to provide reasonable assurance at June 30, 2019 to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is (i) accumulated and communicated to management, including the Company's Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosure and (ii) recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission.

(b) Management's Report on Internal Control over Financial Reporting

Management's Report on Internal Control over Financial Reporting is included in Item 8 of this Annual Report and incorporated herein by reference.

(c) Attestation Report of the Independent Registered Public Accounting Firm

The effectiveness of Kennametal's internal control over financial reporting as of June 30, 2019 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report included in Item 8 of this Annual Report, which is incorporated herein by reference.

(d) Changes in Internal Control over Financial Reporting

There have been no changes in internal control over financial reporting that occurred during the fourth quarter of 2019 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

ITEM 9B — OTHER INFORMATION

None.

PART III

ITEM 10 — DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

Information regarding the executive officers of Kennametal Inc. is as follows: Name, Age, Position, and Experience During the Past Five Years [(1)].

Christopher Rossi, 55
President and Chief Executive Officer
President and Chief Executive Officer since August 2017; Formerly, Chief Executive Officer of Dresser-Rand at Siemens Aktiengesellschaft (provides custom-engineered rotating equipment for applications in the oil, gas, process, power, and other industries), from September 2015 to May 2017; Executive Vice President of Global Operations at Dresser-Rand Group Inc. from September 2012 to September 2015.

Judith L. Bacchus, 57
Vice President and Chief Administrative Officer
Vice President and Chief Administrative Officer since May 2019; Vice President and Chief Human Resources and Corporate Relations Officer since December 2015; Vice President and Chief Human Resources Officer from June 2011 to November 2015.

Carlonda R. Reilly, 51
Vice President and Chief Technology Officer
Vice President and Chief Technology Officer since September 2018; Formerly, Global Technology Director in Transportation and Advanced Polymers business at DuPont (chemical company) from January 2016 to September 2018 and Gloval Technology Director in Building Innovations at DuPont from 2013 to January 2016.

Peter A. Dragich, 56
Vice President, Kennametal Inc. and President, Industrial Business Segment
Vice President, Kennametal Inc. and President, Industrial Business Segment since January 2017; Vice President, Kennametal Inc. and President, Infrastructure Business Segment from May 2016 to January 2017; Vice President and Executive Vice President, Infrastructure Business Segment from October 2015 to May 2016; Vice President Integrated Supply Chain and Logistics from October 2012 to October 2015.

Damon J. Audia, 48
Vice President and Chief Financial Officer
Vice President and Chief Financial Officer since September 2018; Formerly, Senior Vice President and Chief Financial Officer at Carpenter Technology Corporation (manufactures, fabricates and distributes specialty metals) from October 2015 to September 2018; Senior Vice President of Finance in North America Business at The Goodyear Tire & Rubber Company (develops, manufactures, markets and distributes tires).

Michelle R. Keating, 43
Vice President, Secretary and General Counsel, Kennametal Inc.
Vice President, Secretary and General Counsel, Kennametal Inc. since December 2016; Vice President, Secretary and Interim General Counsel from July 2016 to December 2016; Vice President, Associate General Counsel & Assistant Secretary from March 2016 to July 2016; Assistant General Counsel & Assistant Secretary from August 2011 to February 2016.

Ronald L. Port, 54
Vice President, Kennametal Inc. and President, Infrastructure Business Segment
Vice President, Kennametal Inc. and President, Infrastructure Business Segment since January 2018; Vice President & General Manager, Engineered Components from April 2015 to January 2018; Formerly, Vice President Marketing & Business Development, Flow Technology segment at SPX Corporation (provided highly-engineered process equipment into industrial flow markets) from September 2013 to April 2015.

Patrick S. Watson, 46
Vice President Finance and Corporate Controller, Kennametal Inc.
Vice President Finance and Corporate Controller, Kennametal Inc. since March 2017; Vice President Finance - Industrial Business from March 2014 to February 2017; Director Finance, Kennametal EMEA from August 2011 to August 2014.

(1) Each executive officer has been elected by the Board of Directors to serve until removed or until a successor is elected and qualified. Unless otherwise noted, none of the executive officers (i) has an arrangement or understanding with any other person(s) pursuant to which he or she was selected as an officer, (ii) has any family relationship with any director or executive officer of the Company, or (iii) is involved in any legal proceeding which would require disclosure under this item.

Incorporated herein by reference is the information to be provided under the captions “Proposal I. Election of Directors” and “Delinquent Section 16(a) Reports” in our definitive proxy statement to be filed with the Securities and Exchange Commission within 120 days after June 30, 2019 (2019 Proxy Statement). Also incorporated herein by reference is the information to be set forth under the caption “Ethics and Corporate Governance-Code of Conduct” and "Ethics and Corporate Governance-Corporate Governance" in the 2019 Proxy Statement.

The Company has a separately designated standing Audit Committee established in accordance with Section 3(a) (58) (A) of the Exchange Act. The members of the Audit Committee are: William M. Lambert (Chair); Cindy L. Davis; Lorraine M. Martin; and Sagar A. Patel. Incorporated herein by reference is the information provided under the caption “Board of Directors and Board Committees-Committee Functions-Audit Committee” in the 2019 Proxy Statement.

ITEM 11 — EXECUTIVE COMPENSATION

Incorporated herein by reference from our 2019 Proxy Statement is the information to be set forth under the captions “Executive Compensation, Compensation Discussion and Analysis,” "Compensation Committee Report," "Analysis of Risk Inherent in our Compensation Policies and Practices," "Executive Compensation Tables," "2019 Nonqualified Deferred Compensation," "Retirement Programs" and "Potential Payments Upon Termination or Change in Control." Also incorporated herein by reference from our 2019 Proxy Statement is the information to be set forth under the captions “Board of Directors Compensation and Benefits” and “Board of Directors and Board Committees - Committee Functions - Compensation Committee Interlocks and Insider Participation."

ITEM 12 — SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Incorporated herein by reference from our 2019 Proxy Statement are: (i) the information to be set forth under the caption “Equity Compensation Plans,” (ii) the information to be set forth under the caption “Ownership of Capital Stock by Directors, Nominees and Executive Officers” with respect to the directors’ and officers’ shareholdings; and (iii) the information to be set forth under the caption “Principal Holders of Voting Securities” with respect to other beneficial owners.

ITEM 13 — CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Incorporated herein by reference is the information to be set forth under the captions “Ethics and Corporate Governance-Corporate Governance-Board of Director Review and Approval of Related Person Transactions,” “Executive Compensation,” “Executive Compensation Tables” and “Ethics and Corporate Governance-Corporate Governance-Board Composition and Independence” in the 2019 Proxy Statement.

ITEM 14 — PRINCIPAL ACCOUNTING FEES AND SERVICES

Incorporated herein by reference is the information with respect to pre-approval policies set forth under the caption “Proposal II. Ratification of PricewaterhouseCoopers LLP as our Independent Registered Public Accounting Firm for the Fiscal Year ending June 30, 2020-Audit Committee Pre-Approval Policy” and the information with respect to principal accountant fees and services set forth under “Proposal II. Ratification of PricewaterhouseCoopers LLP as our Independent Registered Public Accounting Firm for the Fiscal Year ending June 30, 2020-Fees and Services” to be set forth in the 2019 Proxy Statement.

SIGNATURES

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

	KENNAMETAL INC.	
Date: August 13, 2019	By:	/s/ Patrick S. Watson
		Patrick S. Watson
		Vice President Finance and Corporate Controller

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

SIGNATURE	TITLE	DATE
/s/ CHRISTOPHER ROSSI Christopher Rossi	President and Chief Executive Officer	August 13, 2019
/s/ DAMON J. AUDIA Damon J. Audia	Vice President and Chief Financial Officer	August 13, 2019
/s/ PATRICK S. WATSON Patrick S. Watson	Vice President Finance and Corporate Controller	August 13, 2019
/s/ LAWRENCE W. STRANGHOENER Lawrence W. Stranghoener	Chairman of the Board	August 13, 2019
/s/ JOSEPH ALVARADO Joseph Alvarado	Director	August 13, 2019
/s/ CINDY L. DAVIS Cindy L. Davis	Director	August 13, 2019
/s/ WILLIAM J. HARVEY William J. Harvey	Director	August 13, 2019
/s/ WILLIAM M. LAMBERT William M. Lambert	Director	August 13, 2019
/s/ LORRAINE M. MARTIN Lorraine M. Martin	Director	August 13, 2019
/s/ TIMOTHY R. MCLEVISH Timothy R. McLevish	Director	August 13, 2019
/s/ SAGAR A. PATEL Sagar A. Patel	Director	August 13, 2019
/s/ STEVEN H. WUNNING Steven H. Wunning	Director	August 13, 2019

PART IV

ITEM 15 — EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) Documents filed as part of this Form 10-K report.
1. Financial Statements included in Part II, Item 8
2. Financial Statement Schedule

The financial statement schedule required by Part II, Item 8 of this document is filed as part of this report. All of the other schedules are omitted as the required information is inapplicable or the information is presented in our consolidated financial statements or related notes.

FINANCIAL STATEMENT SCHEDULE	Page 79

Schedule II—Valuation and Qualifying Accounts and Reserves for the Years Ended June 30, 2019, 2018 and 2017

3. Exhibits

3	**Articles of Incorporation and Bylaws**	
3.1	Articles of Incorporation of Kennametal Inc., as amended and restated through October 28, 2014	Exhibit 3.(i) of the Form 8-K filed October 30, 2014 (File No. 001-05318) is incorporated herein by reference.
3.2	By-Laws of Kennametal Inc., as amended and restated through July 26, 2016	Exhibit 10.1 of the Form 8-K filed July 28, 2016 (File No. 001-05318) is incorporated herein by reference.
4	**Instruments Defining the Rights of Security Holders, Including Indentures**	
4.1	Indenture, dated as of June 19, 2002, by and between the Registrant and Bank One Trust Company, N.A., as trustee	Exhibit 4.1 of the Form 8-K filed June 20, 2002 (File No. 001-05318) is incorporated herein by reference.
4.2	First Supplemental Indenture, dated as of June 19, 2002, by and between the Registrant and Bank One Trust Company, N.A., as trustee	Exhibit 4.2 of the Form 8-K filed June 20, 2002 (File No. 001-05318) is incorporated herein by reference.
4.3	Indenture dated February 14, 2012 between Kennametal Inc. and U.S. Bank National Association	Exhibit 4.1 of the Form 8-K filed February 14, 2012 (File No. 001-05318) is incorporated herein by reference.
4.4	First Supplemental Indenture dated February 14, 2012 between Kennametal Inc. and U.S. Bank National Association (including Form of 3.875% Note due 2022)	Exhibit 4.2 of the Form 8-K filed February 14, 2012 (File No. 001-05318) is incorporated herein by reference.
4.5	Second Supplemental Indenture dated November 7, 2012 between Kennametal Inc. and U.S. Bank National Association (including Form of 2.650% Note due 2019)	Exhibit 4.4 of the Form 8-K filed November 7, 2012 (File No. 001-05318) is incorporated herein by reference.
4.6	Third Supplemental Indenture dated June 7, 2018 between Kennametal Inc. and U.S. Bank National Association (including Form of 4.625% Note due June 15, 2028).	Exhibit 4.1 of the Form 8-K filed June 7, 2018 (File No. 001-05318) is incorporated herein by reference.
4.7	Description of Registrant's Securities	Filed herewith.
10	**Material Contracts**	
10.1*	Deferred Fee Plan for Outside Directors, as amended and restated effective December 30, 2008	Exhibit 10.1 of the December 31, 2008 Form 10-Q filed February 4, 2009 (File No. 001-05318) is incorporated herein by reference.
10.2*	Directors Stock Incentive Plan, as amended and restated effective December 30, 2008	Exhibit 10.2 of the December 31, 2008 Form 10-Q filed February 4, 2009 (File No. 001-05318) is incorporated herein by reference.
10.3*	Performance Bonus Stock Plan of 1995, as amended and restated effective December 30, 2008	Exhibit 10.3 of the December 31, 2008 Form 10-Q filed February 4, 2009 (File No. 001-05318) is incorporated herein by reference.
10.4*	Kennametal Inc. Stock and Incentive Plan of 2002 (as amended on October 21, 2008)	Appendix A to the 2008 Proxy Statement filed September 8, 2008 (File No. 001-05318) is incorporated herein by reference.
10.5*	Form of Indemnification Agreement for Named Executive Officers	Exhibit 10.2 of the Form 8-K filed March 22, 2005 (File No. 001-05318) is incorporated herein by reference.
10.6*	Schedule of Named Executive Officers who have entered into the Form of Indemnification Agreement as set forth in Exhibit 10.5	Filed herewith.
10.7*	Kennametal Inc. Executive Retirement Plan (for Designated Officers) (as amended effective December 30, 2008)	Exhibit 10.8 of the December 31, 2008 Form 10-Q filed February 4, 2009 (File No. 001-05318) is incorporated herein by reference.

10.8*	Amendment No. 1 to Kennametal Inc. Executive Retirement Plan (dated January 27, 2015)	Exhibit 10.2 to the Form 8-K dated February 2, 2015 (File No. 001-05318) is incorporated herein by reference.
10.9*	Amendment No. 2 to Kennametal Inc. Executive Retirement Plan (dated June 18, 2015)	Exhibit 10.1 of the Form 8-K filed June 23, 2015 (File No. 001-05318) is incorporated herein by reference.
10.10*	Kennametal Inc. Supplemental Executive Retirement Plan (as amended effective December 30, 2008)	Exhibit 10.9 of the December 31, 2008 Form 10-Q filed February 4, 2009 (File No. 001-05318) is incorporated herein by reference.
10.11*	Amendment No. 1 to the Kennametal Inc. Supplemental Executive Retirement Plan (as amended effective December 30, 2008) (dated June 18, 2015)	Exhibit 10.2 of the Form 8-K filed June 23, 2015 (File No. 001-05318) is incorporated herein by reference.
10.12*	Description of Compensation Payable to Non-Employee Directors	Exhibit 10.12 of the Form 10-K filed August 10, 2018 (File No. 001-05318) is incorporated herein by reference.
10.13*	Form of Kennametal Inc. Nonstatutory Stock Option Award (granted under the Kennametal Inc. Stock and Incentive Plan of 2010)	Exhibit 10.5 of Form 10-Q filed February 8, 2011 (File No. 001-05318) is incorporated herein by reference.
10.14*	Form of Kennametal Inc. Nonstatutory Stock Option Award for Non-Employee Directors (granted under the Kennametal Inc. Stock and Incentive Plan of 2010)	Exhibit 10.6 of Form 10-Q filed February 8, 2011 (File No. 001-05318) is incorporated herein by reference
10.15*	Form of Officer's Employment Agreement with certain Named Executive Officers	Exhibit 10.1 of Form 8-K filed May 13, 2011 (File No. 001-05318) is incorporated herein by reference.
10.16*	Schedule of Executive Officers who have entered into the Form of Officer's Employment Agreement as set forth in Exhibit 10.15	Filed herewith.
10.17*	Form of Kennametal Inc. Restricted Unit Award - President and CEO (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.3 to Form 8-K filed February 5, 2016 (File No. 001-05318) is incorporated herein by reference
10.18*	Form of Kennametal Inc. Nonstatutory Stock Option Award - President and CEO (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.2 to Form 8-K filed February 5, 2016 (File No. 001-05318) is incorporated herein by reference
10.19*	Form of Kennametal Inc. Restricted Unit Award - President and CEO (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.40 of the Form 10-K filed August 11, 2016 (File No. 001-05318) is incorporated herein by reference.
10.20*	Form of Kennametal Inc. Performance Unit Award - President and CEO (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.41 of the Form 10-K filed August 11, 2016 (File No. 001-05318) is incorporated herein by reference.
10.21*	Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013)	Appendix A of the 2013 Proxy Statement filed September 17, 2013 (File No. 001-05318) is incorporated herein by reference.
10.22*	Form of Kennametal Inc. Restricted Unit Award (granted under the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.39 of Form 10-K filed August 13, 2014 (File No. 001-05318) is incorporated herein by reference.
10.23*	Form of Kennametal Inc. Nonstatutory Stock Option Award (granted under the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.41 of Form 10-K filed August 13, 2014 (File No. 001-05318) is incorporated herein by reference.
10.24*	Form of Kennametal Inc. Nonstatutory Stock Option Award for Non-Employee Directors (granted under the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.42 of Form 10-K filed August 13, 2014 (File No. 001-05318) is incorporated herein by reference.
10.25*	Form of Kennametal Inc. Cash Settled Share-Based Award for China-based Employees (granted under the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.43 of Form 10-K filed August 13, 2014 (File No. 001-05318) is incorporated herein by reference.
10.26*	Form of Kennametal Inc. Restricted Unit Award - Alternate Form (granted under the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.45 of Form 10-K filed August 13, 2014 (File No. 001-05318) is incorporated herein by reference.
10.27*	Form of Kennametal Inc. Nonstatutory Stock Option Award - Alternate Form (granted under the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.46 of Form 10-K filed August 13, 2014 (File No. 001-05318) is incorporated herein by reference.
10.28*	Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013)	Exhibit 10.1 to the Form 8-K dated February 2, 2015 (File No. 001-05318) is incorporated herein by reference.
10.29*	Form of Kennametal Inc. Performance Unit Award (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.3 to the Form 8-K dated February 2, 2015 (File No. 001-05318) is incorporated herein by reference.

10.30*	Form of Kennametal Inc. Restricted Unit Award (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.4 to the Form 8-K dated February 2, 2015 (File No. 001-05318) is incorporated herein by reference.
10.31*	Form of Kennametal Inc. Restricted Unit Award for Non-Employee Directors (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.5 to the Form 8-K dated February 2, 2015 (File No. 001-05318) is incorporated herein by reference.
10.32*	Form of Kennametal Inc. Restricted Unit Award - Alternate Form (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.6 to the Form 8-K dated February 2, 2015 (File No. 001-05318) is incorporated herein by reference.
10.33*	Form of Kennametal Inc. Nonstatutory Stock Option Award (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.8 to the Form 8-K dated February 2, 2015 (File No. 001-05318) is incorporated herein by reference.
10.34*	Form of Kennametal Inc. Nonstatutory Stock Option Award for Non-Employee Directors (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.9 to the Form 8-K dated February 2, 2015 (File No. 001-05318) is incorporated herein by reference.
10.35*	Form of Kennametal Inc. Nonstatutory Stock Option Award - Alternate Form (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.10 to the Form 8-K dated February 2, 2015 (File No. 001-05318) is incorporated herein by reference.
10.36*	Form of Kennametal Inc. Cash Settled Share-Based Award for China-based Employees (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.12 to the Form 8-K dated February 2, 2015 (File No. 001-05318) is incorporated herein by reference.
10.37*	Form of Kennametal Inc. Performance Unit Award (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.1 to the Form 8-K dated July 30, 2015, (File No. 001-05318) is incorporated herein by reference.
10.38*	Form of Kennametal Inc. Restricted Unit Award (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.3 to the Form 8-K dated July 30, 2015, (File No. 001-05318) is incorporated herein by reference.
10.39*	Form of Kennametal Inc. Restricted Unit Award - Alternate Form (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.5 to the Form 8-K dated July 30, 2015, (File No. 001-05318) is incorporated herein by reference.
10.40*	Form of Kennametal Inc. Cash Settled Share-Based Award for China-based Employees (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.6 to the Form 8-K dated July 30, 2015, (File No. 001-05318) is incorporated herein by reference.
10.41*	Form of Kennametal Inc. Nonstatutory Stock Option Award (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.7 to the Form 8-K dated July 30, 2015, (File No. 001-05318) is incorporated herein by reference.
10.42*	Form of Kennametal Inc. Nonstatutory Stock Option Award - Alternate Form (granted under Amendment No. 1 to the Kennametal Inc. Stock and Incentive Plan of 2010 (As Amended and Restated October 22, 2013))	Exhibit 10.9 to the Form 8-K dated July 30, 2015, (File No. 001-05318) is incorporated herein by reference.
10.43*	Kennametal Inc. 2016 Stock and Incentive Plan	Appendix C of 2016 Proxy Statement filed September 13, 2016 (File No. 001-05318) is incorporated by reference herein.
10.44*	Form of Kennametal Inc. Performance Unit Award (granted under Kennametal Inc. Stock and Incentive Plan of 2010, as amended and restated on October 22, 2013, and amended on January 27, 2015)	Exhibit 10.1 of the Form 10-Q filed November 7, 2016 (File No. 001-05318) is incorporated by reference herein.
10.45*	Form of Kennametal Performance Unit Award (for President and CEO) (granted under Kennametal Inc. Stock and Incentive Plan of 2010, as amended and restated on October 22, 2013, and amended on January 27, 2015)	Exhibit 10.2 of the Form 10-Q filed November 7, 2016 (File No. 001-05318) is incorporated by reference herein.
10.46*	Form of Kennametal Inc. Restricted Unit Award (granted under the Kennametal Inc. 2016 Stock and Incentive Plan)	Exhibit 10.4 of the Form 10-Q filed November 7, 2016 (File No. 001-05318) is incorporated by reference herein.
10.47*	Form of Kennametal Inc. Cash Settled Share-Based Award for China-Based Employees (granted under the Kennametal Inc. 2016 Stock and Incentive Plan)	Exhibit 10.5 of the Form 10-Q filed November 7, 2016 (File No. 001-05318) is incorporated by reference herein.
10.48*	Form of Kennametal Inc. Restricted Stock Unit Award (three year cliff vest) (granted under the Kennametal Inc. 2016 Stock and Incentive Plan)	Exhibit 10.1 of the Form 10-Q filed February 8, 2017 (File No. 001-05318) is incorporated by reference herein.

10.49*	Form of Updated Kennametal Inc. Restricted Unit Award (granted under the Kennametal Inc. Stock and Incentive Plan of 2016)	Exhibit 10.74 to Form 10-K filed August 14, 2017 (File No. 001-05318) is incorporated by reference herein.
10.50*	Form of Kennametal Inc. Restricted Unit Award for Non-Employee Directors (granted under the Kennametal Inc. Stock and Incentive Plan of 2016)	Exhibit 10.75 to Form 10-K filed August 14, 2017 (File No. 001-05318) is incorporated by reference herein.
10.51*	Form of Kennametal Inc. Cash-Settled Restricted Unit Award for China-based Employees (granted under the Kennametal Inc. Stock and Incentive Plan of 2016)	Exhibit 10.76 to Form 10-K filed August 14, 2017 (File No. 001-05318) is incorporated by reference herein.
10.52*	Form of Updated Kennametal Inc. Cash-Settled Restricted Unit Award for China-based Employees (granted under the Kennametal Inc. Stock and Incentive Plan of 2016)	Filed herewith.
10.53*	Form of Kennametal Inc. Performance Unit Award (granted under the Kennametal Inc. Stock and Incentive Plan of 2016)	Exhibit 10.77 to Form 10-K filed August 14, 2017 (File No. 001-05318) is incorporated by reference herein.
10.54*	Form of Fiscal 2020 Kennametal Inc. Performance Unit Award (granted under the Kennametal Inc. Stock and Incentive Plan of 2016)	Filed herewith.
10.55*	Form of Kennametal Inc. Retention Restricted Unit Award (granted under the Kennametal Inc. Stock and Incentive Plan of 2016)	Exhibit 10.78 to Form 10-K filed August 14, 2017 (File No. 001-05318) is incorporated by reference herein.
10.56*	Form of Amended and Restated Officer's Employment Agreement with President and CEO Christopher Rossi	Exhibit 10.2 to Form 10-Q filed November 6, 2018 (File No. 001-05318) is incorporated by reference herein.
10.57*	Kennametal Inc. Restoration Plan (dated January 1, 2018)	Exhibit 10.1 of the Form 8-K filed November 3, 2017 (File No. 001-05318) is incorporated herein by reference.
10.58*	Kennametal Inc. Restoration Plan Adoption Agreement (dated January 1, 2018)	Exhibit 10.2 of the Form 8-K filed November 3, 2017 (File No. 001-05318) is incorporated herein by reference.
10.59*	Second Amendment to the Kennametal Inc. Restoration Plan (dated July 1, 2019)	Filed herewith.
10.60*	2018 Form of Officer's Employment Agreement with certain Named Executive Officers	Exhibit 10.60 of the Form 10-K filed August 10, 2018 (File No. 001-05318) is incorporated by reference herein.
10.61*	Schedule of Executive Officers who have entered into the 2018 Form of Officer's Employment Agreement as set forth in Exhibit 10.60	Filed herewith.
10.62	Fifth Amended and Restated Credit Agreement dated as of June 21, 2018 by and among Kennametal Inc. and Kennametal Europe GmbH (the "Borrowers") and the several banks and other financial institutions or entities from time to time parties thereto (the "Lenders"), Bank of America Merrill Lynch International Limited, as Euro Swingline Lender, PNC Bank, N.A. and JPMorgan Chase Bank, N.A., as co-syndication agents (in such capacity, the "Co-Syndication Agents"), Citizens Bank of Pennsylvania, MUFG Bank, Ltd. and Mizuho Bank, Ltd., as co-documentation agents (in such capacity, the "Co-Documentation Agents") and Bank of America, N.A., as administrative agent.	Exhibit 10.1 of the Form 8-K filed June 22, 2018 (File No. 001-05318) is incorporated herein by reference.
10.63*	Separation Agreement for Jan Kees van Gaalen	Exhibit 10.1 of the Form 8-K filed September 13, 2018 (File No. 001-05318) is incorporated herein by reference.
21	**Subsidiaries of the Registrant**	**Filed herewith.**
23	**Consent of Independent Registered Public Accounting Firm**	**Filed herewith.**
31	**Certifications**	
31.1	Certification executed by Christopher Rossi, President and Chief Executive Officer of Kennametal Inc.	Filed herewith.
31.2	Certification executed by Damon J. Audia, Vice President and Chief Financial Officer of Kennametal Inc.	Filed herewith.
32	**Section 1350 Certifications**	
32.1	Certification Pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, executed by Christopher Rossi, President and Chief Executive Officer of Kennametal Inc.; and Damon J. Audia, Vice President and Chief Financial Officer of Kennametal Inc.	Filed herewith.

*Denotes management contract or compensatory plan or arrangement.

101	**XBRL**	
101.INS	XBRL Instance Document.	Filed herewith.
101.SCH	XBRL Taxonomy Extension Schema Document.	Filed herewith.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.	Filed herewith.

101.DEF	XBRL Taxonomy Definition Linkbase	Filed herewith.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.	Filed herewith.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.	Filed herewith.

Table of Contents

SCHEDULE II — VALUATION AND QUALIFYING ACCOUNTS AND RESERVES

(In thousands) For the year ended June 30	Balance at Beginning of Year	Charges to Costs and Expenses	Charged to Other Comprehensive Income (Loss)	Recoveries	Other Adjustments	Deductions from Reserves	Balance at End of Year
2019							
Allowance for doubtful accounts	$ 11,807	$ 2,366	$ —	$ 111	$ (248) [1]	$ (3,953) [2]	$ 10,083
Reserve for excess and obsolete inventory	31,257	12,343	—	—	(484) [1]	(5,721) [3]	37,395
Deferred tax asset valuation allowance	21,629	(5,597)	—	—	(1,418) [1]	—	14,614
2018							
Allowance for doubtful accounts	$ 13,693	$ 1,831	$ —	$ 559	$ (135) [1]	$ (4,141) [2]	$ 11,807
Reserve for excess and obsolete inventory	32,114	9,067	—	—	108 [1]	(10,032) [3]	31,257
Deferred tax asset valuation allowance	116,770	(94,641) [5]	511	—	(1,011) [1]	—	21,629
2017							
Allowance for doubtful accounts	$ 12,724	$ 3,589	$ —	$ 45	$ (24) [1]	$ (2,641) [2]	$ 13,693
Reserve for excess and obsolete inventory	36,713	9,603	—	—	328 [1]	(14,530) [3]	32,114
Deferred tax asset valuation allowance	122,699	2,361	(5,805)	—	(2,485) [4]	—	116,770

(1) Represents foreign currency translation adjustment.

(2) Represents uncollected accounts charged against the allowance.

(3) Represents scrapped inventory and other charges against the reserve.

(4) Represents the shortfall on restricted stock units and non-qualified stock options which resulted in a reduction of our deferred tax asset and subsequently the valuation allowance, in addition to foreign currency translation adjustment.

(5) Represents primarily the effects from the release of the valuation allowance against our net deferred tax assets in the U.S.

ITEM 16 — FORM 10-K SUMMARY

None.

Exhibit 4.7

DESCRIPTION OF KENNAMETAL INC.'S SECURITIES

The following is a summary of the terms of each class of Kennametal Inc. (the "Company") securities that are registered under Section 12 of the Securities Exchange Act of 1934, as amended.

Common Stock

The following summary of the terms of the Company's common stock is not complete and is subject to and qualified in its entirety by reference to the relevant provisions of the laws of the Commonwealth of Pennsylvania, the Company's Amended and Restated Articles of Incorporation (the "Articles"), and its Amended and Restated Bylaws (the "Bylaws"). Copies of the Articles and Bylaws have been filed with the Securities and Exchange Commission.

General

The Company's Articles provide that it may issue up to 120,000,000 shares of capital stock, par value $1.25 per share (the "common stock").

Voting and Other Rights

Each share of the Company's common stock is entitled to one vote on all matters requiring a vote of shareholders and, subject to the rights of the holders of any outstanding shares of preferred stock, each shareholder is entitled to receive any dividends, in cash, securities or property, as the Company's board of directors may declare. Pennsylvania law prohibits the payment of dividends or the repurchase of the Company's shares if the Company is insolvent or if the Company would become insolvent after the dividend or repurchase. Holders of common stock do not have any preemptive or similar rights.

In the event of the Company's liquidation, dissolution or winding up, either voluntarily or involuntarily, subject to the rights of the holders of any outstanding shares of preferred stock, holders of common stock are entitled to share pro-rata in all of the Company's remaining assets available for distribution.

Anti-Takeover Provisions in Kennametal Inc.'s Charter and Bylaws

Certain provisions of the Articles and Bylaws could have an anti-takeover effect. These provisions are intended to enhance the likelihood of continuity and stability in the composition of the board of directors and in the strategies it formulates. They may also discourage an unsolicited takeover of the Company if the board of directors determines that the takeover is not in the best interests of the Company and its shareholders. These provisions could have the effect of discouraging certain attempts to acquire the Company or remove incumbent management even if some or a majority of shareholders deemed such an attempt to be in their best interests.

The provisions in the Articles and Bylaws include: (i) a procedure that requires shareholders to nominate directors in advance of a meeting to elect such directors; and (ii) the authority to issue additional shares of common stock or preferred stock without shareholder approval.

The Articles also include a provision requiring the affirmative vote of the holders of 75% of the Company's outstanding stock to approve certain mergers or other business combinations or transactions with five percent shareholders; a provision requiring the affirmative vote of the holders of 75% of the Company's outstanding stock to remove the entire board of directors, a class of the board of directors, any individual member of the board of directors without cause, or to increase the size of the board of directors to more than twelve members or decrease the size of the board of directors to fewer than eight members; a provision requiring, in the case of repurchases at a premium over market by the Company from any 4% Shareholder (as defined in the Articles), the affirmative vote of the holders of voting power of an amount of shares equal to the voting power of the 4% Shareholder plus a majority of the voting power of the other shares not held by the 4% Shareholder; and a provision requiring the affirmative vote of a majority of the Company's outstanding stock held by disinterested shareholders to approve certain business combinations involving a shareholder who beneficially owns more than 10% of the voting power of the Company's then outstanding voting stock, unless certain conditions are satisfied or the transaction is approved by a majority of disinterested directors.

Pursuant to the Articles and the laws of the Commonwealth of Pennsylvania, the board of directors is permitted to consider the effects of a change in control on the Company's non-shareholder constituencies, such as the Company's employees, suppliers, and other constituents and the communities in which the Company operates. Pursuant to this provision, the board of directors may be guided by factors in addition to price and other financial considerations.

The Bylaws provide that any shareholder who desires to present a nomination of person(s) for election to the board of directors or a proposal of other business at a shareholders' meeting (a "Proponent") must first provide timely written notice to the Secretary. The Bylaws set forth the deadlines for submitting such advance notice. As described in the Bylaws, the advance notice must set forth in reasonable detail (i) as to each person the shareholder proposes to nominate for election to the board of directors, information concerning the proposed nominee that would be required to be disclosed in a proxy statement or other filings required to be made in connection with the solicitation of proxies for the election of directors in an election contest, or otherwise required, in each case pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder, including such nominee's consent to serve as a director if elected and other specific information called for by the Bylaws, or (ii) as to any other business that the Proponent proposes to bring before the meeting, a description of the business desired to be brought before the meeting, the text of the proposal or business (including the text of any resolutions proposed for consideration and in the event that such business includes a proposal to amend the Bylaws, the language of the proposed amendment), the reasons for conducting such business at the meeting, and any material interest in such business of the Proponent and the beneficial owner, if any, on whose behalf the proposal is made. The advance notice must also include a representation from the Proponent that such person is a shareholder of record and intends to appear in person or by proxy at the meeting to present the nomination or other proposal specified in the notice, a description of the Proponent's beneficial ownership and other financial interests in the Company, a description of all arrangements or understandings between the Proponent and any other person or persons (naming such persons) pursuant to which the nomination or other proposal is to be made by the Proponent, and all such information regarding the Proponent's proposal and/or nominee(s) which would have been required to be included in a proxy statement filed pursuant to the proxy rules of the Securities and Exchange Commission had the nomination or other proposal been made by the board of directors.

PBCL Anti-Takeover Provisions

The Pennsylvania Business Corporation Law (the "PBCL") contains a number of statutory "anti-takeover" provisions, including Subchapters E, F, G and H of Chapter 25 and Sections 2521, 2524 and 2538 of the PBCL, which apply automatically to a Pennsylvania registered corporation (usually a public company) unless the corporation elects to opt-out of those provisions. The Company is a Pennsylvania registered corporation, and as a result it is subject to the anti-takeover provisions described below, however, the Company has elected to opt-out of certain provisions as described below. Descriptions of the anti-takeover provisions are qualified in their entirety by reference to the PBCL.

Subchapter E (relating to control transactions) generally provides that if any person or group acquires 20% or more of the Company's voting power, the remaining holders of voting shares may demand from such person or group the fair value of their voting shares, including a proportionate amount of any control premium.

Subchapter F (relating to business combinations) generally delays for five years and imposes conditions upon "business combinations" between an "interested shareholder" and the Company. The term "business combination" is defined broadly to include various transactions between a corporation and an interested shareholder including mergers, sales or leases of specified amounts of assets, liquidations, reclassifications and issuances of specified amounts of additional shares of stock of the corporation. An "interested shareholder" is defined generally as the beneficial owner of at least 20% of a corporation's voting shares.

Section 2521 of the PBCL provides that shareholders are not entitled to call special meetings of the shareholders and the Company's Bylaws do not give shareholders any right to call special meetings.

Section 2524 provides that shareholders cannot act by partial written consent unless permitted in the articles of incorporation.

Section 2538 of the PBCL generally establishes certain shareholder approval requirements with respect to specified transactions with "interested shareholders."

The Company has elected to opt out of Subchapters G and H of Chapter 25 of the PBCL. Subchapter G would have required a shareholder vote to accord voting rights to control shares acquired by a 20% shareholder in a control-share acquisition. Subchapter H would have required a person or group to disgorge to the Company any profits received from a sale of the Company's equity securities within 18 months after the person or group acquired, offered to acquire or publicly disclosed an intention to acquire 20% of the Company's voting power or publicly disclosed an intention to acquire control of the Company.

Transfer Agent and Registrar

Computershare is the Transfer Agent and Registrar for the Common Stock.

Preferred Stock Purchase Rights

On November 2, 2000, the Company adopted a rights plan pursuant to which the board of directors authorized and the Company distributed one preferred stock purchase right (each a "right") for each outstanding share of Common Stock at the close of business on September 5, 2000. The terms of the rights were governed by a Rights Agreement between the Company and BNY Mellon Shareowner Services (formerly ChaseMellon Shareholder Services, L.L.C.), as Rights Agent, dated as of November 2, 2000, as amended by the First Amendment to Rights Agreement, dated as of October 6, 2004 (the "Rights Agreement"). The rights expired on November 2, 2010 pursuant to the terms of the Rights Agreement.

The rights, which were automatically transferred with the related shares of Common Stock, and could be transferred only in connection with the transfer of the underlying shares of Common Stock (including a transfer to the Company), entitled the holder to purchase one one-hundredth of a share of Series One Preferred Stock at a price of $120 (subject to certain adjustments). Pursuant to the 2-for-1 stock split effected on December 17, 2007, the rights were automatically adjusted such that one-half of a right attached to each post-split share of Common Stock.

Subject to certain restrictions, the rights would become exercisable only if a person or group of persons acquired or intended to make a tender offer for 20% or more of the Company's Common Stock. If any person acquired 20% of the Common Stock, each right would have entitled the shareholder to receive upon exercise that number of shares of Common Stock having a market value of two times the exercise price. If the Company was acquired in a merger or certain other business combinations, each right then would have entitled the shareholder to purchase at the exercise price, that number of shares of the acquiring company having a market value at the time of the transaction of two times the exercise price.

Exhibit 10.6

SCHEDULE OF NAMED EXECUTIVE OFFICERS WHO HAVE ENTERED INTO THE FORM OF INDEMNIFICATION AGREEMENT AS SET FORTH IN EXHIBIT 10.5

NAME

Damon J. Audia
Judith L. Bacchus
Peter A. Dragich
Jan Kees van Gaalen
Michelle Keating
Ronald L. Port
Carlonda R. Reilly
Christopher Rossi
Patrick S. Watson

Exhibit 10.16

SCHEDULE OF NAMED EXECUTIVE OFFICERS WHO HAVE ENTERED INTO THE FORM OF EMPLOYMENT AGREEMENT AS SET FORTH IN EXHIBIT 10.15

Peter A. Dragich

Exhibit 10.52

KENNAMETAL INC.

CASH SETTLED LONG-TERM INCENTIVE AWARD

FOR CHINA-BASED EMPLOYEES

AwardDate: ____________________

Kennametal Inc. (the "Company") hereby awards to «name» (the "Awardee"), as of the Award Date listed above, this Cash Settled Long-Term Incentive Award (the "Award") for «number of award units» Award Units, subject to the terms and conditions of the Kennametal Inc. 2016 Stock and Incentive Plan (the "Plan") and the additional terms listed below. Capitalized terms used herein, but not otherwise defined, shall have the same meaning ascribed to them in the Plan.

1. Notwithstanding any provisions of the Plan, each Award Unit represents the right to receive a cash payment from the Company (or an Affiliate or Subsidiary thereof, as applicable) equal to the Fair Market Value of one Share of the Company's Capital ("Company Stock") Award, par value $1.25 per share, subject to the Forfeiture Restrictions (defined below). Notwithstanding, Award Units as initially awarded have no independent economic value, but rather are mere units of measurement used for purpose of calculating the number of Award Units to be used in determining the amount of the cash payment, if any, to be made under the Award. All vested Award Units are paid in cash to the Awardee and in no circumstance is Company Stock awarded to the Awardee.

2. The prohibition against transfer and the obligation to forfeit and surrender the Award Units to the Company are herein referred to as "Forfeiture Restrictions." The Award Units may not be sold, assigned, pledged, exchanged, hypothecated, gifted or otherwise transferred, encumbered or disposed of, except as described in the Plan, to the extent then subject to the Forfeiture Restrictions. The Forfeiture Restrictions will be binding upon, and enforceable against, any permitted transferee of the Award Units.

3. Provided that the Awardee does not Separate from Service and maintains Continuous Status as an Employee from the Award Date through the lapse date, the Forfeiture Restrictions will lapse as follows: (a) on the first anniversary of the Award Date, one-third (1/3) of the Award Units will vest and the Forfeiture Restrictions will lapse as to those Award Units; (b) on the second anniversary of the Award Date, an additional one-third (1/3) of the Award Units will vest and the Forfeiture Restrictions will lapse as to those Award Units; and (c) on the third anniversary of the Award Date, the remaining one-third (1/3) of the Award Units will vest and the Forfeiture Restrictions will lapse as to those Award Units.

4. The Awardee shall have only the Company's unfunded, unsecured promise to pay pursuant to the terms of this Award. The rights of the Awardee hereunder shall be that of an unsecured general creditor of the Company, and the Awardee shall not have any security interest in any assets of the Company (or an Affiliate or Subsidiary thereof). The Awardee shall not have any rights of ownership in Company Stock, including, but not limited to, the right to vote or accrue dividends on Company Stock .

5. The Award Units, to the extent then subject to the Forfeiture Restrictions, will be forfeited to the Company upon Separation from Service for any reason *other than* death, Disability, Retirement (including Early Retirement), or involuntary termination by the Company without cause or voluntary termination by the Awardee for Good Reason (a) within the six-month period immediately preceding a Change in Control in contemplation of such Change in Control (and the Change in Control actually occurs) or (b) during the two-year period following a Change in Control (a " Change in Control Separation"). In the event that the Awardee Separates from Service as a result of death, Disability, Retirement (including Early Retirement) or a Change in Control Separation, the vesting and/or forfeiture of the Award Units shall be determined as provided in the Plan.

6. Except as otherwise provided herein, a cash payment equal to the Fair Market Value of the Shares of Company Stock underlying the Award Units which are no longer subject to Forfeiture Restrictions shall be made to the Awardee on the lapse date (or as soon as reasonably practicable thereafter but in no event later than the 15th day of the third month following the end of the fiscal year in which the lapse date occurs), subject to the Awardee's satisfaction of all applicable income and employment withholding taxes. For the avoidance of doubt, in the People's Republic of China, the Company, per se, will not make such cash payment to the Awardee, instead, the Chinese local subsidiary of the Company will, using its own RMB funds, make such cash payment in RMB equal to the Fair Market Value at the current foreign exchange rate to the Awardee on the lapse date.

7. Notwithstanding anything to the contrary in this Award or the Plan, in the event that this Award is not accepted by the Awardee on or before the date that is 180 days from the Award Date noted herein (the "Forfeiture Date"), then this Award shall become null and void and all Award Units subject to this Award shall be forfeited by the Awardee as of the Forfeiture Date. For acceptance to be valid, the Awardee must accept this Award in the manner specified by the Company.

8. All other terms and conditions applicable to this Award are contained in the Plan. A copy of the Plan and related Prospectus is available on your accounts page at netbenefits.fidelity.com under Plan Information and Documents, as well as on The Hub under Human Resources.

KENNAMETAL INC.

By: Michelle R. Keating
Title: Vice President, Secretary and General Counsel

Exhibit 10.54

KENNAMETAL INC.

PERFORMANCE UNIT AWARD

Grant Date: ________________

Kennametal Inc. (the "Company") hereby grants to «name» (the "Awardee"), as of the Grant Date listed above, this Performance Unit Award (the "Award") for «number of target stock units» Stock Units, subject to the terms and conditions of the Kennametal Inc. 2016 Stock and Incentive (the "Plan") and the additional terms listed below. Capitalized terms used herein, but not otherwise defined, shall have the same meaning ascribed to them in the Plan.

1. Each Stock Unit represents the right to receive one Share of the Company's Capital Stock, par value $1.25 per share, subject to the satisfaction of the Service Condition described herein and the Performance Conditions attached hereto as **Exhibit A**. Stock Units as initially awarded have no independent economic value, but rather are mere units of measurement used for purposes of calculating the number of Shares, if any, to be delivered under this Award. The maximum amount of Stock Units that may be earned under this Award is equal to 2.0 times the target number of Stock Units listed in the preamble above.

2. Except as otherwise provided in this Award, Awardee must be actively employed by the Company on the Payment Date (defined below) to be eligible to receive Shares in payment of any Stock Units earned under this Award (the "Service Condition").

3. In addition to satisfaction of the Service Condition, payment under this Award is subject to, and contingent upon, achievement of the annual Performance Conditions during the Performance Period specified on **Exhibit A**. The amount of this Award payable to Awardee will be determined by the level of achievement of the annual Performance Conditions as set forth in **Exhibit A**. Achievement of the Performance Conditions, including the level of achievement, if any, for each fiscal year in the Performance Period shall be determined by the Compensation Committee of the Board of Directors (the "Compensation Committee"), in its sole discretion, and Awardee agrees to be bound by such determination; provided, however, the Compensation Committee shall not use its discretionary authority reserved to it under Section 6(f) of the Plan to reduce the number of Stock Units earned, if any, based on the achievement of the Performance Conditions pursuant to the terms and conditions of this Award. For each fiscal year of the Performance Period, any Stock Units that are not earned will be cancelled and forfeited at the end of such fiscal year.

4. Issuance and Distribution.

a. At the end of each fiscal year of the Performance Period to which this Award relates, the Compensation Committee will certify in writing the extent to which the applicable annual Performance Conditions have been achieved. For purposes of this provision, and for so long as the Code permits, the approved minutes of the Committee meeting in which the certification is made may be treated as written certification.

b. Subject to the terms and conditions of this Award and unless otherwise specifically provided herein, Stock Units earned by an Awardee will be settled and paid in Shares of the Company's Capital Stock as soon as practicable following the end of the three-year Performance Period on a date determined in the Company's discretion, but in no event later than the last day of the "applicable 2½ month period" specified in Treas. Reg. §1.409A-1(b)(4) (the "Payment Date").

5. Change in Awardee's Status; Change in Control.

a. Death or Disability. In the event an Awardee Separates from Service before the Payment Date on account of death or Disability, the Service Condition will be waived. For completed fiscal years, Awardee shall be entitled to receive payment for any Stock Units that have been earned based on the achievement of the Performance Conditions applicable to such fiscal year. For fiscal years not completed, the Performance Conditions will be deemed to have been achieved at the target level and the Awardee will be deemed to have earned for each such fiscal year a number of Stock Units that were able to be earned for such fiscal year.

Subject to the terms and conditions of this Award and unless otherwise specifically provided herein, in the event an Awardee Separates from Service on account of death or Disability, the Stock Units, to the extent earned by the Awardee, shall be paid as soon as practicable following the date of such Separation from Service, but in no event later than the last day of the "applicable 2½ month period" specified in Treas. Reg. §1.409A-1(b)(4).

b. Change in Control. In the event there is a Change in Control during the Performance Period, (i) with respect to all outstanding Performance Units subject to this Award (other than Performance Units for fiscal years within the Performance Period that were completed prior to the Change in Control), the target level of performance set forth with respect to each performance criterion under such Performance Units shall be deemed to have been attained and such Performance Units shall be converted into, and remain outstanding, as Restricted Units and (ii) with respect to Performance Units for fiscal years within the Performance Period that were completed prior to the Change in Control, such Performance Units, measured at actual performance achieved, shall remain outstanding. Unless otherwise specifically provided herein, payment under this Award will remain subject to the satisfaction of the Service Condition.

c. Change in Control Separation. In the event an Awardee Separates from Service prior to the Payment Date on account of an involuntary termination by the Company without cause or Awardee voluntarily terminates employment for Good Reason (as defined in the Plan) (a) within the six-month period immediately preceding a Change in Control in contemplation of such Change in Control (and the Change in Control actually occurs) or (b) during the two-year period following a Change in Control (a "Change in Control Separation"), the Service Condition applicable to the Performance Units and/or Restricted Units into which such Performance Units were converted upon the Change in Control will be waived and such Performance Units and/or Restricted Units shall be fully vested and nonforfeitable.

d. Retirement. In the event a Retirement Eligible Awardee (as defined below) Separates from Service on account of Retirement (including early retirement) during the Performance Period, the Service Condition will be waived and the amount of this Award to be paid, if any, will be determined as follows based upon the actual achievement of the Performance Condition: For completed fiscal years, Awardee shall be entitled to receive payment for any Stock Units that have been earned based on the achievement of the Performance Conditions applicable to such Performance Period. For the fiscal year in which the Separation from Service occurs, the Performance Conditions will be deemed to have been achieved at the target level and the Awardee will be entitled to receive a prorata payment for a number of Stock Units at target applicable to such fiscal year, based on the number of completed months starting with July 1st of the fiscal year in which the Separation from Service occurs and ending with the month of the Awardee's Retirement. All other Stock Units granted under this Award, including Stock Units that could have been earned for fiscal years after the fiscal year in which the Separation from Service occurred, shall be cancelled and forfeited without payment by the Company or any Affiliate.

With respect to an Awardee who Separates from Service on account of Retirement during the Performance Period (a "Retirement Eligible Awardee"), any payment for completed fiscal years and any prorata payment for the fiscal year in which the Separation from Service occurs made to such Retirement Eligible Awardee under this Award shall be paid as soon as practicable following the date of such Separation from Service. Notwithstanding the foregoing or any provisions of this Award or the Plan to the contrary, for a U.S. participant who is a "specified employee" under Section 409A of the Internal Revenue Code of 1986, as amended (the "Code") upon Separation from Service due to Retirement (including Early Retirement), Disability or a Change in Control Separation, the delivery of any Shares underlying this Award will be delayed and delivered on the first day following the six (6) month anniversary of the Awardee's Separation from Service (or upon earlier death) if and to the extent such payments would constitute or be considered as deferred compensation under Code Section 409A, subject to the Awardee's satisfaction of all applicable income and employment withholding taxes.

e. All Other Separations from Service. In the event an Awardee Separates from Service for any other reason (other than death, Disability, Retirement or Change in Control Separation), including, but not limited to, voluntarily by the Awardee, or involuntarily by the Company with or without cause, prior to the Payment Date, all Stock Units granted to the Awardee shall be cancelled and forfeited, whether payable or not, without payment by the Company or any Affiliate.

6. The Stock Units will be entitled to receive Dividend Equivalents, which will be subject to all conditions and restrictions applicable to the underlying Stock Units to which they relate. Dividend Equivalents will accrue during the Performance Period. At the end of each fiscal year, Dividend Equivalents will be earned only for Stock Units that are earned or deemed earned under this Award for that fiscal year. With respect to Stock Units that are not earned for a fiscal year (because the applicable Performance Conditions are not satisfied or otherwise), Dividend Equivalents that were accrued for those Stock Units will be cancelled and forfeited along with the Stock Units and underlying Shares, without payment by the Company or any Affiliate. Dividend Equivalents will be paid in cash at such time as the underlying Stock Units to which they relate are paid.

7. The Stock Units may not be sold, assigned, pledged, exchanged, hypothecated, gifted or otherwise transferred, encumbered or disposed of prior to the Payment Date, except as described herein or in the Plan.

8. The Shares underlying the Stock Units shall not be sold or otherwise disposed of in any manner that would constitute a violation of any applicable federal or state securities laws. The Company may refuse to register a transfer of the Shares on the stock transfer records of the Company if the transfer constitutes a violation of any applicable securities law and the Company may give related instructions to its transfer agent, if any, to stop registration of the transfer of the Shares.

9. This Performance Unit Award is intended to comply with Section 409A of the Internal Revenue Code (which deals with nonqualified deferred compensation) or an exception thereto and the regulations promulgated thereunder and will be construed accordingly. To the extent a payment is subject to Section 409A and not excepted therefrom, such payment shall be treated as made on the specified date of payment if such payment is made at such date or a later date in the same calendar year or, if later, by the 15th day of the third calendar month following the specified date of payment, as provided and in accordance with Treas. Reg. § 1.409A-3(d). An Awardee shall have no right to designate the date of any payment under this Award. The Company reserves the right to administer, amend or modify the Award or to take any other action necessary or desirable to enable the Award to be interpreted and construed accordingly. Notwithstanding the foregoing, the Awardee acknowledges and agrees that Section 409A may impose upon the Awardee certain taxes or interest charges for which the Awardee is and shall remain solely responsible.

10. Notwithstanding anything to the contrary in this Award or the Plan, in the event that this Award is not accepted by the Awardee on or before the date that is 180 days from the grant date noted herein (the “Forfeiture Date”), then this Award shall become null and void and all Stock Units subject to this Award shall be forfeited by the Awardee as of the Forfeiture Date. For acceptance to be valid, the Awardee must accept this Award in the manner specified by the Company. Any Shares underlying the Stock Units covered by this Award that are forfeited by the Awardee shall be returned to the Plan and resume the status of shares available for grant.

11. All other terms and conditions applicable to this Award are contained in the Plan. A copy of the Plan and related Prospectus is available on your accounts page at netbenefits.fidelity.com under Plan Information and Documents, as well as on The Hub under Human Resources.

KENNAMETAL INC.

By: Michelle R. Keating
Title: Vice President, Secretary and General Counsel

Exhibit A

Performance Conditions for FY20 LTIP Performance Unit Awards

I. RETURN ON INVESTED CAPITAL (ROIC) COMPONENT: WEIGHTED AT 100%:

	ROIC			
	FY20	**FY21**	**FY22**	**Payout Multiple Range**
Maximum	18.2%	18.2%	18.2%	160%
Target	13.0%	13.0%	13.0%	100%
Threshold	9.1%	9.1%	9.1%	50%

The table above sets forth the three-year period beginning July 1, 2019 and ending June 30, 2022 (“Performance Period”) referenced in the Performance Unit Award Agreement to which this Exhibit A is attached.

Interpolation between values shown in the above table will be made on a straight line basis. There will be no payment for performance below Threshold, and no additional payment for performance above Maximum.

Subject to the terms and conditions of this Award, up to 160% of the number of Stock Units granted pursuant to this agreement may be earned with regard to the ROIC component for the Performance Period (ROIC Earned Stock Units).

II. RELATIVE TOTAL SHAREHOLDER RETURN (RELATIVE TSR) VESTING MULTIPLE COMPONENT:

(a) The total ROIC Earned Stock Units above may have a Relative TSR Vesting Multiple applied to them based on (i) the Corporation’s Total Shareholder Return, as described below, relative to the Peer Group’s (as set forth in Attachment) Total Shareholder Return for the cumulative three year performance period of time ending on June 30, 2022 (“Performance Period”) and (ii) satisfaction of the condition of employment, as set forth below.

(i) “Total Shareholder Return” (or “TSR”) over the Performance Period shall be calculated in accordance with the following formula: ((Final Price + all cash dividends paid during the specified period, included as of the applicable ex-dividend date) / Initial Price) - 1, expressed as a percentage.

(ii) “Final Price” shall mean the average of the closing prices of the Common Stock of each peer company and the Company for the final thirty trading days of the specified period plus all cash dividends paid during the final thirty (30) trading days. For purposes of this Agreement, this shall mean the final thirty (30) trading days in fiscal 2022.

(iii) “Initial Price” shall mean the average of the closing prices of the Common Stock of each peer company and the Company for the last thirty (30) trading days preceding the beginning of the specified period plus all cash dividends paid during the last thirty (30) trading days. For purposes of this Agreement, the Initial Price shall be calculated based on the average of the closing stock prices over the thirty days ending on June 30, 2019.

(iv) The Company’s Total Shareholder Return for the Performance Period shall be measured as a percentile ranking in comparison with the index of the Peer Group Total Shareholder Return (the “Index”).

(b) The Relative TSR Vesting Multiple to be applied to the total number of ROIC Earned Stock Units to determine the total number of shares of Common Stock to be received pursuant to this agreement shall be the “Award Shares” and shall be calculated as follows:

If the Company’s TSR rank against the Peer Group is:	**Relative TSR Vesting Multiple (% of ROIC Earned Stock Units)**
at or below the 25th percentile (Threshold)	80%
at the 50th percentile (Target)	100%
at the 75th percentile or more (Maximum)	125%

The percentile rank calculation shall be calculated without including the Company.

The Relative TSR Vesting Multiple is based on the Company’s Total Shareholder Return for the Performance Period relative to the Index.

The Relative TSR Vesting Multiple shall be interpolated on a straight-line basis between the percentile levels in the above table.

The Index group companies shall consist of those companies that comprise the S&P 400 Capital Goods Index as of July 1, 2019 and listed on the following attached page. Peer Group companies will be adjusted as follows for activity during the Performance Period:

- If the Company or a member of the Peer Group splits its stock, such company’s TSR will be adjusted for the stock split
- If a member of the Peer Group is acquired by another company, the acquired Peer Group company will be removed from the Peer Group for the entire Performance Period
- If a member of the Peer Group sells, spins-off, or disposes of a portion of its business representing more than 50% of such Company’s total assets during the Performance Period, such Company will be removed from the Peer Group
- If a member of the Peer Group acquires another company, the acquiring Peer Group company will remain in the Peer Group for the Performance Period
- If a member of the Peer Group is delisted on all major stock exchanges, such delisted company will be removed from the Peer Group for the entire Performance Period
- Members of the Peer Group that file for bankruptcy, liquidation or similar reorganization during the Performance Period will remain in the Peer Group, positioned below the lowest performing nonbankrupt member of the Peer Group

Any adjustments resulting in the removal of a peer company will not impact completed measurement periods during an outstanding performance period.

The Compensation Committee shall have the authority to make adjustments in response to a change in circumstances that results in a member of the peer group no longer satisfying the criteria for which such member was originally selected.

S&P 400 Capital Goods Index as of July 1, 2019

Company Name	Exchange: Ticker
Acuity Brands, Inc.	NYSE: AYI
AECOM Technology Corporation	NYSE: ACM
AGCO Corporation	NYSE: AGCO
Axon Enterprise, Inc.	Nasdaq: AAXN
Carlisle Companies Incorporated	NYSE: CSL
Colfax Corporation	NYSE: CFX
Crane Co.	NYSE: CR
Curtiss-Wright Corporation	NYSE: CW
Donaldson Company, Inc.	NYSE: DCI
Dycom Industries, Inc.	NYSE: DY
EMCOR Group Inc.	NYSE: EME
Enersys	NYSE: ENS
Fluor Corporation	NYSE: FLR
GATX Corp.	NYSE: GMT
Graco Inc.	NYSE: GGG
Granite Construction Incorporated	NYSE: GVA
Hubbell Inc.	NYSE: HUB.B
IDEX Corporation	NYSE: IEX
ITT Corporation	NYSE: ITT
Lennox International, Inc.	NYSE: LII
Lincoln Electric Holdings Inc.	Nasdaq: LECO
MasTec, Inc.	NYSE: MTZ
MSC Industrial Direct Co. Inc.	NYSE: MSM
Nordson Corporation	Nasdaq: NDSN
NOW Inc.	NYSE: DNOW
nVent Electric plc	NYSE: NVT
Oshkosh Corporation	NYSE: OSK
Regal Beloit Corporation	NYSE: RBC
Residio Technologies Incorporated	NYSE: REZI
Teledyne Technologies Inc.	NYSE: TDY
Terex Corp.	NYSE: TEX
The Timken Company	NYSE: TKR
The Toro Company	NYSE: TTC
Trex Company, Inc.	NYSE: TREX
Trinity Industries Inc.	NYSE: TRN
Valmont Industries, Inc.	NYSE: VMI
Watsco Inc.	NYSE: WSO
Woodward, Inc.	Nasdaq: WWD

Exhibit 10.59

Amendment Number 2 to the

KENNAMETAL INC. RESTORATION PLAN

As Adopted
Effective January 1, 2018

Kennametal Inc. Restoration Plan

Pursuant to its Charter as amended and restated as of October, 2018, the Compensation Committee ("Committee") of the Board of Directors ("Board") of Kennametal Inc. ("Company") has, *inter alia*, the direct responsibility for matters relating to the compensation of the executive officers of the Company (the "Charter Mandate").

Pursuant to such Charter Mandate, the Committee previously adopted, effective as of January 1, 2018, an "excess benefit plan" within the meaning of the Employee Retirement Income Security Act of 1976, as amended ("ERISA") and a "parallel excess plan" under the rules of the New York Stock Exchange, known as the Kennametal Inc. Restoration Plan (the "Plan"). The Plan was primarily designed to restore Company contributions lost under the Kennametal Inc. Thrift Plus Plan ("TPP") due to the operation of the maximum compensation limit under Internal Revenue Code ("Code"). The Plan delegates to the ERISA Compliance Committee ("ERISA Committee") responsibility for the day-to-day administration of such Plan. The Plan has since been amended by the 1st Amendment.

At its meeting of [July 29, 2019], the Committee adopted a resolution incorporating the following recommendations of Company Management:

- that the TPP be amended to remove language describing the Board's ability to declare a discretionary contribution effective as of the fiscal year starting July 1, 2019 for the reasons presented to the Committee at the meeting; and
- that the Plan be amended so as to remove all references to the TPP discretionary contribution as a component piece of the "make whole" formula so as to eliminate the risk of confusing Plan participants regarding the basis for calculating the "make whole" contributions, if any, to which they may be entitled; and
- that the ERISA Committee be authorized and directed to adopt such TPP and/or Plan amendments as it determines to be necessary or appropriate to implement the actions taken by the Committee.

Kennametal Inc., acting through it's the ERISA Compliance Committee pursuant to the above-described authority and directions assigned to it by its Compensation Committee and pursuant to the rights reserved under Section 10.01 of the Kennametal Inc. Restoration Plan effective as of January 1, 2018, as amended, hereby formally amends the Plan by the execution of this amendment (Amendment Number 2) by its delegate by making the following changes to the Plan:

- Eliminating all references to the TPP discretionary contribution as a component piece of the "make whole" formula under the Plan; and

- Making such other related and/or conforming changes hereinafter described which the undersigned ERISA Committee member charged with reviewing and approving the amendment language determined were necessary or appropriate to reflect the foregoing changes.

In order to implement the premises, the following Sections or provisions of the Plan are amended:

- Section 5.1(b)(i) of the Adoption Agreement is amended and restated

All new or revised Plan document provisions are *italicized and double underlined* and all deleted text is lined out.

Executed , 2019, but effective as of July 1, 2019.

KENNAMETAL INC.

By:

Michelle R. Keating
Vice President, General Counsel & Secretary
and member, ERISA Compliance Committee

1. Effective for the fiscal year commencing July 1, 2019, Section 5.01(b)(i) of the Plan's Adoption Agreement, defining the formula for determining the amount of the Employer Other Contribution made to the Plan, is amended and restated in its entirety to remove the reference to the Discretionary contribution under the Kennametal Thrift Plus Plan as a component of such Employer Other Contributions, to read as follows (deleted text is lined out):

5.01 EMPLOYER CONTRIBUTIONS

****

(b) Other Contributions

***

(i) Amount

The Employer shall make a contribution on behalf of each Participant who satisfies the requirements of Section 5.01(b)(ii) equal to [complete the ones that are applicable]:

(A) ☐☐ An amount equal to [insert number] % of the Participant's Compensation

(B) [X☐☐] An amount determined by the Employer in its sole discretion.

(C) ☐☐ Contributions for each Participant shall be limited to $

(D) [X☐☐] Other:
The same maximum contribution percentage that the Participant would be eligible to receive as ~~either~~ a Company Matching ~~and/or Discretionary~~ Contribution in the Kennametal Thrift Plus Plan applied to Compensation in excess of the IRS 401(a)(17) limit in effect as of the beginning of the applicable Plan Year.

(E) ☐☐ Not Applicable [Proceed to Section 6.01]

2. Except as otherwise hereinabove provided, the terms and conditions of the Plan as reflected in the Plan document and its related Adoption Agreement, as amended by the 1st Amendment, are continued in full force and effect and its pages shall be revised as necessary or appropriate to reflect the changes hereinabove provided.

Exhibit 10.61

SCHEDULE OF NAMED EXECUTIVE OFFICERS WHO HAVE ENTERED INTO THE 2018 FORM OF INDEMNIFICATION AGREEMENT AS SET FORTH IN EXHIBIT 10.60

<u>NAME</u>

Damon J. Audia
Judith L. Bacchus
Michelle R. Keating
Ronald L. Port
Carlonda R. Reilly
Patrick S. Watson

Exhibit 21

CORPORATE DIRECTORY

Our consolidated subsidiaries and affiliated companies as of June 30, 2019 are:

Consolidated Subsidiaries and Affiliated Companies of Kennametal Inc.
Kennametal (Malaysia) Sdn. Bhd.
Kennametal (Singapore) Pte. Ltd.
Kennametal (Thailand) Co., Ltd.
Kennametal Australia Pty. Ltd.
Kennametal de Mexico, S.A. de C.V.
Kennametal Distribution Services Asia Pte. Ltd.
Kennametal Hardpoint (Taiwan) Inc.
Kennametal Holdings Europe Inc.
Kennametal International S.A. (Panama)
Kennametal Japan Ltd.
Kennametal Korea Ltd.
Kennametal Manufacturing S.A. (Pty) Ltd.
Kennametal Shared Services Private Limited
Kennametal South Africa (Pty.) Ltd.
PT. Kennametal Indonesia Services

Consolidated Subsidiary of Kennametal (Singapore) Pte. Ltd.
Widia Shinki Vietnam LLC (partnership)

Consolidated Subsidiaries of Kennametal Holdings Europe Inc.
Deloro Stellite Holdings Corporation
Kennametal Holdings, LLC
Kennametal Holdings, LLC Luxembourg S.C.S.

Consolidated Subsidiaries of Deloro Stellite Holdings Corporation
DSGP LLC
Kennametal Stellite, L.P.
Kennametal Stellite Inc.
Kennametal Stellite (Shanghai) Co., Ltd. (Joint Venture)

Consolidated Subsidiary of Kennametal Holdings, LLC Luxembourg S.C.S.
Kennametal Luxembourg Holding S.à r.l.

Consolidated Subsidiaries of Kennametal Luxembourg Holding S.à r.l.
Kennametal Argentina S.A.
Kennametal Chile Ltda.
Kennametal do Brasil Ltda.
Kennametal Europe GmbH
Kennametal Europe Holding GmbH
Kennametal Luxembourg S.à r.l.
Comericializadora Kennametal Bolivia S.R.L.

Consolidated Subsidiaries of Kennametal Luxembourg S.à r.l.
Kennametal Asia (HK) Ltd.
Kennametal Ltd.
Kennametal Sintec Holding GmbH

Consolidated Subsidiaries of Kennametal Asia (HK) Ltd.
Kennametal Asia (China) Management Co. Ltd.
Kennametal (Baotou) Company Ltd.
Kennametal (China) Co. Ltd.
Kennametal Hardpoint (Shanghai) Co., Ltd.
Kennametal (Xuzhou) Company, Ltd.

Consolidated Subsidiary of Kennametal Sintec Holding GmbH
Kennametal Sintec Keramik Asia Ltd.

Consolidated Subsidiary of Kennametal Sintec Keramik Asia Ltd.
Sunshine Power-Tech (Shanghai) Ltd.

Consolidated Subsidiaries of Kennametal Europe GmbH
Hanita Metal Works, Ltd.
Kennametal Holding GmbH
Kennametal Nederland B.V.
OOO Kennametal

Consolidated Subsidiary of Hanita Metal Works, Ltd.
Hanita Cutting Tools, Inc.

Consolidated Subsidiaries of Kennametal Holding GmbH
Kennametal GmbH
Kennametal Hungaria Kft.
Kennametal Logistics GmbH
Kennametal Shared Services GmbH
Kennametal Sintec Keramik GmbH
Widia GmbH

Consolidated Subsidiaries and Affiliated Companies of Kennametal GmbH
Kenci S.L.
Kennametal Belgium BVBA
Kennametal Deutschland GmbH
Kennametal France S.A.S.
Kennametal GmbH Organizacni Slozka
Kennametal GmbH Zweigniederlassung Osterreich
Kennametal GmbH Zweigniederlassung Rumanien
Kennametal GmbH Zweigniederlassung Slowakei
Kennametal Infrastructure GmbH
Kennametal Italia S.p.A.
Kennametal Kesici Takimlar Sanayi Ve Ticaret Anonim Sirketi
Kennametal Polska Sp. z o.o.
Kennametal Produktions GmbH & Co. KG. (partnership)
Kennametal Sp. z o.o.
Kennametal Stellram S.r.L.
Kennametal UK Limited
Ruebig Real Estate GmbH & Co. KG

Consolidated Subsidiary of Kennametal Italia S.p.A.
Kennametal Italia Produzione S.R.L.

Consolidated Affiliated Company of Kennametal Produktions GmbH & Co. KG (partnership)
Kennametal Real Estate GmbH & Co. KG (partnership)

Consolidated Affiliated Company of Kennametal Deutschland GmbH
Kennametal (Deutschland) Real Estate GmbH & Co. KG (partnership)

Consolidated Subsidiary of Kennametal Sp. z o.o
Kennametal Produkcja Sp. z o.o.

Consolidated Subsidiaries and Affiliated Companies of Widia GmbH
Kennametal Widia Produktions GmbH & Co. KG (partnership)
Kennametal Widia Real Estate GmbH & Co. KG (partnership)
Meturit AG

Consolidated Subsidiary of Meturit AG
Kennametal India Ltd.

Consolidated Subsidiary of Kennametal India Ltd.
Widia India Tooling Private Limited

Consolidated Subsidiaries of Kenci S.L.
Kenci Lda.
Kennametal Manufacturing Barcelona S.L.

Consolidated Subsidiaries of Kennametal UK Limited
Kennametal Logistics UK Ltd.
Kennametal Manufacturing UK Ltd.

Exhibit 23

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 033-65023, No. 333-18423, No. 333-18429, No. 333-18437, No. 333-77411, No. 333-88049, No. 333-30454, No. 333-30448, No. 333-53562, No. 333-100867, No. 333-120314, No. 333-124774, No. 333-142727, No. 333-154705, No. 333-170348, No. 333-193782, No. 333-214474, No. 333-222177) and Form S-3 (No. 333-154703, No. 333-219971) of Kennametal Inc. of our report dated August 13, 2019 relating to the financial statements and financial statement schedule and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

Pittsburgh, Pennsylvania
August 13, 2019

Exhibit 31.1

I, Christopher Rossi, certify that:

1. I have reviewed this annual report on Form 10-K of Kennametal 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: August 13, 2019

/s/ Christopher Rossi

Christopher Rossi
President and Chief Executive Officer

Exhibit 31.2

I, Damon J. Audia, certify that:

1. I have reviewed this annual report on Form 10-K of Kennametal 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: August 13, 2019

/s/ Damon J. Audia

Damon J. Audia

Vice President and Chief Financial Officer

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Kennametal Inc. (the “Corporation”) on Form 10-K for the period ended June 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), each of the undersigned officers of the Corporation certifies, pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to his knowledge:

1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Corporation.

/s/ Christopher Rossi
Christopher Rossi
President and Chief Executive Officer

August 13, 2019

/s/ Damon J. Audia
Damon J. Audia
Vice President and Chief Financial Officer

August 13, 2019

*This certification is made solely for purposes of 18 U.S.C. Section 1350, subject to the knowledge standard contained therein, and not for any other purpose.