PART I

ITEM 1. *Business*

General

Illinois Tool Works Inc. (the "Company" or "ITW") was founded in 1912 and incorporated in 1915. The Company's ticker symbol is ITW. The Company is a global manufacturer of a diversified range of industrial products and equipment with 84 divisions in 53 countries. As of December 31, 2019, the Company employed approximately 45,000 people.

The Company's operations are organized and managed based on similar product offerings and end markets, and are reported to senior management as the following seven segments: Automotive OEM; Food Equipment; Test & Measurement and Electronics; Welding; Polymers & Fluids; Construction Products; and Specialty Products. The following is a description of the Company's seven segments:

Automotive OEM— This segment is a global, niche supplier to top tier OEMs, providing unique innovation to address pain points for sophisticated customers with complex problems. Businesses in this segment produce components and fasteners for automotive-related applications. This segment primarily serves the automotive original equipment manufacturers and tiers market. Products in this segment include:

- plastic and metal components, fasteners and assemblies for automobiles, light trucks and other industrial uses.

Food Equipment— This segment is a highly focused and branded industry leader in commercial food equipment differentiated by innovation and integrated service offerings. This segment primarily serves the food service, food institutional/restaurant and food retail markets. Products in this segment include:

- warewashing equipment;
- cooking equipment, including ovens, ranges and broilers;
- refrigeration equipment, including refrigerators, freezers and prep tables;
- food processing equipment, including slicers, mixers and scales;
- kitchen exhaust, ventilation and pollution control systems; and
- food equipment service, maintenance and repair.

Test & Measurement and Electronics— This segment is a branded and innovative producer of test and measurement and electronic manufacturing and maintenance, repair, and operations, or "MRO" solutions that improve efficiency and quality for customers in diverse end markets. Businesses in this segment produce equipment, consumables, and related software for testing and measuring of materials and structures, as well as equipment and consumables used in the production of electronic subassemblies and microelectronics. This segment primarily serves the electronics, general industrial, automotive original equipment manufacturers and tiers, industrial capital goods, energy and consumer durables markets. Products in this segment include:

- equipment, consumables, and related software for testing and measuring of materials, structures, gases and fluids;
- electronic assembly equipment;
- electronic components and component packaging;
- static control equipment and consumables used for contamination control in clean room environments; and
- pressure sensitive adhesives and components for electronics, medical, transportation and telecommunications applications.

Welding— This segment is a branded value-added equipment and specialty consumable manufacturer with innovative and leading technology. Businesses in this segment produce arc welding equipment, consumables and accessories for a wide array of industrial and commercial applications. This segment primarily serves the general industrial market, which includes fabrication, shipbuilding and other general industrial markets, and energy, construction, MRO, automotive original equipment manufacturers and tiers, and industrial capital goods markets. Products in this segment include:

- arc welding equipment; and
- metal arc welding consumables and related accessories.

Polymers & Fluids— This segment is a branded supplier to niche markets that require value-added, differentiated products. Businesses in this segment produce engineered adhesives, sealants, lubrication and cutting fluids, and fluids and polymers for auto aftermarket maintenance and appearance. This segment primarily serves the automotive aftermarket, general industrial, MRO and construction markets. Products in this segment include:

- adhesives for industrial, construction and consumer purposes;
- chemical fluids which clean or add lubrication to machines;
- epoxy and resin-based coating products for industrial applications;
- hand wipes and cleaners for industrial applications;
- fluids, polymers and other supplies for auto aftermarket maintenance and appearance;
- fillers and putties for auto body repair; and
- polyester coatings and patch and repair products for the marine industry.

Construction Products— This segment is a branded supplier of innovative engineered fastening systems and solutions. This segment primarily serves the residential construction, renovation/remodel and commercial construction markets. Products in this segment include:

- fasteners and related fastening tools for wood and metal applications;
- anchors, fasteners and related tools for concrete applications;
- metal plate truss components and related equipment and software; and
- packaged hardware, fasteners, anchors and other products for retail.

Specialty Products— This segment is focused on diversified niche market opportunities with substantial patent protection producing beverage packaging equipment and consumables, product coding and marking equipment and consumables, and appliance components and fasteners. This segment primarily serves the food and beverage, general industrial, consumer durables, industrial capital goods and printing and publishing markets. Products in this segment include:

- line integration, conveyor systems and line automation for the food and beverage industries;
- plastic consumables that multi-pack cans and bottles and related equipment;
- foil, film and related equipment used to decorate consumer products;
- product coding and marking equipment and related consumables;
- plastic and metal closures and components for appliances;
- airport ground support equipment; and
- components for medical devices.

The information set forth below is applicable to all segments of the Company unless otherwise noted.

The ITW Business Model

The powerful and highly differentiated ITW Business Model is the Company’s core source of value creation. The ITW Business Model is the Company’s competitive advantage and defines how ITW creates value for its shareholders. It is comprised of three unique elements:

- ITW’s **80/20 Front-to-Back** process is the operating system that is applied in every ITW business. Initially introduced as a manufacturing efficiency tool in the 1980s, ITW has continually refined, improved and expanded 80/20 into a proprietary, holistic business management process that generates significant value for the Company and its customers. Through the application of data driven insights generated by 80/20 practice, ITW focuses on its largest and best opportunities (the “80”) and eliminates cost, complexity and distractions associated with the less profitable opportunities (the “20”). 80/20 enables ITW businesses to consistently achieve world-class operational excellence in product availability, quality, and innovation, while generating superior financial performance;

- **Customer-back Innovation** has fueled decades of profitable growth at ITW. The Company’s unique innovation approach is built on insight gathered from the 80/20 Front-to-Back process. Working from the customer back, ITW businesses position themselves as the go-to problem solver for their “80” customers. ITW’s innovation efforts are focused on understanding customer needs, particularly those in “80” markets with solid long-term growth fundamentals, and creating unique solutions to address those needs. These customer insights and learnings drive innovation at ITW and have contributed to a portfolio of approximately 18,000 granted and pending patents;

- ITW’s **Decentralized, Entrepreneurial Culture** enables ITW businesses to be fast, focused, and responsive. ITW businesses have significant flexibility within the framework of the ITW Business Model to customize their approach in order to best serve their specific customers' needs. ITW colleagues recognize their unique responsibilities to execute the Company's strategy and values. As a result, the Company maintains a focused and simple organizational structure that, combined with outstanding execution, delivers best-in-class services and solutions adapted to each business' customers and end markets.

Enterprise Strategy

In late 2012, ITW began its strategic framework transitioning the Company on its current path to fully leverage the compelling performance potential of the ITW Business Model. The Company undertook a complete review of its performance, focusing on its businesses delivering consistent above-market growth with best-in-class margins and returns, and developing a strategy to replicate that performance across its operations.

ITW determined that solid and consistent above-market organic growth is the core growth engine to deliver world-class financial performance and compelling long-term returns for its shareholders. To shift its primary growth engine to organic, the Company began executing a multi-step approach.

- The first step was to narrow the focus and improve the quality of ITW's business portfolio. As part of the Portfolio Management initiative, ITW exited businesses that were operating in commoditized market spaces and prioritized sustainable differentiation as a must-have requirement for all ITW businesses. This process included both divesting entire businesses and exiting commoditized product lines and customers inside otherwise highly differentiated ITW divisions.

  As a result of this work, ITW's business portfolio now has significantly higher organic growth potential. ITW segments and divisions now possess attractive and differentiated product lines and end markets as they continue to improve operating margins and generate price/cost increases. The Company achieved this through product line simplification, or eliminating the complexity and overhead costs associated with smaller product lines and customers, while supporting and growing the businesses' largest / most profitable customers and product lines.

- Step two, Business Structure Simplification, was implemented to simplify and scale up ITW’s operating structure to support increased engineering, marketing, and sales resources, and improve global reach and competitiveness, all of which were critical to driving accelerated organic growth. ITW now has 84 scaled-up divisions with significantly enhanced focus on growth investments, core customers and products, and customer-back innovation.

- The Strategic Sourcing initiative established sourcing as a core strategic and operational capability at ITW, delivering an average of one percent reduction in spend each year from 2013 through 2019 and continues to be a key contributor to the Company's ongoing enterprise strategy.

- With the initial portfolio realignment and scale-up work largely complete, the Company shifted its focus to preparing for and accelerating organic growth, reapplying the 80/20 Front-to-Back process to optimize its newly scaled-up divisions for growth, first, to build a foundation of operational excellence, and second, to identify the best opportunities to drive organic growth.

ITW has clearly demonstrated superior 80/20 management, resulting in meaningful incremental improvement in margins and returns as evidenced by the Company’s operating margin and after-tax return on invested capital. At the same time, these 80/20 initiatives can also result in restructuring initiatives that reduce costs and improve profitability and returns.

Path to Full Potential - Finishing the Job

Since the launch of the enterprise strategy, the Company has made considerable progress to position itself to reach full potential. The ITW Business Model and unique set of capabilities are a source of strong and enduring competitive advantage, but for the Company to truly finish the job and reach its full potential, every one of its divisions must also be operating at its full potential. To do so, the Company remains focused on its core principles to position ITW to perform to its full potential:

- Portfolio discipline
- 80/20 Front-to-Back practice excellence
- Full-potential organic growth

Portfolio Discipline

The Company only operates in industries where it can generate significant, long-term competitive advantage from the ITW Business Model. ITW businesses have the right “raw material” in terms of market and business attributes that best fit the ITW Business Model and have significant potential to drive above-market organic growth over the long-term.

The Company focuses on high-quality businesses, ensuring it operates in markets with positive long-term macro fundamentals and with customers that have critical needs and value ITW's differentiated products, services and solutions. ITW’s portfolio operates in highly diverse end markets and geographies which makes the Company more resilient in the face of uncertain or volatile market environments.

As part of its agenda to finish the job, the Company routinely evaluates its portfolio to ensure it delivers sustainable differentiation and drives consistent long-term performance. This includes both implementing portfolio refinements and assessing selective high-quality acquisitions to supplement ITW’s long-term growth potential.

The Company previously communicated its intent to explore options, including potential divestitures, for certain businesses with revenues totaling up to $1 billion. In the fourth quarter of 2019, the Company completed the divestitures of three businesses and continues to evaluate options for certain other businesses. The Company expects any earnings per share dilution from divestitures would be offset by incremental share repurchases. Refer to Note 2. Divestitures in Item 8. Financial Statements and Supplementary Data for more information regarding divestitures.

80/20 Front-to-Back Practice Excellence

The 80/20 Front-to-Back process is a rigorous, iterative and highly data-driven approach to identify where the Company has true differentiation and the ability to drive sustainable, high-quality organic growth. The Company simplifies and eliminates complexity and redesigns every aspect of its business to ensure focused execution on key opportunities, markets, customers, and products.

ITW will continue its efforts to finish the job and drive 80/20 Front-to-Back practice excellence in every division in the Company, every day. Driving strong operational excellence in the quality of 80/20 Front-to-Back practice across the Company, division by division, will produce further customer-facing performance improvement in a number of the Company's divisions and additional structural margin expansion at the enterprise level.

Full-Potential Organic Growth

Reaching full potential means that every division is positioned for sustainable, high-quality organic growth. The Company has clearly defined action plans aimed at leveraging the performance power of the ITW Business Model to achieve full-potential organic growth in every division, with specific focus on:

- "80” focused Market Penetration - fully leveraging the considerable growth potential that resides in the Company's largest and most differentiated product offerings and customer relationships
- Customer-Back Innovation - strengthening the Company's commitment to serial innovation and delivering a continuous flow of differentiated new products to its key customers
- Strategic Sales Excellence - deploying a high-performance sales function in every division

As the Company continues to make progress toward its full potential, the Company will explore opportunities to reinforce or further expand the long-term organic growth potential of ITW through the addition of selective high-quality acquisitions.

Current Year Developments

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

Distribution Methods

The Company’s businesses primarily distribute their products directly to industrial manufacturers and through independent distributors.

Backlog

Backlog generally is not considered a significant factor in the Company's businesses as relatively short delivery periods and rapid inventory turnover are characteristic of most of their products. Total backlog was $1.5 billion and $1.6 billion as of December 31, 2019 and 2018, respectively. Due to the predominately short-term nature of the Company's arrangements with its customers, backlog orders scheduled for shipment beyond calendar year 2020 were not material as of December 31, 2019.

Competition

With operations in 53 countries, the Company offers a wide range of products in a myriad of markets, many of which are fragmented, and the Company encounters a variety of competitors that vary by product line, end market and geographic area. The Company's competitors include many regional or specialized companies, as well as large U.S. and non-U.S. companies or divisions of large companies. Each of the Company's segments generally has several main competitors and numerous smaller ones in most of their end markets and geographic areas. In addition to numerous smaller regional competitors, the Welding segment competes globally with Lincoln Electric and ESAB.

In virtually all segments, the Company differentiates its businesses from its competitors based on product innovation, product quality, brand preference and service delivery. Technical capability is also a competitive factor in most segments. The Company believes that each segment's primary competitive advantages derive from the Company's business model and decentralized operating structure, which creates a strong focus on end markets and customers at the local level, enabling its businesses to respond rapidly to market dynamics. This structure enables the Company's businesses to drive operational excellence utilizing the Company's 80/20 Front-to-Back process and leveraging its product innovation capabilities. The Company also believes that its global footprint is a competitive advantage in many of its markets, especially in its Automotive OEM segment.

Raw Materials

The Company uses raw materials of various types, primarily steel, resins and chemicals, that are available from numerous commercial sources. The availability of materials and energy has not resulted in any significant business interruptions or other major problems, and no such problems are currently anticipated.

Intellectual Property

The Company owns approximately 3,600 unexpired U.S. patents and 8,700 foreign patents covering articles, methods and machines. In addition, the Company has approximately 1,500 applications for patents pending in the U.S. Patent Office and 4,300 applications pending in foreign patent offices. There is no assurance that any of these patents will be issued. The Company maintains a patent group for the administration of patents and processing of patent applications.

The Company believes that many of its patents are valuable and important; however, the expiration of any one of the Company's patents would not have a material effect on the Company's results of operations or financial position. The Company also credits its success in the markets it serves to engineering capability; manufacturing techniques; skills and efficiency; marketing and sales promotion; and service and delivery of quality products to its customers.

In addition to patents, many of the Company's products and services are sold under various owned or licensed trademarks, which are important to the Company in the aggregate. Some of the Company's more significant trademarks include ITW, which is also used in conjunction with the trademarks of many of the Company's businesses; Deltar and Shakeproof in the Automotive OEM segment; Hobart in the Food Equipment segment; Instron in the Test & Measurement and Electronics segment; Miller in the Welding segment; Rain-X and Permatex in the Polymers & Fluids segment; Paslode in the Construction Products segment; and Hi-Cone in the Specialty Products segment.

Environmental

The Company believes that its manufacturing plants and equipment are in substantial compliance with all applicable environmental regulations. Additional measures to maintain compliance are not expected to materially affect the Company's capital expenditures, competitive position, financial position or results of operations.

Various legislative and administrative regulations concerning environmental issues have become effective or are under consideration in many parts of the world relating to manufacturing processes and the sale or use of certain products. To date, such developments have not had a substantial adverse impact on the Company's revenues, earnings or cash flows.

Employees

The Company employed approximately 45,000 people as of December 31, 2019 and considers its employee relations to be excellent.

Information About Our Executive Officers

The executive officers of the Company serve at the discretion of the Board of Directors. Set forth below is information regarding the principal occupations and employment and business experience over the past five years for each executive officer. Unless otherwise stated, employment is by the Company.

Executive Officers of the Company as of February 14, 2020 were as follows:

Name	Age	Present Position	Year Elected to Present Position	Other Positions Held During 2015-2019
E. Scott Santi	58	Chairman & Chief Executive Officer	2015	President and Chief Executive Officer, 2012-2015
Axel Beck	54	Executive Vice President	2020	Vice President/General Manager, food equipment businesses, 2011-2016, Group President, food equipment businesses, 2016-2020
Kenneth Escoe	44	Executive Vice President	2020	Vice President/General Manager, welding businesses, 2014-2016, Vice President/General Manager, specialty products businesses, 2016-2019, Group President, specialty products businesses, 2019-2020
Norman D. Finch Jr.	55	Senior Vice President, General Counsel & Secretary	2017	Vice President, General Counsel and Secretary, Sealed Air Corporation, a global manufacturer of products related to food safety and security, facility hygiene and product protection, 2013-2017
John R. Hartnett	59	Executive Vice President	2012	
Michael M. Larsen	51	Senior Vice President & Chief Financial Officer	2013	
Mary K. Lawler	54	Senior Vice President & Chief Human Resources Officer	2014	
Steven L. Martindale	63	Executive Vice President	2008	
Christopher O'Herlihy	56	Vice Chairman	2015	Executive Vice President, 2010-2015
Randall J. Scheuneman	52	Vice President & Chief Accounting Officer	2009	
Lei Schlitz	53	Executive Vice President	2015	Group President, food equipment businesses, 2011-2015
Sharon Szafranski	53	Executive Vice President	2020	Vice President/General Manager, food equipment businesses, 2010-2016, Vice President/General Manager, test & measurement and electronics businesses, 2016-2019, Group President, test & measurement and electronics businesses, 2019-2020
Michael R. Zimmerman	59	Executive Vice President	2015	Group President, welding businesses, 2010-2015

Available Information

The Company electronically files reports with the Securities and Exchange Commission ("SEC"). The SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. Copies of the Company's Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 are also available free of charge through the Company's website (www.itw.com), as soon as reasonably practicable after electronically filing with or otherwise furnishing such information to the SEC, and are available in print to any shareholder who requests them. The Company will furnish any exhibit not contained herein upon the payment of a fee representing the reasonable cost to the Company of furnishing the exhibit. Requests for exhibits may be sent to Illinois Tool Works Inc., 155 Harlem Avenue, Glenview, IL 60025,
Attention: Secretary. Also posted on the Company’s website are the following:

- Statement of Principles of Conduct;
- Code of Ethics for CEO and key financial and accounting personnel;
- Charters of the Audit, Corporate Governance and Nominating, and Compensation Committees of the Board of Directors;
- Corporate Governance Guidelines;
- Global Anti-Corruption Policy;
- Corporate Social Responsibility Reports;
- Anti-Human Trafficking Disclosure;
- Conflict Minerals Policy Statement;
- Supplier Code of Conduct;
- Government Affairs Information;
- Environmental & Sustainability Policy;
- Human Rights Policy;
- Safety Policy; and
- United Kingdom Tax Policy Document.

ITEM 1A. ***Risk Factors***

The Company's business, financial condition, results of operations and cash flows are subject to various risks, including, but not limited to, those set forth below, which could cause actual results to vary materially from recent results or from anticipated future results. These risk factors should be considered together with information included elsewhere in this Annual Report on Form 10-K.

The Company's results are impacted by global economic conditions. Downturns in the markets served by the Company could adversely affect its businesses, results of operations or financial condition.

The Company's businesses are impacted by economic conditions around the globe. Slower economic growth, financial market instability, natural disasters, public health crises, high unemployment, government deficit reduction, sequestration and other austerity measures impacting the markets the Company serves can adversely affect the Company’s businesses by reducing demand for the Company's products and services, limiting financing available to the Company's customers, causing production delays, increasing order cancellations and the difficulty in collecting accounts receivable, increasing price competition, or increasing the risk that counterparties to the Company's contractual arrangements will become insolvent or otherwise unable to fulfill their obligations.

The global nature of the Company's operations subjects it to political and economic risks that could adversely affect its business, results of operations or financial condition.

Over 50% of the Company's net sales are derived from customers outside the United States, and the Company currently operates in 53 countries. The risks inherent in the Company's global operations include:

- fluctuation in currency exchange rates;
- limitations on ownership or participation in local enterprises;
- price controls, exchange controls and limitations on repatriation of earnings;
- transportation delays and interruptions;
- political, social and economic instability and disruptions;
- acts of terrorism;

- the impact of widespread public health crises;
- government embargoes or foreign trade restrictions;
- the imposition of duties and tariffs and other trade barriers and retaliatory countermeasures;
- government actions impacting international trade agreements;
- import and export controls;
- labor unrest and current and changing regulatory environments;
- the potential for expropriation or nationalization of enterprises;
- difficulties in staffing and managing multi-national operations;
- limitations on its ability to enforce legal rights and remedies; and
- potentially adverse tax consequences.

The current global geopolitical and trade environment has resulted in raw material inflation and potential for increased escalation of domestic and international tariffs and retaliatory trade policies. Further changes in U.S. trade policy (including new or additional increases in duties or tariffs) and additional retaliatory actions by U.S. trade partners could result in a worsening of economic conditions. Additionally, in early 2020, an outbreak of the coronavirus occurred in China and other jurisdictions. The extent of the outbreak and its impact on the markets served by the Company and on its operations is uncertain. A prolonged outbreak could interrupt the operations of the Company and its customers and suppliers. If the Company is unable to successfully manage these and other risks associated with managing and expanding its international businesses, the risks could have a material adverse effect on the Company's business, results of operations or financial condition.

The benefits from the Company’s Enterprise Strategy may not be as expected and the Company's financial results could be adversely impacted, or the Company may not meet its long-term financial performance targets.

As the Company continues to execute on its Enterprise Strategy initiatives, it remains focused on the core principles of portfolio discipline, 80/20 Front-to-Back practice excellence, and organic growth. Product line and customer base simplification activities, which are core elements of the Company’s 80/20 Front-to-Back process, continue to be applied by the Company’s operating divisions and are active elements of the Enterprise Strategy. Although these activities are expected to improve future operating margins and organic revenue growth, they are also expected to have a negative impact on the Company’s overall organic revenue growth in the short term. Additionally, other core activities of the Enterprise Strategy related to portfolio discipline and organic growth, including customer-back innovation and strategic sales excellence, may not have the desired impact on future operating results. If the Company is unable to realize the expected benefits from its Enterprise Strategy initiatives, the Company's financial results could be adversely impacted, or the Company may not meet its long-term financial performance targets.

The timing and amount of the Company’s share repurchases are subject to a number of uncertainties.

Share repurchases constitute a significant component of the Company’s capital allocation strategy. The Company funds its share repurchases with free cash flow and short-term borrowings. The amount and timing of share repurchases will be based on a variety of factors. Important factors that could cause the Company to limit, suspend or delay its share repurchases include unfavorable trading market conditions, the price of the Company's common stock, the nature of other investment opportunities presented to the Company from time to time, the ability to obtain financing at attractive rates and the availability of U.S. cash.

The Company may incur fines or penalties, damage to its reputation or other adverse consequences if its employees, agents or business partners violate anti-bribery, competition, export and import, environmental or other laws.

The Company has a decentralized operating structure under which its individual businesses are allowed significant decision-making autonomy within the Company’s strategic framework and internal financial and compliance controls. The Company cannot ensure that its internal controls will always protect against reckless or criminal acts committed by its employees, agents or business partners that might violate U.S. and/or non-U.S. laws, including anti-bribery, competition, export and import, and environmental laws. Any such improper actions could subject the Company to civil or criminal investigations, could lead to substantial civil or criminal monetary and non-monetary penalties against the Company or its subsidiaries, or could damage its reputation.

A significant fluctuation between the U.S. Dollar and other currencies could adversely impact the Company's operating income.

Although the Company's financial results are reported in U.S. Dollars, a significant portion of its sales and operating costs are realized in other currencies, with the largest concentration of foreign sales occurring in Europe. The Company's profitability is affected by movements of the U.S. Dollar against the Euro and other foreign currencies in which it generates revenues and incurs expenses. Significant long-term fluctuations in relative currency values, and in particular, an increase in the value of the U.S. Dollar against foreign currencies, has had and could have an adverse effect on profitability and financial condition.

If the Company is unable to successfully introduce new products, its future growth may be adversely affected.

The Company's ability to develop new products based on innovation can affect its competitive position and sometimes requires the investment of significant time and resources. Difficulties or delays in research, development, production or commercialization of new products and services may reduce future revenues and adversely affect the Company's competitive position. If the Company is unable to create sustainable product differentiation, its organic growth may be adversely affected.

If the Company is unable to adequately protect its intellectual property, its competitive position and results of operations may be adversely impacted.

Protecting the Company's intellectual property is critical to its innovation efforts. The Company owns patents, trade secrets, copyrights, trademarks and/or other intellectual property rights related to many of its products, and also has exclusive and non-exclusive license rights under intellectual property owned by others. The Company's intellectual property rights may be challenged or infringed upon by third parties, particularly in countries where property rights are not highly developed or protected, or the Company may be unable to maintain, renew or enter into new license agreements with third-party owners of intellectual property on reasonable terms. Unauthorized use of the Company's intellectual property rights or inability to preserve existing intellectual property rights could adversely impact the Company's competitive position and results of operations.

The Company's acquisition of businesses could negatively impact its profitability and returns.

The Company has engaged in various acquisitions in the past, and could choose to acquire additional businesses in the future. Acquisitions involve a number of risks and financial, accounting, managerial and operational challenges, including the following, any of which could adversely affect the Company's profitability and returns:

- The acquired business could under-perform relative to the Company’s expectations and the price paid for it, or not perform in accordance with the Company’s anticipated timetable.
- The acquired business could cause the Company's financial results to differ from expectations in any given fiscal period, or over the long term.
- Acquisition-related earnings charges could adversely impact operating results.
- The acquired business could place unanticipated demands on the Company's management, operational resources and financial and internal control systems.
- The Company may assume unknown liabilities, known contingent liabilities that become realized or known liabilities that prove greater than anticipated, internal control deficiencies or exposure to regulatory sanctions resulting from the activities of the acquired business. The realization of any of these liabilities or deficiencies may increase the Company's expenses, adversely affect its financial position or cause noncompliance with its financial reporting obligations.
- As a result of acquisitions, the Company has in the past recorded significant goodwill and other identifiable intangible assets on its balance sheet. If the Company is not able to realize the value of these assets, it may recognize charges relating to the impairment of these assets.

Divestitures pose the risk of retained liabilities that could adversely affect the Company's financial results.

The Company had significant divestiture activity in 2012, 2013 and 2014 in accordance with its portfolio management initiative, and it divested additional businesses in 2019 as it continues portfolio refinements to maintain portfolio discipline. The Company has retained certain liabilities directly or through indemnifications made to the buyers against known and unknown contingent liabilities such as lawsuits, tax liabilities, product liability claims and environmental matters, which could adversely affect the Company's financial results.

The Company has significant goodwill and other intangible assets, and future impairment of these assets could have a material adverse impact on the Company's financial results.

The Company has recorded significant goodwill and other identifiable intangible assets on its balance sheet as a result of acquisitions. A number of factors may result in impairments to goodwill and other intangible assets, including significant negative industry or economic trends, disruptions to our business, increased competition and significant changes in the use of the assets. Impairment charges could adversely affect the Company's financial condition or results of operations in the periods recognized.

Disruptions or volatility in global financial markets or changes in the Company's credit ratings could increase the Company's funding costs or reduce the availability of credit.

Global economic conditions may cause volatility and disruptions in the financial markets. The Company's continued ability to meet its cash requirements requires substantial liquidity and access to the financial markets. In addition, the Company's borrowing costs can be affected by short and long-term ratings assigned by independent rating agencies. If conditions in the financial markets decline or the Company's credit ratings are negatively impacted, its funding costs could be increased or the availability of credit could be diminished.

Raw material price increases and supply shortages could adversely affect results.

The supply of raw materials to the Company and to its component parts suppliers could be interrupted for a variety of reasons, including availability and pricing. Prices for raw materials necessary for production have fluctuated significantly in the past and significant increases could adversely affect the Company's results of operations and profit margins. In particular, changes in trade policies, the imposition of duties and tariffs, potential retaliatory countermeasures and severe weather events could adversely impact the price or availability of raw materials. Due to pricing pressure or other factors, the Company may not be able to pass along increased raw material and components parts prices to its customers in the form of price increases or its ability to do so could be delayed. Consequently, its results of operations and financial condition may be adversely affected.

Unfavorable tax law changes and tax authority rulings may adversely affect results.

The Company is subject to income taxes in the U.S. and in various foreign jurisdictions. Domestic and international tax liabilities are based on the income and expenses in various tax jurisdictions. The Company's effective tax rate could be adversely affected by changes in the mix of earnings among countries with differing statutory tax rates, changes in the valuation allowance of deferred tax assets or changes in tax laws. The amount of income taxes is subject to ongoing audits by U.S. federal, state and local tax authorities and by non-U.S. authorities. If these audits result in assessments different from amounts recorded, future financial results may include unfavorable tax adjustments.

In December 2017, the U.S. government enacted comprehensive tax legislation that included significant changes to the taxation of business entities. The Company's accounting for the tax effects of the Act may be subject to change due to subsequent clarification of the tax law which could adversely affect the Company's operating results or financial condition.

The Company's defined benefit pension plans are subject to financial market risks that could adversely affect its results of operations and cash flows.

The performance of financial markets and interest rates impact the Company's funding obligations under its defined benefit pension plans. Significant changes in market interest rates, decreases in the fair value of plan assets and investment losses on plan assets may increase the Company's funding obligations and adversely impact its results of operations and cash flows.

Potential adverse outcomes in legal proceedings may adversely affect results.

The Company's businesses expose it to potential toxic tort and other types of product liability claims that are inherent in the design, manufacture and sale of its products and the products of third-party vendors. The Company currently maintains insurance programs consisting of self-insurance up to certain limits and excess insurance coverage for claims over established limits. There can be no assurance that the Company will be able to obtain insurance on acceptable terms or that its insurance programs will provide adequate protection against actual losses. In addition, the Company is subject to the risk that one or more of its insurers may become insolvent and become unable to pay claims that may be made in the future. Even if it maintains adequate insurance programs, claims could have a material adverse effect on the Company's financial condition, liquidity and results of operations and on its ability to obtain suitable, adequate or cost-effective insurance in the future.

Uncertainty related to environmental regulation and industry standards, as well as physical risks of climate change, could impact the Company's results of operations and financial position.

Increased public awareness and concern regarding environmental risks, including global climate change, may result in more international, regional and/or federal requirements or industry standards to reduce or mitigate global warming and other environmental risks. These regulations or standards could mandate even more restrictive requirements, such as stricter limits on greenhouse gas emissions and production of single use plastics, than the voluntary commitments that the Company has made or require such changes on a more accelerated time frame. There continues to be a lack of consistent climate legislation, which creates economic and regulatory uncertainty. In addition, the physical risks of climate change may impact the availability and cost of materials and natural resources, sources and supply of energy, product demand and manufacturing. If environmental laws or regulations or industry standards are either changed or adopted and impose significant operational restrictions and compliance requirements upon the Company or its products, or the Company's operations are disrupted due to physical impacts of climate change, the Company’s business, capital expenditures, results of operations, financial condition and competitive position could be negatively impacted.

If the Company is unable to protect its information technology infrastructure against service interruptions, data corruption, cyber-based attacks or network security breaches, or if there is a violation of data privacy laws, there could be a negative impact on operating results or the Company may suffer financial or reputational damage.

The Company relies on information technology networks and systems, including the Internet, to process, transmit and store electronic information, and to manage or support a variety of business processes and activities, including procurement, manufacturing, distribution, invoicing and collection. These technology networks and systems may be susceptible to damage, disruptions or shutdowns due to failures during the process of upgrading or replacing software, databases or components; power outages; hardware failures; attacks by computer hackers; computer viruses; employee error or malfeasance. In addition, security breaches could result in unauthorized disclosure of confidential information or personal data belonging to our employees, partners, customers or suppliers. We are also subject to data privacy laws, including the EU General Data Protection Regulation, in the various countries in which we operate. If our information technology systems suffer severe damage, disruption, or shutdown, and business continuity plans do not effectively resolve the issues in a timely manner, or if we violate data privacy laws, there could be a negative impact on operating results or the Company may suffer financial or reputational damage.

Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements may be identified by the use of words such as "believe," "expect," "plans," "intends," "may," "strategy," "prospects," "estimate," "project," "target," "anticipate," "guidance," "forecast," and other similar words, including, without limitation, statements regarding the expected performance of acquired businesses and impact of divested businesses, the impact of tariffs and raw material cost inflation, economic and regulatory conditions in various geographic regions, the timing and amount of share repurchases, the timing and amount of benefits from the Company's enterprise initiatives, the adequacy of internally generated funds and credit facilities to service debt and finance the Company's capital allocation priorities, the sufficiency of U.S. generated cash to fund cash requirements in the U.S., the impact of the recently enacted U.S. tax legislation, the cost and availability of additional financing, the Company's portion of future benefit payments related to pension and postretirement benefits, the availability of raw materials and energy, the expiration of any one of the Company's patents, the cost of compliance with environmental regulations, the likelihood of future goodwill or intangible asset impairment charges, the impact of failure of the Company's employees to comply with applicable laws and regulations, the impact of foreign currency fluctuations, the outcome of outstanding legal proceedings, the impact of adopting new accounting pronouncements, and the estimated timing and amount related to the resolution of tax matters. These statements are subject to certain risks, uncertainties, and other factors, which could cause actual results to differ materially from those anticipated. Important risks that may influence future results include those risks described above. These risks are not all inclusive and given these and other possible risks and uncertainties, investors should not place undue reliance on forward-looking statements as a prediction of actual results.

Any forward-looking statements made by ITW speak only as of the date on which they are made. ITW is under no obligation to, and expressly disclaims any obligation to, update or alter its forward-looking statements, whether as a result of new information, subsequent events or otherwise.

ITW practices fair disclosure for all interested parties. Investors should be aware that while ITW regularly communicates with securities analysts and other investment professionals, it is against ITW's policy to disclose to them any material nonpublic information or other confidential commercial information. Investors should not assume that ITW agrees with any statement or report issued by any analyst irrespective of the content of the statement or report.

ITEM 1B. ***Unresolved Staff Comments***

None.

ITEM 2. ***Properties***

Due to the Company's decentralized operating structure and global operations, the Company operates out of a number of facilities worldwide, none of which are individually significant to the Company or its segments. As of December 31, 2019, the Company operated approximately 440 plants and office facilities, excluding regional sales offices and warehouse facilities. Approximately 280 of the facilities were located outside of the United States. Principal foreign countries include China, Germany, the United Kingdom and France.

The Company's properties are well suited for the purposes for which they were designed and are maintained in good operating condition. Production capacity, in general, currently exceeds operating levels. Capacity levels are somewhat flexible based on the number of shifts operated and on the number of overtime hours worked. The Company adds production capacity from time to time as required by increased demand. Additions to capacity can be made within a reasonable period of time due to the nature of the Company's businesses.

ITEM 3. ***Legal Proceedings***

None.

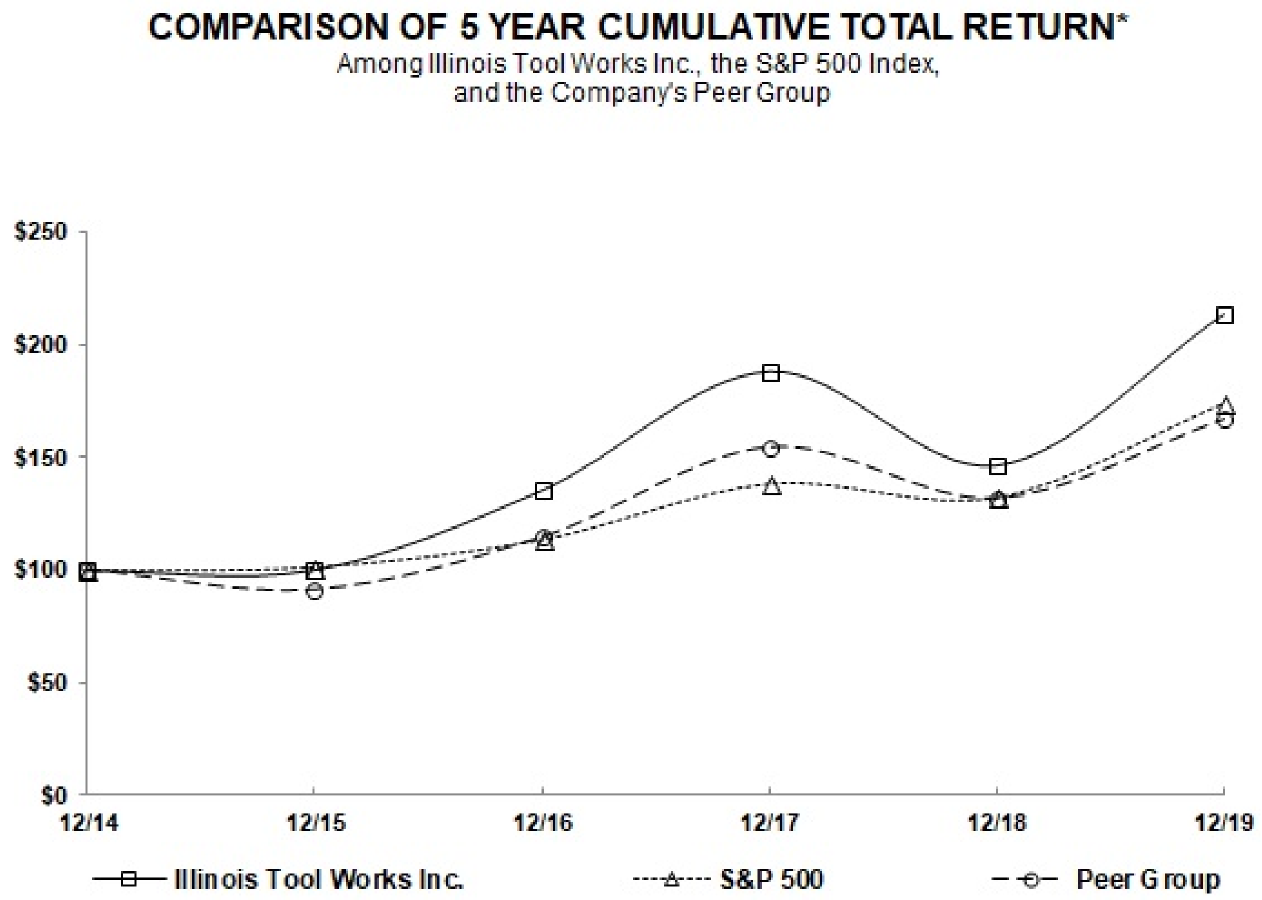
ITEM 4. ***Mine Safety Disclosures***

None.

PART II

ITEM 5. ***Market For Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities***

Common Stock Data— The Company's common stock is listed on the New York Stock Exchange. There were approximately 5,513 holders of record of common stock as of January 31, 2020. This number does not include beneficial owners of the Company's securities held in the name of nominees.



*Assumes $100 invested on 12/31/14 in stock or index, including reinvestment of dividends. Fiscal years ended December 31.

The 2019 peer group consists of the following 17 public companies, consistent with the peer group included in the Company's Proxy statement:

3M Company	Emerson Electric Co.	Parker-Hannifin Corporation
Caterpillar Inc.	Fortive Corporation	PPG Industries, Inc.
Cummins Inc.	General Dynamics Corporation	Raytheon Company
Deere & Company	Honeywell International Inc.	Rockwell Automation, Inc.
Dover Corporation	Ingersoll-Rand plc	Stanley Black & Decker, Inc.
Eaton Corporation plc	Johnson Controls, Inc.	

The Compensation Committee of the Board of Directors of the Company reviews the peer group annually and from time to time it changes the composition of the Company's peer group where changes are appropriate. Although Fortive Corporation was added to the Company's peer group in 2017, it was excluded from the five year cumulative total return as there was insufficient historical data due to its spin-off from Danaher Corporation in 2016.

Repurchases of Common Stock— On February 13, 2015, the Company's Board of Directors authorized a stock repurchase program which provided for the repurchase of up to $6.0 billion of the Company's common stock over an open-ended period of time (the "2015 Program"). The 2015 Program was completed in the second quarter of 2019.

On August 3, 2018, the Company's Board of Directors authorized a new stock repurchase program which provides for the repurchase of up to an additional $3.0 billion of the Company's common stock over an open-ended period of time (the "2018 Program"). As of December 31, 2019, there were approximately $1.9 billion of authorized repurchases remaining under the 2018 program.

Share repurchase activity under the Company's share repurchase program for the fourth quarter of 2019 was as follows:

In millions except per share amounts Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Maximum Value of Shares That May Yet Be Purchased Under Programs
October 2019	0.1	$ 167.78	0.1	$ 2,301
November 2019	0.3	$ 173.98	0.3	$ 2,256
December 2019	1.8	$ 175.67	1.8	$ 1,946
Total	2.2		2.2	

ITEM 6. *Selected Financial Data*

In millions except per share amounts	2019	2018	2017	2016	2015
Operating revenue	$ 14,109	$ 14,768	$ 14,314	$ 13,599	$ 13,405
Income from continuing operations	2,521	2,563	1,687	2,035	1,899
Income per share from continuing operations:					
Basic	7.78	7.65	4.90	5.73	5.16
Diluted	7.74	7.60	4.86	5.70	5.13
Total assets at year-end	15,068	14,870	16,780	15,201	15,729
Long-term debt at year-end	7,754	6,029	7,478	7,177	6,896
Cash dividends declared per common share	4.14	3.56	2.86	2.40	2.07

In 2017, the Company recorded a one-time additional income tax expense of $658 million, or $1.90 per diluted share, related to the enactment of the United States "Tax Cuts and Jobs Act." Refer to Note 6. Income Taxes in Item 8. Financial Statements and Supplementary Data for further information.

Certain reclassifications of prior year data have been made to conform to current year reporting, including the adoption of new accounting guidance as discussed below.

In March 2016, the FASB issued authoritative guidance that included several changes to simplify the accounting for stock-based compensation, including the accounting for income taxes, forfeitures, statutory tax withholding requirements and classification of tax benefits in the statement of cash flows. Among the more significant changes, the new guidance requires that the income tax effects associated with the settlement of stock-based awards after adoption of the guidance be recognized through income tax expense rather than directly in equity. Additionally, the income tax effects related to excess tax benefits should be presented within operating cash flows in the statement of cash flows rather than as a financing activity. Excess tax benefits recognized in equity under the prior guidance were $29 million and $20 million for the years ended December 31, 2016 and 2015, respectively. The Company adopted the new guidance effective January 1, 2017 and applied the new guidance prospectively. Excess tax benefits of $28 million, $10 million and $50 million were included in Income taxes in the statement of income for the years ended December 31, 2019, 2018 and 2017, respectively. The expected effect on income tax expense or net cash provided from operating activities related to future stock-based award settlements will vary each period and will depend on inputs such as the stock price at the time of settlement and the number of awards settled in the period presented.

Additional information on the comparability of results is included in Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

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

INTRODUCTION

Illinois Tool Works Inc. (the "Company" or "ITW") is a global manufacturer of a diversified range of industrial products and equipment with 84 divisions in 53 countries. As of December 31, 2019, the Company employed approximately 45,000 people.

The Company's operations are organized and managed based on similar product offerings and end markets, and are reported to senior management as the following seven segments: Automotive OEM; Food Equipment; Test & Measurement and Electronics; Welding; Polymers & Fluids; Construction Products; and Specialty Products.

Due to the large number of diverse businesses and the Company's decentralized operating structure, the Company does not require its businesses to provide detailed information on operating results. Instead, the Company's corporate management collects data on several key measurements: operating revenue, operating income, operating margin, overhead costs, number of months on hand in inventory, days sales outstanding in accounts receivable, past due receivables and return on invested capital. These key measures are monitored by management and significant changes in operating results versus current trends in end markets and variances from forecasts are discussed with operating unit management.

THE ITW BUSINESS MODEL

The powerful and highly differentiated ITW Business Model is the Company’s core source of value creation. The ITW Business Model is the Company’s competitive advantage and defines how ITW creates value for its shareholders. It is comprised of three unique elements:

- ITW’s **80/20 Front-to-Back** process is the operating system that is applied in every ITW business. Initially introduced as a manufacturing efficiency tool in the 1980s, ITW has continually refined, improved and expanded 80/20 into a proprietary, holistic business management process that generates significant value for the Company and its customers. Through the application of data driven insights generated by 80/20 practice, ITW focuses on its largest and best opportunities (the “80”) and eliminates cost, complexity and distractions associated with the less profitable opportunities (the “20”). 80/20 enables ITW businesses to consistently achieve world-class operational excellence in product availability, quality, and innovation, while generating superior financial performance;

- **Customer-back Innovation** has fueled decades of profitable growth at ITW. The Company’s unique innovation approach is built on insight gathered from the 80/20 Front-to-Back process. Working from the customer back, ITW businesses position themselves as the go-to problem solver for their “80” customers. ITW’s innovation efforts are focused on understanding customer needs, particularly those in “80” markets with solid long-term growth fundamentals, and creating unique solutions to address those needs. These customer insights and learnings drive innovation at ITW and have contributed to a portfolio of approximately 18,000 granted and pending patents;

- ITW’s **Decentralized, Entrepreneurial Culture** enables ITW businesses to be fast, focused, and responsive. ITW businesses have significant flexibility within the framework of the ITW Business Model to customize their approach in order to best serve their specific customers' needs. ITW colleagues recognize their unique responsibilities to execute the Company's strategy and values. As a result, the Company maintains a focused and simple organizational structure that, combined with outstanding execution, delivers best-in-class services and solutions adapted to each business' customers and end markets.

ENTERPRISE STRATEGY

In late 2012, ITW began its strategic framework transitioning the Company on its current path to fully leverage the compelling performance potential of the ITW Business Model. The Company undertook a complete review of its performance, focusing on its businesses delivering consistent above-market growth with best-in-class margins and returns, and developing a strategy to replicate that performance across its operations.

ITW determined that solid and consistent above-market organic growth is the core growth engine to deliver world-class financial performance and compelling long-term returns for its shareholders. To shift its primary growth engine to organic, the Company began executing a multi-step approach.

- The first step was to narrow the focus and improve the quality of ITW's business portfolio. As part of the Portfolio Management initiative, ITW exited businesses that were operating in commoditized market spaces and prioritized sustainable differentiation as a must-have requirement for all ITW businesses. This process included both divesting entire businesses and exiting commoditized product lines and customers inside otherwise highly differentiated ITW divisions.

  As a result of this work, ITW's business portfolio now has significantly higher organic growth potential. ITW segments and divisions now possess attractive and differentiated product lines and end markets as they continue to improve operating margins and generate price/cost increases. The Company achieved this through product line simplification, or eliminating the complexity and overhead costs associated with smaller product lines and customers, while supporting and growing the businesses' largest / most profitable customers and product lines.

- Step two, Business Structure Simplification, was implemented to simplify and scale up ITW’s operating structure to support increased engineering, marketing, and sales resources, and improve global reach and competitiveness, all of which were critical to driving accelerated organic growth. ITW now has 84 scaled-up divisions with significantly enhanced focus on growth investments, core customers and products, and customer-back innovation.

- The Strategic Sourcing initiative established sourcing as a core strategic and operational capability at ITW, delivering an average of one percent reduction in spend each year from 2013 through 2019 and continues to be a key contributor to the Company's ongoing enterprise strategy.

- With the initial portfolio realignment and scale-up work largely complete, the Company shifted its focus to preparing for and accelerating organic growth, reapplying the 80/20 Front-to-Back process to optimize its newly scaled-up divisions for growth, first, to build a foundation of operational excellence, and second, to identify the best opportunities to drive organic growth.

ITW has clearly demonstrated superior 80/20 management, resulting in meaningful incremental improvement in margins and returns as evidenced by the Company’s operating margin and after-tax return on invested capital. At the same time, these 80/20 initiatives can also result in restructuring initiatives that reduce costs and improve profitability and returns.

PATH TO FULL POTENTIAL - FINISHING THE JOB

Since the launch of the enterprise strategy, the Company has made considerable progress to position itself to reach full potential. The ITW Business Model and unique set of capabilities are a source of strong and enduring competitive advantage, but for the Company to truly finish the job and reach its full potential, every one of its divisions must also be operating at its full potential. To do so, the Company remains focused on its core principles to position ITW to perform to its full potential:

- Portfolio discipline
- 80/20 Front-to-Back practice excellence
- Full-potential organic growth

Portfolio Discipline

The Company only operates in industries where it can generate significant, long-term competitive advantage from the ITW Business Model. ITW businesses have the right “raw material” in terms of market and business attributes that best fit the ITW Business Model and have significant potential to drive above-market organic growth over the long-term.

The Company focuses on high-quality businesses, ensuring it operates in markets with positive long-term macro fundamentals and with customers that have critical needs and value ITW's differentiated products, services and solutions. ITW’s portfolio operates in highly diverse end markets and geographies which makes the Company more resilient in the face of uncertain or volatile market environments.

As part of its agenda to finish the job, the Company routinely evaluates its portfolio to ensure it delivers sustainable differentiation and drives consistent long-term performance. This includes both implementing portfolio refinements and assessing selective high-quality acquisitions to supplement ITW’s long-term growth potential.

The Company previously communicated its intent to explore options, including potential divestitures, for certain businesses with revenues totaling up to $1 billion. In the fourth quarter of 2019, the Company completed the divestitures of three businesses and continues to evaluate options for certain other businesses. The Company expects any earnings per share dilution from divestitures would be offset by incremental share repurchases. Refer to Note 2. Divestitures in Item 8. Financial Statements and Supplementary Data for more information regarding divestitures.

80/20 Front-to-Back Practice Excellence

The 80/20 Front-to-Back process is a rigorous, iterative and highly data-driven approach to identify where the Company has true differentiation and the ability to drive sustainable, high-quality organic growth. The Company simplifies and eliminates complexity and redesigns every aspect of its business to ensure focused execution on key opportunities, markets, customers, and products.

ITW will continue its efforts to finish the job and drive 80/20 Front-to-Back practice excellence in every division in the Company, every day. Driving strong operational excellence in the quality of 80/20 Front-to-Back practice across the Company, division by division, will produce further customer-facing performance improvement in a number of the Company's divisions and additional structural margin expansion at the enterprise level.

Full-potential Organic Growth

Reaching full potential means that every division is positioned for sustainable, high-quality organic growth. The Company has clearly defined action plans aimed at leveraging the performance power of the ITW Business Model to achieve full-potential organic growth in every division, with specific focus on:

- "80” focused Market Penetration - fully leveraging the considerable growth potential that resides in the Company's largest and most differentiated product offerings and customer relationships
- Customer-Back Innovation - strengthening the Company's commitment to serial innovation and delivering a continuous flow of differentiated new products to its key customers
- Strategic Sales Excellence - deploying a high-performance sales function in every division

As the Company continues to make progress toward its full potential, the Company will explore opportunities to reinforce or further expand the long-term organic growth potential of ITW through the addition of selective high-quality acquisitions.

TERMS USED BY ITW

Management uses the following terms to describe the financial results of operations of the Company:

- **Organic business** - acquired businesses that have been included in the Company's results of operations for more than 12 months on a constant currency basis.
- **Operating leverage** - the estimated effect of the organic revenue volume changes on organic operating income, assuming variable margins remain the same as the prior period.
- **Price/cost** - represents the estimated net impact of increases or decreases in the cost of materials used in the Company's products versus changes in the selling price to the Company's customers.
- **Product line simplification (PLS)** - focuses businesses on eliminating the complexity and overhead costs associated with smaller product lines and customers, and focuses businesses on supporting and growing their largest customers and product lines; in the short-term, PLS may result in a decrease in revenue and overhead costs while improving operating margin. In the long-term, PLS is expected to result in growth in revenue, profitability, and returns.

Unless otherwise stated, the changes in financial results in the consolidated results of operations and the results of operations by segment represent the current year period versus the comparable period in the prior year.

CONSOLIDATED RESULTS OF OPERATIONS

The Company delivered solid financial results in 2019 despite a contracting industrial demand environment. With the Company's diversified high-quality business portfolio, highly differentiated ITW Business Model and continued strong execution on enterprise initiatives throughout the year, the Company grew diluted earnings per share and returned approximately $2.8 billion to shareholders in the form of dividends and share repurchases in 2019. Additionally, all segments had operating margin at or above 21.5% for 2019.

The Company does not believe that tariffs imposed in the past year have had a material impact on its operating results. The Company will continue to evaluate the impact of enacted and proposed tariffs on its businesses, as well as pricing actions to mitigate the impact of any raw material cost increases resulting from these tariffs.

In early 2020, an outbreak of the coronavirus occurred in China and other jurisdictions. The extent of the outbreak and its impact on the markets served by the Company and on its operations is uncertain. A prolonged outbreak could interrupt the operations of the Company and its customers and suppliers.

The Company presents certain financial measures in fiscal year 2017 excluding the $658 million tax charge related to the "Tax Cuts and Jobs Act" and the benefit of a favorable $95 million legal settlement. These non-GAAP measures are consistent with the way management analyzes and assesses the Company's operating performance. The Company believes these non-GAAP measures enhance investors' understanding of the Company's underlying financial performance, as well as their ability to compare the Company's financial results and overall performance to that of its peers.

The Company’s consolidated results of operations for 2019, 2018 and 2017 were as follows:

2019 compared to 2018

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2019	2018	Inc (Dec)	Organic	Acquisition/ Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 14,109	$ 14,768	(4.5)%	(1.9)%	(0.3)%	— %	(2.3)%	(4.5)%
Operating income	$ 3,402	$ 3,584	(5.1)%	(1.3)%	(0.1)%	(1.4)%	(2.3)%	(5.1)%
Operating margin %	24.1%	24.3%	(20) bps	10 bps	—	(30) bps	—	(20) bps

- Operating revenue declined due to the unfavorable effect of foreign currency translation, lower organic revenue and divestitures.
- Organic revenue decreased 1.9% primarily driven by a decline in the Automotive OEM, Specialty Products, Welding and Construction Products segments. Product line simplification activities reduced organic revenue by 60 basis points.
    - North American organic revenue decreased 1.8% as a decline in the Automotive OEM, Specialty Products, Welding and Polymers & Fluids segments was partially offset by growth in the Food Equipment, Test & Measurement and Electronics and Construction Products segments.
    - Europe, Middle East and Africa organic revenue decreased 2.2% as five segments declined, partially offset by growth in the Food Equipment and Construction Products segments.
    - Asia Pacific organic revenue declined 1.6% as a decrease in the Construction Products, Automotive OEM, Food Equipment and Test & Measurement and Electronics segments was partially offset by an increase in the Welding, Polymers & Fluids and Specialty Products segments.
- Operating income of $3.4 billion decreased 5.1% primarily due to unfavorable foreign currency translation, higher restructuring expenses and lower organic revenue.
- Operating margin of 24.1% decreased 20 basis points. Excluding the unfavorable impact of higher restructuring expenses of 30 basis points, operating margin increased 10 basis points primarily due to benefits from the Company's enterprise initiatives that contributed 120 basis points and favorable price/cost of 10 basis points, partially offset by negative operating leverage of 50 basis points, product mix and higher employee-related expenses.
- The effective tax rate for 2019 was 23.3% compared to 24.5% in 2018. The 2019 and 2018 effective tax rates benefited from the lower U.S. corporate federal tax rate and discrete items. The 2019 effective tax rate benefited from a discrete tax benefit of $21 million in the third quarter for the U.S. federal provision to return adjustment resulting primarily from changes in estimates related to the "Tax Cuts and Jobs Act." The 2018 effective tax rate benefited from a discrete tax benefit of $37 million in the third quarter related to the release of a valuation allowance against the deferred tax assets of a non-U.S. subsidiary, which was partially offset by a discrete tax charge of $22 million in the third quarter related to foreign tax credits. Additionally, the effective tax rate for 2019 and 2018 included $28 million and $10 million, respectively, related to excess tax benefits from stock-based compensation. Refer to Note 6. Income Taxes in Item 8. Financial Statements and Supplementary Data for further information.
- Diluted earnings per share (EPS) of $7.74, an increase of 1.8%, included a $0.09 gain in 2019 from the disposal of businesses.
- Free cash flow was $2.7 billion for 2019. Refer to the Cash Flow section of Liquidity and Capital Resources for a reconciliation of this non-GAAP measure.

- The Company repurchased approximately 9.8 million shares of its common stock in 2019 for approximately $1.5 billion.
- The Company increased the quarterly dividend by 7.0% in 2019. Total cash dividends of approximately $1.3 billion were paid in 2019.
- Adjusted after-tax return on average invested capital was 28.7% for 2019. Refer to the Adjusted After-Tax Return on Average Invested Capital section of Liquidity and Capital Resources for a reconciliation of this non-GAAP measure.

2018 compared to 2017

Dollars in millions	For the Years Ended December 31, 2018	For the Years Ended December 31, 2017	Inc (Dec)	Components of Increase (Decrease): Organic	Acquisition/ Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 14,768	$ 14,314	3.2%	2.2%	(0.1)%	—%	1.1%	3.2%
Operating income	$ 3,584	$ 3,485	2.8%	1.2%	— %	0.5%	1.1%	2.8%
Operating margin %	24.3%	24.3%	—	(20) bps	—	10 bps	10 bps	—

- Operating revenue increased due to an increase in organic revenue and the favorable effect of foreign currency translation.
- Organic revenue grew 2.2% primarily due to penetration gains, higher end market demand and product innovation. Product line simplification activities reduced organic revenue growth by 70 basis points.
    - North American organic revenue increased 4.0% as all seven segments had revenue growth.
    - Asia Pacific organic revenue grew 0.4% primarily driven by growth in the Welding, Test & Measurement and Electronics, Food Equipment and Polymers & Fluids segments, partially offset by a decline in the Specialty Products, Automotive OEM and Construction Products segments.
    - Europe, Middle East and Africa organic revenue decreased 0.2% primarily driven by the Automotive OEM, Specialty Products and Polymers & Fluids segments.
- In the second quarter of 2017, the Company entered into a $95 million confidential settlement agreement to resolve a litigation matter. Based on the terms of the agreement, the Company received the settlement within 120 days of the execution of the agreement. The receipt of the settlement resulted in a favorable pre-tax impact of $15 million in the second quarter of 2017 and $80 million in the third quarter of 2017, which was included in operating income.
- Operating income of $3.6 billion increased 2.8%. Excluding the favorable impact of the 2017 confidential legal settlement, operating income would have increased 5.7%.
- Operating margin of 24.3% was flat with the prior year. Excluding the 60 basis points of favorability from the 2017 confidential legal settlement, operating margin increased 60 basis points primarily due to the benefits of the Company's enterprise initiatives that contributed 110 basis points and positive operating leverage of 50 basis points, partially offset by unfavorable price/cost of 50 basis points and higher freight and employee-related expenses.
- The effective tax rate was 24.5% and 48.4% for 2018 and 2017, respectively. Included in the effective tax rate for 2017 was a one-time additional income tax expense of $658 million related to the enactment of the "Tax Cuts and Jobs Act" in the United States. Excluding the tax charge of $658 million, the 2017 effective tax rate would have been 28.3%. Refer to Note 6. Income Taxes in Item 8. Financial Statements and Supplementary Data for further information.
- Diluted earnings per share (EPS) of $7.60 increased 56.4%. Excluding the 2017 unfavorable impact of $1.90 for the previously discussed one-time tax charge and the favorable impact of $0.17 for the confidential legal settlement, EPS increased 15.3%.
- Free cash flow was $2.4 billion for 2018. Refer to the Cash Flow section of Liquidity and Capital Resources for a reconciliation of this non-GAAP measure.
- The Company repurchased approximately 13.9 million shares of its common stock in 2018 for approximately $2.0 billion.
- The Company increased the quarterly dividend by 28.2% in 2018. Total cash dividends of approximately $1.1 billion were paid in 2018.
- Adjusted after-tax return on average invested capital was 28.2%, an increase of 390 basis points, primarily due to the new U.S. tax rules and regulations. Refer to the Adjusted After-Tax Return on Average Invested Capital section of Liquidity and Capital Resources for a reconciliation of this non-GAAP measure.

RESULTS OF OPERATIONS BY SEGMENT

The reconciliation of segment operating revenue and operating income to total operating revenue and operating income is as follows:

	Operating Revenue		
In millions	**2019**	**2018**	**2017**
Automotive OEM	$ 3,063	$ 3,338	$ 3,271
Food Equipment	2,188	2,214	2,123
Test & Measurement and Electronics	2,121	2,171	2,069
Welding	1,638	1,691	1,538
Polymers & Fluids	1,669	1,724	1,724
Construction Products	1,625	1,700	1,672
Specialty Products	1,825	1,951	1,938
Intersegment revenue	(20)	(21)	(21)
Total	$ 14,109	$ 14,768	$ 14,314

	Operating Income		
In millions	**2019**	**2018**	**2017**
Automotive OEM	$ 659	$ 751	$ 747
Food Equipment	578	572	556
Test & Measurement and Electronics	542	523	464
Welding	453	474	415
Polymers & Fluids	381	369	357
Construction Products	383	414	399
Specialty Products	472	522	527
Total Segments	3,468	3,625	3,465
Unallocated	(66)	(41)	20
Total	$ 3,402	$ 3,584	$ 3,485

Segments are allocated a fixed overhead charge based on the segment's revenue. Expenses not charged to the segments are reported separately as Unallocated. Because the Unallocated category includes a variety of items, it is subject to fluctuations on a quarterly and annual basis. Unallocated in 2017 includes the favorable impact from the previously discussed confidential legal settlement.

AUTOMOTIVE OEM

This segment is a global, niche supplier to top tier OEMs, providing unique innovation to address pain points for sophisticated customers with complex problems. Businesses in this segment produce components and fasteners for automotive-related applications. This segment primarily serves the automotive original equipment manufacturers and tiers market. Products in this segment include:

- plastic and metal components, fasteners and assemblies for automobiles, light trucks and other industrial uses.

The results of operations for the Automotive OEM segment for 2019, 2018 and 2017 were as follows:

2019 compared to 2018

Dollars in millions	For the Years Ended December 31, 2019	For the Years Ended December 31, 2018	Inc (Dec)	Components of Increase (Decrease): Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 3,063	$ 3,338	(8.2)%	(5.4)%	—%	— %	(2.8)%	(8.2)%
Operating income	$ 659	$ 751	(12.2)%	(7.0)%	—%	(2.6)%	(2.6)%	(12.2)%
Operating margin %	21.5%	22.5%	(100) bps	(40) bps	—	(60) bps	—	(100) bps

- Operating revenue declined due to lower organic revenue and the unfavorable effect of foreign currency translation.
- Organic revenue declined 5.4% versus worldwide auto builds which decreased 6%. Auto builds for North America, Europe and China, where the Company has a higher concentration of revenue as compared to other geographic regions, declined 6%. Product line simplification activities reduced organic revenue by 120 basis points. Additionally, organic revenue was negatively impacted by approximately 100 basis points due to unexpected customer shutdowns in North America in the second half of 2019.
    - North American organic revenue decreased 7.8% compared to North American auto builds which were down 4% due to customer mix. Auto builds for the Detroit 3, where the Company has higher content, decreased 8%. Additionally, 2019 was negatively impacted by unexpected customer shutdowns.
    - European organic revenue declined 4.5% compared to European auto builds which declined 4% in 2019 due to customer mix.
    - Asia Pacific organic revenue declined 2.2% in 2019. China organic revenue declined 1.0% versus Chinese auto builds which declined 8% in 2019.
- Operating margin was 21.5% in 2019. The decrease of 100 basis points was primarily due to negative operating leverage of 90 basis points, unfavorable price/cost of 60 basis points, higher restructuring expenses and product mix, partially offset by benefits from the Company's enterprise initiatives.

2018 compared to 2017

Dollars in millions	For the Years Ended December 31, 2018	For the Years Ended December 31, 2017	Inc (Dec)	Components of Increase (Decrease): Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 3,338	$ 3,271	2.0%	— %	—%	—%	2.0%	2.0%
Operating income	$ 751	$ 747	0.5%	(2.0)%	—%	0.6%	1.9%	0.5%
Operating margin %	22.5%	22.8%	(30) bps	(40) bps	—	10 bps	—	(30) bps

- Operating revenue increased due to the favorable effect of foreign currency translation.
- Organic revenue was flat compared to worldwide auto builds which declined 1%. Product line simplification activities reduced organic revenue growth by 120 basis points.
    - North American organic revenue increased 3.0% compared to North American auto builds which declined 1%. Auto builds for the Detroit 3, where the Company has higher content, were flat.
    - European organic revenue declined 2.7% compared to European auto builds which declined 1% due to customer mix. Organic revenue was negatively impacted by the new emissions testing requirements in Europe which disrupted auto production in the second half of 2018.
    - Asia Pacific organic revenue decreased 0.7%. China organic revenue grew 2.6% versus Chinese auto builds which declined 4%, as auto production in China softened during the second half of 2018.
- Operating margin was 22.5% in 2018. The decrease of 30 basis points was primarily due to unfavorable price/cost of 130 basis points, partially offset by benefits from the Company's enterprise initiatives.

FOOD EQUIPMENT

This segment is a highly focused and branded industry leader in commercial food equipment differentiated by innovation and integrated service offerings. This segment primarily serves the food service, food institutional/restaurant and food retail markets. Products in this segment include:

- warewashing equipment;
- cooking equipment, including ovens, ranges and broilers;
- refrigeration equipment, including refrigerators, freezers and prep tables;
- food processing equipment, including slicers, mixers and scales;
- kitchen exhaust, ventilation and pollution control systems; and
- food equipment service, maintenance and repair.

The results of operations for the Food Equipment segment for 2019, 2018 and 2017 were as follows:

2019 compared to 2018

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2019	2018	Inc (Dec)	Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 2,188	$ 2,214	(1.2)%	1.1%	—%	— %	(2.3)%	(1.2)%
Operating income	$ 578	$ 572	1.1 %	4.5%	—%	(1.2)%	(2.2)%	1.1 %
Operating margin %	26.4%	25.8%	60 bps	90 bps	—	(30) bps	—	60 bps

- Operating revenue declined due to the unfavorable effect of foreign currency translation, partially offset by higher organic revenue.
- Organic revenue increased 1.1% as equipment organic revenue decreased 0.2% and service organic revenue increased 3.5%.
  - North American organic revenue grew 1.1%. Equipment organic revenue declined 0.4% primarily driven by lower demand in the restaurant and institutional end markets, partially offset by higher demand in food retail. Service organic revenue increased 3.6%.
  - International organic revenue grew 1.1% as equipment organic revenue increased 0.2% primarily due to higher demand in the European warewash, cooking and retail end markets, partially offset by lower demand in Asia. Service organic revenue increased 3.5%.
- Operating margin of 26.4% in 2019 increased 60 basis points primarily driven by benefits from the Company's enterprise initiatives, favorable price/cost of 40 basis points and positive operating leverage of 30 basis points, partially offset by product mix, higher employee-related expenses and higher restructuring expenses.

2018 compared to 2017

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2018	2017	Inc (Dec)	Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 2,214	$ 2,123	4.3%	2.8%	—%	—%	1.5%	4.3%
Operating income	$ 572	$ 556	2.9%	1.0%	—%	0.3%	1.6%	2.9%
Operating margin %	25.8%	26.2%	(40) bps	(50) bps	—	10 bps	—	(40) bps

- Operating revenue increased due to higher organic revenue and the favorable effect of foreign currency translation.
- Organic revenue increased 2.8% as equipment and service organic revenue increased 3.2% and 2.1%, respectively.
  - North American organic revenue increased 3.5%. Equipment organic revenue grew 4.6% as higher end market demand in cooking, refrigeration and warewash was offset by lower end market demand in food retail. Service organic revenue grew 1.9%.

    ◦ International organic revenue increased 1.9%. Equipment organic revenue grew 1.8% primarily due to higher demand in the European warewash and cooking end markets, partially offset by lower end market demand in refrigeration. Service organic revenue increased 2.4%.
- Operating margin of 25.8% in 2018 declined 40 basis points primarily due to the unfavorable impact of product mix and higher employee-related expenses, partially offset by benefits from the Company's enterprise initiatives and positive operating leverage of 60 basis points.

TEST & MEASUREMENT AND ELECTRONICS

This segment is a branded and innovative producer of test and measurement and electronic manufacturing and maintenance, repair, and operations, or "MRO" solutions that improve efficiency and quality for customers in diverse end markets. Businesses in this segment produce equipment, consumables, and related software for testing and measuring of materials and structures, as well as equipment and consumables used in the production of electronic subassemblies and microelectronics. This segment primarily serves the electronics, general industrial, automotive original equipment manufacturers and tiers, industrial capital goods, energy and consumer durables markets. Products in this segment include:

- equipment, consumables, and related software for testing and measuring of materials, structures, gases and fluids;
- electronic assembly equipment;
- electronic components and component packaging;
- static control equipment and consumables used for contamination control in clean room environments; and
- pressure sensitive adhesives and components for electronics, medical, transportation and telecommunications applications.

The results of operations for the Test & Measurement and Electronics segment for 2019, 2018 and 2017 were as follows:

2019 compared to 2018

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2019	2018	Inc (Dec)	Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 2,121	$ 2,171	(2.3)%	(0.3)%	(0.2)%	— %	(1.8)%	(2.3)%
Operating income	$ 542	$ 523	3.7 %	5.7 %	— %	(0.2)%	(1.8)%	3.7 %
Operating margin %	25.6%	24.1%	150 bps	140 bps	10 bps	—	—	150 bps

- Operating revenue declined due to the unfavorable effect of foreign currency translation, lower organic revenue and a divestiture.
- Operating revenue for 2019 included $58 million related to the business divested in 2019.
- Organic revenue decreased 0.3% in 2019.
    ◦ Organic revenue for the test and measurement businesses decreased 0.8% primarily driven by lower semi-conductor end market demand in North America. Excluding semi-conductor, the test and measurement businesses increased 3.5%. Instron, where demand is more closely tied to the capital spending environment, had organic revenue growth of 6.4%.
    ◦ Electronics organic revenue grew 0.4%. The other electronics businesses, which include the contamination control, static control and pressure sensitive adhesives businesses, grew 1.5% primarily due to growth in North America and Asia, partially offset by a decline in Europe. The electronics assembly businesses decreased 1.4% primarily due to lower demand in Asia.
- Operating margin of 25.6% in 2019 increased 150 basis points primarily driven by benefits from the Company's enterprise initiatives, lower intangible asset amortization expense and favorable price/cost of 50 basis points.

2018 compared to 2017

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2018	2017	Inc (Dec)	Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 2,171	$ 2,069	4.9%	3.5%	—%	—%	1.4%	4.9%
Operating income	$ 523	$ 464	12.7%	11.3%	—%	—%	1.4%	12.7%
Operating margin %	24.1%	22.4%	170 bps	170 bps	—	—	—	170 bps

- Operating revenue increased due to higher organic revenue and the favorable effect of foreign currency translation.
- Organic revenue increased 3.5% in 2018.
  - Organic revenue for the test and measurement businesses increased 5.5% with growth in all major regions primarily due to higher semi-conductor end market demand. Instron, where demand is more closely tied to the capital spending environment, had organic revenue growth of 7.1%.
  - Electronics organic revenue grew 1.2%. The electronics assembly businesses declined 4.3% due to lower demand across North America and Europe. The other electronics businesses, which include the contamination control, static control and pressure sensitive adhesives businesses, grew 5.0% primarily due to higher semi-conductor end market demand in North America.
- Operating margin was 24.1% in 2018. The increase of 170 basis points was primarily driven by positive operating leverage of 90 basis points and benefits from the Company's enterprise initiatives.

WELDING

This segment is a branded value-added equipment and specialty consumable manufacturer with innovative and leading technology. Businesses in this segment produce arc welding equipment, consumables and accessories for a wide array of industrial and commercial applications. This segment primarily serves the general industrial market, which includes fabrication, shipbuilding and other general industrial markets, and energy, construction, MRO, automotive original equipment manufacturers and tiers, and industrial capital goods markets. Products in this segment include:

- arc welding equipment; and
- metal arc welding consumables and related accessories.

The results of operations for the Welding segment for 2019, 2018 and 2017 were as follows:

2019 compared to 2018

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2019	2018	Inc (Dec)	Organic	Acquisition/ Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 1,638	$ 1,691	(3.1)%	(1.2)%	(1.1)%	— %	(0.8)%	(3.1)%
Operating income	$ 453	$ 474	(4.4)%	(2.1)%	(0.4)%	(1.7)%	(0.2)%	(4.4)%
Operating margin %	27.7%	28.0%	(30) bps	(20) bps	20 bps	(50) bps	20 bps	(30) bps

- Operating revenue decreased due to lower organic revenue, the impact of divestiture activity and the unfavorable effect of foreign currency translation.
- Operating revenue for 2019 included $62 million related to the business divested in 2019.
- Organic revenue decreased 1.2% as equipment declined 2.6%, partially offset by growth in consumables of 0.8%.
  - North American organic revenue declined 1.1% as a decrease in the industrial end markets was partially offset by growth in the commercial and oil and gas end markets.
  - International organic revenue decreased 1.6% primarily due to a decline in Europe, partially offset by higher demand in Asia in the oil and gas end markets.

- Operating margin of 27.7% decreased 30 basis points compared to the prior year primarily driven by higher restructuring expenses of 50 basis points, product mix, negative operating leverage of 20 basis points and higher employee-related expenses, partially offset by benefits from the Company's enterprise initiatives and favorable price/cost of 70 basis points.

2018 compared to 2017

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2018	2017	Inc (Dec)	Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 1,691	$ 1,538	9.9%	9.7%	—%	—%	0.2%	9.9%
Operating income	$ 474	$ 415	14.3%	13.1%	—%	1.0%	0.2%	14.3%
Operating margin %	28.0%	27.0%	100 bps	80 bps	—	20 bps	—	100 bps

- Operating revenue increased primarily due to higher organic revenue.
- Organic revenue grew 9.7% driven by growth in equipment of 11.0% and consumables of 7.9%. Organic revenue grew primarily due to increased demand in the industrial end markets related to heavy equipment for agriculture, infrastructure and mining, in the commercial end markets related to construction, light fabrication and farm and ranch customers, and in the oil and gas end markets.
    - North American organic revenue increased 10.6% primarily due to 14.7% and 5.8% growth in the industrial and commercial end markets, respectively.
    - International organic revenue increased 5.7% primarily due to higher demand in the oil and gas end markets.
- Operating margin was 28.0% in 2018. The increase of 100 basis points was primarily due to positive operating leverage of 150 basis points and benefits from the Company's enterprise initiatives, partially offset by higher freight and employee-related expenses.

POLYMERS & FLUIDS

This segment is a branded supplier to niche markets that require value-added, differentiated products. Businesses in this segment produce engineered adhesives, sealants, lubrication and cutting fluids, and fluids and polymers for auto aftermarket maintenance and appearance. This segment primarily serves the automotive aftermarket, general industrial, MRO and construction markets. Products in this segment include:

- adhesives for industrial, construction and consumer purposes;
- chemical fluids which clean or add lubrication to machines;
- epoxy and resin-based coating products for industrial applications;
- hand wipes and cleaners for industrial applications;
- fluids, polymers and other supplies for auto aftermarket maintenance and appearance;
- fillers and putties for auto body repair; and
- polyester coatings and patch and repair products for the marine industry.

The results of operations for the Polymers & Fluids segment for 2019, 2018 and 2017 were as follows:

2019 compared to 2018

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2019	2018	Inc (Dec)	Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 1,669	$ 1,724	(3.2)%	—%	(0.4)%	— %	(2.8)%	(3.2)%
Operating income	$ 381	$ 369	3.1 %	7.9%	(0.1)%	(1.5)%	(3.2)%	3.1 %
Operating margin %	22.8%	21.4%	140 bps	170 bps	—	(30) bps	—	140 bps

- Operating revenue decreased primarily due to the unfavorable effect of foreign currency translation.

- Organic revenue was flat as growth in the polymers businesses was offset by declines in the automotive aftermarket and fluids businesses.
  - Organic revenue for the automotive aftermarket businesses declined 0.7% primarily due to lower demand in the tire repair businesses in North America and the additives businesses in Europe, partially offset by stronger demand in the car care businesses in North America.
  - Organic revenue for the polymers businesses increased 2.4% primarily driven by growth in Asia and North America, primarily in the heavy industrial end markets.
  - Organic revenue for the fluids businesses decreased 2.0% primarily due to a decline in the industrial maintenance, repair, and operations end markets in North America.
- Operating margin of 22.8% increased 140 basis points primarily due to the net benefits from the Company's enterprise initiatives and cost management, partially offset by higher restructuring expenses.

2018 compared to 2017

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2018	2017	Inc (Dec)	Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 1,724	$ 1,724	—%	1.0%	(0.4)%	—%	(0.6)%	—%
Operating income	$ 369	$ 357	3.3%	2.1%	(0.2)%	1.7%	(0.3)%	3.3%
Operating margin %	21.4%	20.7%	70 bps	20 bps	—	40 bps	10 bps	70 bps

- Operating revenue was flat as an increase in organic revenue was offset by the unfavorable effect of foreign currency translation and a divestiture.
- Organic revenue increased 1.0% as higher demand in North America was partially offset by lower demand in Europe.
  - Organic revenue for the automotive aftermarket businesses grew 2.3% as stronger demand in the car care and tire repair businesses in North America was partially offset by a decline in the engine and body repair businesses.
  - Organic revenue for the polymers businesses increased 0.9% primarily driven by an increase in North America and South America, partially offset by a decline in Europe.
  - Organic revenue for the fluids businesses declined 1.1% primarily due to decreased demand in Europe and South America, partially offset by growth in the industrial maintenance, repair, and operations end markets in North America.
- Operating margin of 21.4% increased 70 basis points primarily driven by benefits from the Company's enterprise initiatives, lower restructuring expenses and positive operating leverage of 30 basis points, partially offset by unfavorable price/cost of 100 basis points.

CONSTRUCTION PRODUCTS

This segment is a branded supplier of innovative engineered fastening systems and solutions. This segment primarily serves the residential construction, renovation/remodel and commercial construction markets. Products in this segment include:

- fasteners and related fastening tools for wood and metal applications;
- anchors, fasteners and related tools for concrete applications;
- metal plate truss components and related equipment and software; and
- packaged hardware, fasteners, anchors and other products for retail.

The results of operations for the Construction Products segment for 2019, 2018 and 2017 were as follows:

2019 compared to 2018

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2019	2018	Inc (Dec)	Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 1,625	$ 1,700	(4.4)%	(1.0)%	—%	— %	(3.4)%	(4.4)%
Operating income	$ 383	$ 414	(7.4)%	(3.1)%	—%	(1.2)%	(3.1)%	(7.4)%
Operating margin %	23.6%	24.3%	(70) bps	(50) bps	—	(30) bps	10 bps	(70) bps

- Operating revenue decreased in 2019 due to the unfavorable effect of foreign currency translation and lower organic revenue.
- Organic revenue declined 1.0% in 2019.
  - North American organic revenue was flat as an increase of 1.9% in the United States residential end markets was offset by a decline of 3.2% in the commercial end markets and a decline in Canada.
  - International organic revenue declined 1.8%. Asia Pacific organic revenue decreased 5.1% primarily due to a decline in Australia and New Zealand across all end markets. European organic revenue increased 1.3% driven by growth in continental Europe.
- Operating margin of 23.6% decreased 70 basis points primarily driven by unfavorable price/cost of 40 basis points, higher restructuring expenses, product mix and negative operating leverage of 10 basis points, partially offset by benefits from the Company's enterprise initiatives.

2018 compared to 2017

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2018	2017	Inc (Dec)	Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 1,700	$ 1,672	1.6%	1.2%	—%	—%	0.4%	1.6%
Operating income	$ 414	$ 399	3.6%	3.1%	—%	0.3%	0.2%	3.6%
Operating margin %	24.3%	23.9%	40 bps	40 bps	—	10 bps	(10) bps	40 bps

- Operating revenue increased due to higher organic revenue and the favorable effect of foreign currency translation.
- Organic revenue increased 1.2% in 2018.
  - North American organic revenue grew 1.6% as growth in the residential end markets of 3.2% was partially offset by a decline in the commercial end markets of 5.7%.
  - International organic revenue increased 0.9%. European organic revenue increased 2.7% primarily due to growth in continental Europe and the Nordic countries. Asia Pacific organic revenue declined 0.8% primarily due to a decrease in the Australia and New Zealand retail end markets in the second half of the year.
- Operating margin was 24.3% in 2018. The increase of 40 basis points was primarily driven by the net benefits of the Company's enterprise initiatives and cost management of 110 basis points and positive operating leverage of 20 basis points, partially offset by unfavorable price/cost of 90 basis points.

SPECIALTY PRODUCTS

This segment is focused on diversified niche market opportunities with substantial patent protection producing beverage packaging equipment and consumables, product coding and marking equipment and consumables, and appliance components and fasteners. This segment primarily serves the food and beverage, general industrial, consumer durables, industrial capital goods and printing and publishing markets. Products in this segment include:

- line integration, conveyor systems and line automation for the food and beverage industries;
- plastic consumables that multi-pack cans and bottles and related equipment;
- foil, film and related equipment used to decorate consumer products;

- product coding and marking equipment and related consumables;
- plastic and metal closures and components for appliances;
- airport ground support equipment; and
- components for medical devices.

The results of operations for the Specialty Products segment for 2019, 2018 and 2017 were as follows:

2019 compared to 2018

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2019	2018	Inc (Dec)	Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 1,825	$ 1,951	(6.5)%	(4.1)%	(0.6)%	— %	(1.8)%	(6.5)%
Operating income	$ 472	$ 522	(9.7)%	(7.6)%	— %	(0.5)%	(1.6)%	(9.7)%
Operating margin %	25.9%	26.8%	(90) bps	(100) bps	20 bps	(10) bps	—	(90) bps

- Operating revenue decreased in 2019 due to lower organic revenue, the unfavorable effect of foreign currency translation and the impact of divestiture activity.
- Operating revenue for 2019 included $14 million related to the businesses divested in 2019.
- Organic revenue decreased 4.1% in 2019. Consumables declined 5.8% primarily due to lower demand in North America and Europe. Equipment sales increased 2.2% primarily due to higher demand in North America, partially offset by a decline in Asia. Product line simplification activities reduced organic revenue by 100 basis points.
  - North American organic revenue decreased 3.1% primarily due to a decrease in the specialty films, labels and appliance businesses, partially offset by growth in the ground support equipment business and consumer packaging businesses.
  - International organic revenue decreased 5.6% primarily due to a decline in the specialty films, graphics, appliance and foils businesses in Europe.
- Operating margin of 25.9% decreased 90 basis points primarily due to negative operating leverage of 90 basis points, product mix and higher employee-related expenses, partially offset by benefits from the Company's enterprise initiatives.

2018 compared to 2017

Dollars in millions	For the Years Ended December 31,			Components of Increase (Decrease)				
	2018	2017	Inc (Dec)	Organic	Acquisition/Divestiture	Restructuring	Foreign Currency	Total
Operating revenue	$ 1,951	$ 1,938	0.7 %	(0.4)%	(0.1)%	—%	1.2%	0.7 %
Operating income	$ 522	$ 527	(0.8)%	(2.5)%	(0.1)%	0.6%	1.2%	(0.8)%
Operating margin %	26.8%	27.2%	(40) bps	(60) bps	—	20 bps	—	(40) bps

- Operating revenue increased due to the favorable effect of foreign currency translation.
- Organic revenue decreased 0.4% as consumables declined 2.9%, partially offset by growth in equipment sales of 9.9%. Product line simplification activities reduced organic revenue growth by 130 basis points.
  - North American organic revenue grew 1.8% primarily due to increased demand in the consumer packaging and ground support businesses, partially offset by a decline in the labels, appliance and plastic films businesses.
  - International organic revenue decreased 3.8% primarily due to a decline in the graphics, appliance and plastic films businesses in Europe and Asia Pacific.
- Operating margin of 26.8% in 2018 decreased 40 basis points primarily driven by the unfavorable impact of product mix, higher freight and employee-related expenses, and unfavorable price/cost of 20 basis points, partially offset by benefits from the Company's enterprise initiatives and lower restructuring expenses.

OTHER FINANCIAL HIGHLIGHTS

- Interest expense was $221 million in 2019, $257 million in 2018 and $260 million in 2017. Interest expense in 2019 was $36 million lower than the previous year primarily due to the repayment of the $700 million notes due April 1, 2019 and the $650 million notes due March 1, 2019. Interest expense in 2018 was $3 million lower than 2017 primarily due to lower outstanding commercial paper in 2018.
- Other income (expense) was income of $107 million in 2019, $67 million in 2018 and $45 million in 2017. The income in 2019 increased $40 million compared to the previous year primarily due to a net pre-tax gain on the disposal of operations and affiliates of $44 million in 2019. The income in 2018 increased $22 million compared to 2017 primarily due to other net periodic benefit income related to defined benefit pension and other postretirement plans and lower foreign currency translation losses.
- The effective tax rate was 23.3% in 2019, 24.5% in 2018, and 48.4% in 2017. The 2019 effective tax rate benefited from a discrete tax benefit of $21 million in the third quarter for the U.S. federal provision to return adjustment resulting primarily from changes in estimates related to the "Tax Cuts and Jobs Act." The 2018 effective tax rate benefited from a discrete tax benefit of $37 million in the third quarter related to the release of a valuation allowance against the deferred tax assets of a non-U.S. subsidiary, which was partially offset by a discrete tax charge of $22 million in the third quarter related to foreign tax credits. Included in the effective tax rate for 2017 was a one-time additional income tax expense of $658 million related to the United States "Tax Cuts and Jobs Act". Additionally, the effective tax rate for 2019, 2018 and 2017 included discrete tax benefits of $28 million, $10 million and $50 million, respectively, related to excess tax benefits from stock-based compensation. Refer to Note 6. Income Taxes in Item 8. Financial Statements and Supplementary Data for further information.
- The impact of the Euro and other foreign currencies against the U.S. Dollar decreased operating revenue and income before taxes by approximately $339 million and $84 million in 2019 versus 2018, respectively. The impact of the Euro and other foreign currencies against the U.S. Dollar increased operating revenue and income before taxes by approximately $150 million and $37 million in 2018 versus 2017, respectively.

NEW ACCOUNTING PRONOUNCEMENTS

Information regarding new accounting pronouncements is included in Note 1. Description of Business and Summary of Significant Accounting Policies in Item 8. Financial Statements and Supplementary Data.

LIQUIDITY AND CAPITAL RESOURCES

The Company’s primary sources of liquidity are free cash flow and short-term credit facilities. In addition, the Company had $2.0 billion of cash and equivalents on hand as of December 31, 2019 and also maintains strong access to public debt markets. Management believes that these sources are sufficient to service debt and to finance the Company's capital allocation priorities, which include:

- internal investments to support organic growth and sustain core businesses;
- payment of an attractive dividend to shareholders; and
- external investments in selective strategic acquisitions that support the Company's organic growth focus and an active share repurchase program.

The Company believes that, based on its operating revenue, operating margin, free cash flow, and credit ratings, it could readily obtain additional financing, if necessary.

Cash Flow

The Company uses free cash flow to measure cash flow generated by operations that is available for dividends, share repurchases, acquisitions and debt repayment. The Company believes this non-GAAP financial measure is useful to investors in evaluating the Company's financial performance and measures the Company's ability to generate cash internally to fund Company initiatives. Free cash flow represents net cash provided by operating activities less additions to plant and equipment. Free cash flow is a measurement that is not the same as net cash flow from operating activities per the statement of cash flows and may not be consistent with similarly titled measures used by other companies. Summarized cash flow information for the years ended December 31, 2019, 2018 and 2017 was as follows:

In millions	**2019**	**2018**	**2017**
Net cash provided by operating activities	$ 2,995	$ 2,811	$ 2,402
Additions to plant and equipment	(326)	(364)	(297)
Free cash flow	$ 2,669	$ 2,447	$ 2,105
Cash dividends paid	$ (1,321)	$ (1,124)	$ (941)
Repurchases of common stock	(1,500)	(2,000)	(1,000)
Acquisition of businesses (excluding cash and equivalents)	(4)	—	(3)
Proceeds from sale of operations and affiliates	120	1	2
Net proceeds (repayments) of debt	422	(851)	197
Other	100	49	117
Effect of exchange rate changes on cash and equivalents	(9)	(112)	145
Net increase (decrease) in cash and equivalents	$ 477	$ (1,590)	$ 622

Free cash flow for the year ended December 31, 2017 included the impact of an additional $115 million discretionary pension contribution related to the U.S. primary pension plan.

Stock Repurchase Programs

On February 13, 2015, the Company's Board of Directors authorized a stock repurchase program which provided for the repurchase of up to $6.0 billion of the Company's common stock over an open-ended period of time (the "2015 Program"). Under the 2015 Program, the Company repurchased approximately 6.1 million shares of its common stock at an average price of $91.78 per share during 2015, approximately 18.7 million shares of its common stock at an average price of $107.17 per share during 2016, approximately 7.1 million shares of its common stock at an average price of $140.56 per share during 2017, approximately 13.9 million shares of its common stock at an average price of $143.66 per share during 2018 and approximately 3.1 million shares of its common stock at an average price of $143.23 per share during 2019. The 2015 Program was completed in the second quarter of 2019.

On August 3, 2018, the Company's Board of Directors authorized a new stock repurchase program which provides for the repurchase of up to an additional $3.0 billion of the Company's common stock over an open-ended period of time (the "2018 Program"). Under the 2018 Program, the Company repurchased approximately 6.7 million shares of its common stock at an average price of $158.11 per share during 2019. As of December 31, 2019, there were approximately $1.9 billion of authorized repurchases remaining under the 2018 program.

Adjusted After-Tax Return on Average Invested Capital

The Company uses adjusted after-tax return on average invested capital ("ROIC") to measure the effectiveness of its operations' use of invested capital to generate profits. ROIC is a non-GAAP financial measure that the Company believes is a meaningful metric to investors in evaluating the Company's financial performance and may be different than the method used by other companies to calculate ROIC. For comparability, the Company excluded the third quarter discrete tax benefit of $21 million from the effective tax rate for the year ended December 31, 2019. Additionally, the Company excluded the third quarter net discrete tax benefit of $15 million from the effective tax rate for the year ended December 31, 2018. The Company also excluded the $658 million income tax charge from the effective tax rate and the $95 million confidential legal settlement from the calculation of ROIC for the year ended December 31, 2017. Average invested capital represents the net assets of the Company, excluding cash and equivalents and outstanding debt, which are excluded as they do not represent capital investment in the Company's operations. Average invested capital is calculated using balances at the start of the period and at the end of each quarter. ROIC for the years ended December 31, 2019, 2018, and 2017 was as follows:

Dollars in millions	**2019**	**2018**	**2017**
Operating income	$ 3,402	$ 3,584	$ 3,485
Less: Legal settlement income	—	—	(95)
Adjusted operating income	3,402	3,584	3,390
Adjusted tax rate	24.0%	24.9%	28.3%
Income taxes	(815)	(893)	(958)
Operating income after taxes	$ 2,587	$ 2,691	$ 2,432
Invested capital:			
Trade receivables	$ 2,461	$ 2,622	$ 2,628
Inventories	1,164	1,318	1,220
Net assets held for sale	280	—	—
Net plant and equipment	1,729	1,791	1,778
Goodwill and intangible assets	5,343	5,717	6,024
Accounts payable and accrued expenses	(1,689)	(1,795)	(1,848)
Other, net	(481)	(519)	21
Total invested capital	$ 8,807	$ 9,134	$ 9,823
Average invested capital	$ 9,028	$ 9,533	$ 10,005
Adjusted after-tax return on average invested capital	28.7%	28.2%	24.3%

ROIC increased 50 basis points for the twelve month period ended December 31, 2019 compared to the prior year period as a result of a 5.3% decrease in average invested capital versus a 3.9% decrease in after-tax operating income. ROIC increased 390 basis points in 2018 versus 2017 primarily related to the new U.S. tax rules and regulations.

A reconciliation of the 2019 effective tax rate excluding the third quarter discrete tax benefit of $21 million is as follows:

	Twelve Months Ended December 31, 2019	
Dollars in millions	**Income Taxes**	**Tax Rate**
As reported	$ 767	23.3%
Discrete tax benefit related to third quarter	21	0.7%
As adjusted	$ 788	24.0%

A reconciliation of the 2018 effective tax rate excluding the third quarter net discrete tax benefit of $15 million is as follows:

	Twelve Months Ended December 31, 2018	
Dollars in millions	**Income Taxes**	**Tax Rate**
As reported	$ 831	24.5%
Net discrete tax benefit related to third quarter	15	0.4%
As adjusted	$ 846	24.9%

A reconciliation of the 2017 effective tax rate excluding the discrete tax charge of $658 million related to the 2017 U.S. tax legislation is as follows:

	Twelve Months Ended December 31, 2017	
Dollars in millions	**Income Taxes**	**Tax Rate**
As reported	$ 1,583	48.4 %
Discrete tax charge related to 2017 U.S. tax legislation	(658)	(20.1)%
As adjusted	$ 925	28.3 %

Refer to Note 6. Income Taxes in Item 8. Financial Statements and Supplementary Data for further information regarding the discrete tax items noted above.

Working Capital

Management uses working capital as a measurement of the short-term liquidity of the Company. Net working capital as of December 31, 2019 and 2018 is summarized as follows:

Dollars in millions	**2019**	**2018**	**Increase (Decrease)**
Current Assets:			
Cash and equivalents	$ 1,981	$ 1,504	$ 477
Trade receivables	2,461	2,622	(161)
Inventories	1,164	1,318	(154)
Prepaid expenses and other current assets	296	334	(38)
Assets held for sale	351	—	351
	6,253	5,778	475
Current Liabilities:			
Short-term debt	4	1,351	(1,347)
Accounts payable and accrued expenses	1,689	1,795	(106)
Liabilities held for sale	71	—	71
Other	390	396	(6)
	2,154	3,542	(1,388)
Net Working Capital	$ 4,099	$ 2,236	$ 1,863

The increase in net working capital as of December 31, 2019 was primarily driven by lower short-term debt. See Note 10. Debt in Item 8. Financial Statements and Supplementary Data for further information.

As of December 31, 2019, approximately half of the Company's cash and equivalents was held by international subsidiaries. Cash and equivalents held internationally may be subject to foreign withholding taxes if repatriated to the U.S. Cash and equivalents held internationally are typically used for international operating needs or reinvested to fund expansion of existing international businesses. International funds may also be used to fund international acquisitions or, if not considered permanently invested, may be repatriated to the U.S. The Company has accrued for foreign withholding taxes related to foreign held cash and equivalents that are not permanently invested.

In the U.S., the Company utilizes cash flows from operations to fund domestic cash needs and the Company's capital allocation priorities. This includes operating needs of the U.S. businesses, dividend payments, share repurchases, acquisitions, servicing of domestic debt obligations, reinvesting to fund expansion of existing U.S. businesses and general corporate needs. The Company may also use its commercial paper program, which is backed by long-term credit facilities, for short-term liquidity needs. The Company believes cash generated by operations and liquidity provided by the Company's commercial paper program will continue to be sufficient to fund cash requirements in the U.S.

Debt

Total debt as of December 31, 2019 and 2018 was as follows:

In millions	**2019**	**2018**	**Increase (Decrease)**
Short-term debt	$ 4	$ 1,351	$ (1,347)
Long-term debt	7,754	6,029	1,725
Total debt	$ 7,758	$ 7,380	$ 378

As of December 31, 2019, short-term debt included $4 million related to the 4.88% notes due December 31, 2020. As of December 31, 2018, short-term debt included $650 million related to the 1.95% notes due March 1, 2019 and $700 million related to the 6.25% notes due April 1, 2019, both of which were repaid on the due date. There was no commercial paper outstanding as of December 31, 2019 and December 31, 2018.

The Company may issue commercial paper to fund general corporate needs, share repurchases, and small and medium-sized acquisitions. During the third quarter of 2019, the Company entered into a $2.5 billion, five-year line of credit agreement with a termination date of September 27, 2024 to support the potential issuances of commercial paper. This agreement replaced the existing $2.5 billion line of credit agreement with a termination date of May 9, 2021. No amounts were outstanding under the line of credit agreement at December 31, 2019. The maximum outstanding commercial paper balance during 2019 was $1.5 billion, while the average daily balance was $306 million.

As of December 31, 2019, the Company's foreign operations had authorized credit facilities with unused capacity of $206 million.

In June 2019, the Company issued €600 million of 0.25% Euro notes due December 5, 2024 at 99.662% of face value, €500 million of 0.625% Euro notes due December 5, 2027 at 99.343% of face value and €500 million of 1.00% Euro notes due June 5, 2031 at 98.982% of face value. Net proceeds from the issuances were used to repay commercial paper and for general corporate purposes.

Total Debt to EBITDA

The Company uses the ratio of total debt to EBITDA as a measure of its ability to repay its outstanding debt obligations. The Company believes that total debt to EBITDA is a meaningful metric to investors in evaluating the Company's long term financial liquidity and may be different than the method used by other companies to calculate total debt to EBITDA. EBITDA and the ratio of total debt to EBITDA are non-GAAP financial measures. The ratio of total debt to EBITDA represents total debt divided by net income before interest expense, other income (expense), income taxes, depreciation, and amortization and impairment of intangible assets on a trailing twelve month basis. Total debt to EBITDA for the years ended December 31, 2019, 2018 and 2017 was as follows:

Dollars in millions	2019	2018	2017
Total debt	$ 7,758	$ 7,380	$ 8,328
Net income	$ 2,521	$ 2,563	$ 1,687
Add:			
Interest expense	221	257	260
Other income	(107)	(67)	(45)
Income taxes	767	831	1,583
Depreciation	267	272	256
Amortization and impairment of intangible assets	159	189	206
EBITDA	$ 3,828	$ 4,045	$ 3,947
Total debt to EBITDA ratio	2.0	1.8	2.1

Stockholders' Equity

The changes to stockholders' equity during 2019 and 2018 were as follows:

In millions	2019	2018
Beginning balance	$ 3,258	$ 4,589
Net income	2,521	2,563
Adoption of new accounting guidance	—	(415)
Cash dividends declared	(1,335)	(1,186)
Repurchases of common stock	(1,500)	(2,000)
Foreign currency translation adjustments	(2)	(328)
Other	88	35
Ending balance	$ 3,030	$ 3,258

CONTRACTUAL OBLIGATIONS AND OFF-BALANCE SHEET ARRANGEMENTS

The Company's significant contractual obligations as of December 31, 2019 were as follows:

In millions	2020	2021	2022	2023	2024	2025 and Future Years
Principal payments on long-term debt	$ 4	$ 350	$ 561	$ 561	$ 1,373	$ 4,992
Interest payments on debt	197	197	185	175	155	1,653
Noncurrent income taxes payable	33	49	49	91	122	151
Operating leases	55	42	32	23	18	21
	$ 289	$ 638	$ 827	$ 850	$ 1,668	$ 6,817

As of December 31, 2019, the Company had recorded noncurrent liabilities for unrecognized tax benefits of $168 million. The Company is not able to reasonably estimate the timing of payments related to the liabilities for unrecognized tax benefits. The Company did not have any significant off-balance sheet commitments at December 31, 2019.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The Company has three accounting policies that it believes are most important to the Company's financial condition and results of operations, and which require the Company to make estimates about matters that are inherently uncertain. Management bases its estimates on historical experience, and in some cases on observable market information. Various assumptions are also used that are believed to be reasonable under the circumstances and form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

The Company's critical accounting policies are as follows:

Income Taxes— The Company provides deferred income tax assets and liabilities based on the estimated future tax effects of differences between the financial and tax bases of assets and liabilities based on currently enacted tax laws. The Company's deferred and other tax balances are based on management's interpretation of the tax regulations and rulings in numerous taxing jurisdictions. Income tax expense, assets and liabilities recognized by the Company also reflect its best estimates and assumptions regarding, among other things, the level of future taxable income, the effect of the Company's various tax planning strategies and uncertain tax positions. Future tax authority rulings and changes in tax laws, changes in projected levels of taxable income and future tax planning strategies could affect the actual effective tax rate and tax balances recorded by the Company.

Goodwill and Intangible Assets— The Company's business acquisitions typically result in recording goodwill and other intangible assets, which are a significant portion of the Company's total assets and affect the amount of amortization expense and impairment charges that the Company could incur in future periods. The Company follows the guidance prescribed in the accounting standards to test goodwill and intangible assets for impairment. On an annual basis, or more frequently if triggering events occur, the Company compares the estimated fair value of its reporting units to the carrying value of each reporting unit to determine if a potential goodwill impairment exists. If the fair value of a reporting unit is less than its carrying value, an impairment loss, if any, is recorded for the difference between the implied fair value and the carrying value of the reporting unit's goodwill. In calculating the fair value of the reporting units or specific intangible assets, management relies on a number of factors, including business plans, economic projections, anticipated future cash flows, comparable transactions and other market data. There are inherent uncertainties related to these factors and management's judgment in applying them in the impairment tests of goodwill and other intangible assets.

As of December 31, 2019, the Company had total goodwill and intangible assets of approximately $5.3 billion allocated to its reporting units. Although there can be no assurance that the Company will not incur additional impairment charges related to its goodwill and other intangible assets, the Company generally believes the risk of significant impairment charges is lessened by the number of diversified businesses and end markets represented by its reporting units that have goodwill and other intangible assets. In addition, the individual businesses in many of the reporting units have been acquired over a long period of time, and in many cases have been able to improve their performance, primarily as a result of the application of the Company's 80/20 Front-to-Back process. The amount of goodwill and other intangible assets allocated to individual reporting units ranges from approximately $167 million to $1.2 billion, with the average amount equal to $533 million. Fair value determinations require considerable judgment and are sensitive to changes in the factors described above. Due to the inherent uncertainties associated with these factors and economic conditions in the Company's global end markets, impairment charges related to one or more reporting units could occur in future periods.

Pension and Other Postretirement Benefits— The Company has various company-sponsored defined benefit retirement plans covering a number of U.S. employees and many employees outside the U.S. Pension and other postretirement benefit expense and obligations are determined based on actuarial valuations. Pension benefit obligations are generally based on each participant's years of service, future compensation, and age at retirement or termination. Important assumptions in determining pension and postretirement expense and obligations are the discount rate, the expected long-term return on plan assets, life expectancy, and health care cost trend rates. Future changes in any of these assumptions could materially affect the amounts recorded related to the Company's pension and other postretirement benefit plans. See Note 11. Pension and Other Postretirement Benefits in Item 8. Financial Statements and Supplementary Data for additional discussion of actuarial assumptions used in determining pension and postretirement health care liabilities and expenses.

The Company determines the discount rate used to measure plan liabilities as of the year-end measurement date for the U.S. primary pension plan. The discount rate reflects the current rate at which the associated liabilities could theoretically be effectively settled at the end of the year. In estimating this rate, the Company looks at rates of return on high-quality fixed income investments, with similar duration to the liabilities in the plan. A 25 basis point decrease in the discount rate would increase the present value of the U.S. primary pension plan obligation by approximately $41 million. The Company estimates the service and interest cost components of net periodic benefit cost by applying specific spot rates along the yield curve to the projected cash flows rather than a single weighted-average rate. See Note 11. Pension and Other Postretirement Benefits in Item 8. Financial Statements and Supplementary Data for information on the Company's pension and other postretirement benefit plans and related assumptions.

The expected long-term return on plan assets is based on historical and expected long-term returns for similar investment allocations among asset classes. For the U.S. primary pension plan, a 25 basis point decrease in the expected return on plan assets would increase the annual pension expense by approximately $4 million.

ITEM 7A. *Quantitative and Qualitative Disclosures About Market Risk*

MARKET RISK

The Company is exposed to certain market risks that exist as part of its ongoing business operations, including fluctuations in currency exchange rates, price volatility for certain commodities and changes in interest rates. The Company does not engage in speculative or leveraged transactions and does not hold or issue financial instruments for trading purposes.

Interest Rate Risk

The Company’s exposure to market risk for changes in interest rates relates primarily to the fair value of the Company’s fixed rate debt. Refer to Note 10. Debt in Item 8. Financial Statements and Supplemental Data for details related to the fair value of the Company's debt instruments.

Foreign Currency Risk

The Company operates in the U.S. and 52 foreign countries. The funding for the foreign manufacturing operations is provided primarily through the permanent investment of equity capital. The Company’s products are typically manufactured and sold within the same country or economic union. Therefore, the Company's manufacturing operations generally do not have significant assets or liabilities denominated in currencies other than their functional currencies.

The Company designated the €1.0 billion of Euro notes issued in May 2014, the €1.0 billion of Euro notes issued in May 2015 and the €1.6 billion of Euro notes issued in June 2019 as hedges of a portion of its net investment in Euro-denominated foreign operations to reduce foreign currency risk associated with the investment in these operations. Changes in the value of this debt resulting from fluctuations in the Euro to U.S. Dollar exchange rate have been recorded as foreign currency translation adjustments within Accumulated other comprehensive income (loss). The cumulative unrealized pre-tax gain recorded in Accumulated other comprehensive income (loss) related to the net investment hedge was $239 million and $187 million as of December 31, 2019 and 2018, respectively.

ITEM 8. ***Financial Statements and Supplementary Data***

MANAGEMENT REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of Illinois Tool Works Inc. (the "Company" or "ITW") is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). ITW’s internal control system was designed to provide reasonable assurance to the Company’s management and Board of Directors regarding the preparation and fair presentation of published financial statements.

All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

ITW management assessed the effectiveness of the Company’s internal control over financial reporting as of December 31, 2019. In making this assessment, it used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control—Integrated Framework (2013). Based on our assessment we believe that, as of December 31, 2019, the Company’s internal control over financial reporting is effective based on those criteria.

The effectiveness of the Company’s internal control over financial reporting as of December 31, 2019 has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report herein.

/s/ E. Scott Santi
E. Scott Santi
Chairman & Chief Executive Officer
February 14, 2020

/s/ Michael M. Larsen
Michael M. Larsen
Senior Vice President & Chief Financial Officer
February 14, 2020

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Illinois Tool Works Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated statements of financial position of Illinois Tool Works Inc. and subsidiaries (the "Company") as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, changes in stockholders' equity, and cash flows, for each of the three years in the period ended December 31, 2019, and the related notes (collectively referred to as the "financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 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 December 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by COSO.

Basis for Opinions

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

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

Definition and Limitations of Internal Control over Financial Reporting

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

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

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the 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.

Income Taxes-Refer to Note 6 to the financial statements

Critical Audit Matter Description

The Company's income tax expense is recognized and measured based on management's interpretation of the tax regulations and rulings in numerous taxing jurisdictions, which requires significant judgment. When calculating income tax expense management makes estimates and assumptions, including determination of the completeness of book income in each jurisdiction, calculation of taxable income through identification and classification of book to tax differences (either temporary or permanent items), consideration of applicable tax deductions or credits, and the identification of uncertain tax positions.

The evaluation of each uncertain tax position requires management to apply specialized skill and knowledge related to the identified position. Management evaluates uncertain tax positions identified and a liability is established for unrecognized tax benefits when there is a more than 50% likelihood that its tax position will not be sustained upon examination by taxing authorities. There is additional judgment to determine the amount of the liability for the underlying tax position. The Company's income tax expense for 2019 was $767 million and the liability recorded for unrecognized tax benefits as of December 31, 2019, was $296 million.

Given the number of taxing jurisdictions and the complex and subjective nature of the associated tax regulations and rulings, certain audit matters required a high degree of auditor judgment and increased extent of effort, including the need to involve our income tax specialists. These matters included the auditing of income tax expense, identification of uncertain tax positions, measurement of unrecognized tax benefits, and certain planning transactions with income tax expense implications.

How the Critical Audit Matter Was Addressed in the Audit

With the assistance of our income tax specialists, our principal audit procedures related to income tax expense included the following, among others:

- We tested the effectiveness of management's controls over income taxes, including those over income tax expense, unrecognized tax benefits, and certain planning transactions with income tax expense implications.
- We evaluated management's significant estimates and judgments incorporated into the calculation of income tax expense by:
    - Selecting a sample of book to tax differences (temporary and permanent) and testing the accuracy, completeness, and classification of the selections, including evaluating that all impacts of significant transactions with income tax expense implications are considered.
    - Developing an expectation over the foreign income tax expense by jurisdiction and comparing it to the recorded balance.
    - Testing the accuracy of the income tax expense calculation.
- We evaluated management's significant judgments regarding the identification of uncertain tax positions by:
    - Evaluating the reasonableness of a selection of certain planning transactions with income tax expense implications, including the completeness and accuracy of the underlying data supporting the transactions.
    - Assessing management's methods and assumptions used in identifying uncertain tax positions.
    - Comparing results of prior tax audits to ongoing and anticipated tax audits by tax authorities.
    - Evaluating external information, including applicable tax law, new interpretations, and related changes to assess the completeness and reasonableness of management's considerations.
    - Determining if there was additional information not considered in management's assessment.
- We evaluated a sample of the liabilities recorded for unrecognized tax benefits to assess the establishment and amount of the liability for the specific underlying tax position.

/s/ DELOITTE & TOUCHE LLP
Chicago, Illinois
February 14, 2020

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

Statement of Income
Illinois Tool Works Inc. and Subsidiaries

In millions except per share amounts	For the Years Ended December 31		
	2019	2018	2017
Operating Revenue	$ 14,109	$ 14,768	$ 14,314
Cost of revenue	8,187	8,604	8,306
Selling, administrative, and research and development expenses	2,361	2,391	2,412
Legal settlement (income)	—	—	(95)
Amortization and impairment of intangible assets	159	189	206
Operating Income	3,402	3,584	3,485
Interest expense	(221)	(257)	(260)
Other income (expense)	107	67	45
Income Before Taxes	3,288	3,394	3,270
Income taxes	767	831	1,583
Net Income	$ 2,521	$ 2,563	$ 1,687
Net Income Per Share:			
Basic	$ 7.78	$ 7.65	$ 4.90
Diluted	$ 7.74	$ 7.60	$ 4.86

The Notes to Financial Statements are an integral part of this statement.

Statement of Comprehensive Income
Illinois Tool Works Inc. and Subsidiaries

	For the Years Ended December 31		
In millions	**2019**	**2018**	**2017**
Net Income	$ 2,521	$ 2,563	$ 1,687
Other Comprehensive Income (Loss):			
Foreign currency translation adjustments, net of tax	(2)	(328)	406
Pension and other postretirement benefit adjustments, net of tax	(26)	(17)	114
Comprehensive Income	$ 2,493	$ 2,218	$ 2,207

The Notes to Financial Statements are an integral part of this statement.

Statement of Financial Position
Illinois Tool Works Inc. and Subsidiaries

In millions except per share amounts	December 31 2019	2018
Assets		
Current Assets:		
Cash and equivalents	$ 1,981	$ 1,504
Trade receivables	2,461	2,622
Inventories	1,164	1,318
Prepaid expenses and other current assets	296	334
Assets held for sale	351	—
Total current assets	6,253	5,778
Net plant and equipment	1,729	1,791
Goodwill	4,492	4,633
Intangible assets	851	1,084
Deferred income taxes	516	554
Other assets	1,227	1,030
	$ 15,068	$ 14,870
Liabilities and Stockholders' Equity		
Current Liabilities:		
Short-term debt	$ 4	$ 1,351
Accounts payable	472	524
Accrued expenses	1,217	1,271
Cash dividends payable	342	328
Income taxes payable	48	68
Liabilities held for sale	71	—
Total current liabilities	2,154	3,542
Noncurrent Liabilities:		
Long-term debt	7,754	6,029
Deferred income taxes	668	707
Noncurrent income taxes payable	462	495
Other liabilities	1,000	839
Total noncurrent liabilities	9,884	8,070
Stockholders' Equity:		
Common stock (par value of $0.01 per share):		
Issued- 550.0 shares in 2019 and 2018 Outstanding- 319.8 shares in 2019 and 328.1 shares in 2018	6	6
Additional paid-in-capital	1,304	1,253
Retained earnings	22,403	21,217
Common stock held in treasury	(18,982)	(17,545)
Accumulated other comprehensive income (loss)	(1,705)	(1,677)
Noncontrolling interest	4	4
Total stockholders' equity	3,030	3,258
	$ 15,068	$ 14,870

The Notes to Financial Statements are an integral part of this statement.

Statement of Changes in Stockholders' Equity
Illinois Tool Works Inc. and Subsidiaries

In millions except per share amounts	Common Stock	Additional Paid-in Capital	Retained Earnings	Common Stock Held in Treasury	Accumulated Other Comprehensive Income (Loss)	Noncontrolling Interest	Total
Balance at December 31, 2016	$ 6	$ 1,188	$ 19,505	$ (14,638)	$ (1,807)	$ 5	$ 4,259
Net income	—	—	1,687	—	—	—	1,687
Common stock issued for stock-based compensation	—	(4)	—	76	—	—	72
Stock-based compensation expense	—	36	—	—	—	—	36
Repurchases of common stock	—	—	—	(1,000)	—	—	(1,000)
Dividends declared ($2.86 per share)	—	—	(982)	—	—	—	(982)
Pension and other postretirement benefit adjustments	—	—	—	—	114	—	114
Currency translation adjustments	—	—	—	—	406	—	406
Noncontrolling interest	—	(2)	—	—	—	(1)	(3)
Balance at December 31, 2017	6	1,218	20,210	(15,562)	(1,287)	4	4,589
Net income	—	—	2,563	—	—	—	2,563
Adoption of new accounting guidance	—	—	(370)	—	(45)	—	(415)
Common stock issued for stock-based compensation	—	(5)	—	17	—	—	12
Stock-based compensation expense	—	40	—	—	—	—	40
Repurchases of common stock	—	—	—	(2,000)	—	—	(2,000)
Dividends declared ($3.56 per share)	—	—	(1,186)	—	—	—	(1,186)
Pension and other postretirement benefit adjustments	—	—	—	—	(17)	—	(17)
Currency translation adjustments	—	—	—	—	(328)	—	(328)
Balance at December 31, 2018	6	1,253	21,217	(17,545)	(1,677)	4	3,258
Net income	—	—	2,521	—	—	—	2,521
Common stock issued for stock-based compensation	—	11	—	63	—	—	74
Stock-based compensation expense	—	41	—	—	—	—	41
Repurchases of common stock	—	—	—	(1,500)	—	—	(1,500)
Dividends declared ($4.14 per share)	—	—	(1,335)	—	—	—	(1,335)
Pension and other postretirement benefit adjustments	—	—	—	—	(26)	—	(26)
Currency translation adjustments	—	—	—	—	(2)	—	(2)
Noncontrolling interest	—	(1)	—	—	—	—	(1)
Balance at December 31, 2019	$ 6	$ 1,304	$ 22,403	$ (18,982)	$ (1,705)	$ 4	$ 3,030

The Notes to Financial Statements are an integral part of this statement.

Statement of Cash Flows
Illinois Tool Works Inc. and Subsidiaries

In millions	For the Years Ended December 31 2019	2018	2017
Cash Provided by (Used for) Operating Activities:			
Net income	$ 2,521	$ 2,563	$ 1,687
Adjustments to reconcile net income to cash provided by operating activities:			
Depreciation	267	272	256
Amortization and impairment of intangible assets	159	189	206
Change in deferred income taxes	32	34	64
Provision for uncollectible accounts	6	5	3
(Income) loss from investments	(15)	(9)	(16)
(Gain) loss on sale of plant and equipment	(9)	(7)	(1)
(Gain) loss on sale of operations and affiliates	(44)	2	(1)
Stock-based compensation expense	41	40	36
Other non-cash items, net	9	10	10
Change in assets and liabilities, net of acquisitions and divestitures:			
(Increase) decrease in—			
Trade receivables	40	(60)	(138)
Inventories	98	(108)	(81)
Prepaid expenses and other assets	11	3	(121)
Increase (decrease) in—			
Accounts payable	(16)	(46)	39
Accrued expenses and other liabilities	(95)	(36)	(42)
Income taxes	(7)	(41)	501
Other, net	(3)	—	—
Net cash provided by operating activities	2,995	2,811	2,402
Cash Provided by (Used for) Investing Activities:			
Acquisition of businesses (excluding cash and equivalents)	(4)	—	(3)
Additions to plant and equipment	(326)	(364)	(297)
Proceeds from investments	20	16	43
Proceeds from sale of plant and equipment	25	26	14
Proceeds from sale of operations and affiliates	120	1	2
Other, net	(18)	(4)	(10)
Net cash provided by (used for) investing activities	(183)	(325)	(251)
Cash Provided by (Used for) Financing Activities:			
Cash dividends paid	(1,321)	(1,124)	(941)
Issuance of common stock	85	22	84
Repurchases of common stock	(1,500)	(2,000)	(1,000)
Net proceeds from (repayments of) debt with original maturities of three months or less	(1)	(850)	849
Proceeds from debt with original maturities of more than three months	1,774	—	—
Repayments of debt with original maturities of more than three months	(1,351)	(1)	(652)
Other, net	(12)	(11)	(14)
Net cash provided by (used for) financing activities	(2,326)	(3,964)	(1,674)
Effect of Exchange Rate Changes on Cash and Equivalents	(9)	(112)	145
Cash and Equivalents:			
Increase (decrease) during the year	477	(1,590)	622
Beginning of year	1,504	3,094	2,472
End of year	$ 1,981	$ 1,504	$ 3,094
Supplementary Cash Flow Information:			
Cash Paid During the Year for Interest	$ 223	$ 247	$ 240
Cash Paid During the Year for Income Taxes, Net of Refunds	$ 742	$ 838	$ 1,018

The Notes to Financial Statements are an integral part of this statement.

Notes to Financial Statements

(1) Description of Business and Summary of Significant Accounting Policies

Description of business— Illinois Tool Works Inc. (the "Company" or "ITW") is a global manufacturer of a diversified range of industrial products and equipment with approximately 84 divisions in 53 countries. The Company primarily serves the automotive OEM/tiers, commercial food equipment, construction, general industrial, and automotive aftermarket end markets.

Consolidation and translation— The financial statements include the Company and its majority-owned subsidiaries. The Company follows the equity method of accounting for investments where the Company has a significant influence but not a controlling interest. Intercompany transactions are eliminated from the financial statements. Foreign subsidiaries' assets and liabilities are translated to U.S. dollars at end-of-period exchange rates. Revenues and expenses are translated at average rates for the period. Translation adjustments are reported as a component of accumulated other comprehensive income (loss) in stockholders' equity.

Reclassifications— Certain reclassifications of prior year data have been made to conform to current year reporting.

Use of estimates— The preparation of the Company's financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and the notes to financial statements. Actual results could differ from those estimates.

Acquisitions— The Company accounts for acquisitions under the acquisition method, in which assets acquired and liabilities assumed are recorded at fair value as of the date of acquisition. The operating results of the acquired companies are included in the Company's consolidated financial statements from the date of acquisition.

Operating revenue— Prior to 2018, the Company recognized revenue when persuasive evidence of an arrangement existed, product had shipped and the risks and rewards of ownership had transferred or services had been rendered, the price to the customer was fixed or determinable, and collectability was reasonably assured, which generally occurred at the time of product shipment. Effective January 1, 2018, the Company adopted new revenue recognition guidance. Under this new guidance, operating revenue is recognized at the time a good or service is transferred to a customer and the customer obtains control of that good or receives the service performed. The Company's sales arrangements with customers are predominantly short-term in nature involving a single performance obligation related to the delivery of products and generally provide for transfer of control at the time of shipment. In limited circumstances, arrangements may include service performed over time, or there may be significant obligations to the customer that are unfulfilled at the time of shipment, typically involving installation of equipment and customer acceptance. In these circumstances, operating revenue may be recognized over time as the service is provided to the customer or deferred until all significant obligations have been completed. The amount of operating revenue recorded reflects the consideration to which the Company expects to be entitled in exchange for goods or services and may include adjustments for customer allowances and rebates. Customer allowances and rebates consist primarily of volume discounts and other short-term incentive programs, which are estimated at the time of sale based on historical experience and anticipated trends. Shipping and handling charges billed to customers are included in revenue and are recognized along with the related product revenue as they are considered a fulfillment cost. Sales commissions are expensed when incurred, which is generally at the time of revenue recognition. Contract liabilities associated with sales arrangements primarily relate to deferred revenue on equipment sales and prepaid service contracts. Total deferred revenue and customer deposits were $188 million and $215 million as of December 31, 2019 and 2018, respectively, and are short-term in nature. For additional information regarding the Company's operating revenue, see New Accounting Pronouncements below and Note 3. Operating Revenue.

Research and development expenses— Research and development expenses are recorded as expense in the year incurred. These costs were $221 million, $233 million and $225 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Advertising expenses— Advertising expenses are recorded as expense in the year incurred. These costs were $48 million, $50 million and $53 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Income taxes— The Company utilizes the asset and liability method of accounting for income taxes. Deferred income taxes are determined based on the estimated future tax effects of differences between the financial and tax bases of assets and liabilities given the provisions of the enacted tax laws. Valuation allowances are established when it is estimated that it is more likely than not that the tax benefit of the deferred tax asset will not be realized.

Cash and equivalents— Cash and equivalents include cash on hand and instruments having original maturities of three months or less. Cash and equivalents are stated at cost, which approximates fair value.

Trade receivables— Trade receivables are net of allowances for doubtful accounts. Prior to 2018, the allowance for doubtful accounts included reserves for uncollectible accounts and customer credits. Under the new revenue guidance adopted on January 1, 2018, the reserve for customer credits is reported as a liability and included in Accrued expenses in the Statement of Financial Position. Accordingly, after January 1, 2018, the allowance for doubtful accounts was comprised of reserves for uncollectible accounts. The changes in the allowance for doubtful accounts for the years ended December 31, 2019, 2018 and 2017 were as follows:

In millions	2019	2018	2017
Beginning balance	$ 21	$ 43	$ 43
Adoption of new revenue recognition guidance	—	(23)	—
Provision charged to expense	6	5	3
Write-offs, net of recoveries	(4)	(3)	(6)
Transfer to assets held for sale	(2)	—	—
Foreign currency translation	(1)	(1)	3
Ending balance	$ 20	$ 21	$ 43

Inventories— Inventories are stated at the lower of cost or net realizable value and include material, labor and factory overhead. The last-in, first-out ("LIFO") method is used to determine the cost of inventories at certain U.S. businesses. The first-in, first-out ("FIFO") method, which approximates current cost, is used for all other inventories. Inventories priced at LIFO were approximately 23% of total inventories as of December 31, 2019 and 2018. If the FIFO method was used for all inventories, total inventories would have been approximately $89 million and $97 million higher than reported at December 31, 2019 and 2018, respectively. The major classes of inventory at December 31, 2019 and 2018 were as follows:

In millions	2019	2018
Raw material	$ 452	$ 523
Work-in-process	131	161
Finished goods	670	731
LIFO reserve	(89)	(97)
Total inventories	$ 1,164	$ 1,318

Net plant and equipment— Net plant and equipment are stated at cost, less accumulated depreciation. Renewals and improvements that increase the useful life of plant and equipment are capitalized. Maintenance and repairs are charged to expense as incurred. Net plant and equipment consisted of the following at December 31, 2019 and 2018:

In millions	2019	2018
Land	$ 186	$ 194
Buildings and improvements	1,357	1,368
Machinery and equipment	3,551	3,517
Construction in progress	133	154
Gross plant and equipment	5,227	5,233
Accumulated depreciation	(3,498)	(3,442)
Net plant and equipment	$ 1,729	$ 1,791

The Company’s U.S. businesses primarily compute depreciation on an accelerated basis. The majority of the Company's international businesses compute depreciation on a straight-line basis. The ranges of useful lives used to depreciate plant and equipment are as follows:

Buildings and improvements	5—50 years
Machinery and equipment	3—12 years

Depreciation was $267 million, $272 million and $256 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Goodwill and intangible assets— Goodwill represents the excess cost over fair value of the net assets of acquired businesses. The Company does not amortize goodwill and intangible assets that have indefinite lives. Amortizable intangible assets are being amortized on a straight-line basis over their estimated useful lives of 3 to 20 years.

The Company performs an impairment assessment of goodwill and intangible assets with indefinite lives annually, or more frequently if triggering events occur, based on the estimated fair value of the related reporting unit or intangible asset. 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.

When performing its annual impairment assessment, the Company evaluates the goodwill assigned to each of its reporting units for potential impairment by comparing the estimated fair value of the relevant reporting unit to the carrying value. The Company uses various Level 2 and Level 3 valuation techniques to determine the fair value of its reporting units, including discounting estimated future cash flows based on a detailed cash flow forecast prepared by the relevant reporting unit and market multiples of relevant public companies. If the fair value of a reporting unit is less than its carrying value, an impairment loss, if any, is recorded for the difference between the implied fair value and the carrying value of the reporting unit's goodwill.

The Company's indefinite-lived intangible assets consist of trademarks and brands. The estimated fair values of these intangible assets are determined based on a Level 3 valuation method using a relief-from-royalty income approach derived from internally forecasted revenues of the related products. If the fair value of the trademark or brand is less than its carrying value, an impairment loss is recorded for the difference between the estimated fair value and carrying value of the intangible asset.

Accrued warranties— The Company accrues for product warranties based on historical experience. The changes in accrued warranties for the years ended December 31, 2019, 2018 and 2017 were as follows:

In millions	**2019**	**2018**	**2017**
Beginning balance	$ 45	$ 45	$ 45
Charges	(44)	(49)	(45)
Provision charged to expense	44	50	43
Foreign currency translation	—	(1)	2
Ending balance	$ 45	$ 45	$ 45

New Accounting Pronouncements

Effective January 1, 2018

In May 2014, the Financial Accounting Standards Board (the "FASB") issued authoritative guidance to change the criteria for revenue recognition. The core principle of the new guidance is that revenue should be recognized to depict the transfer of control of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In addition, expanded revenue disclosures are required. The Company's sales arrangements with customers are predominantly short-term in nature and generally provide for transfer of control and risks and rewards of ownership at the time of product shipment or delivery of service. As such, the timing of revenue recognition under both the prior and new guidance is the same for the majority of the Company’s transactions. Effective January 1, 2018, the Company adopted the new revenue recognition guidance under the modified retrospective method and recorded a cumulative-effect adjustment reducing retained earnings by $9 million as of January 1, 2018. Under the modified retrospective method of adoption, prior periods are not restated and the new guidance is applied prospectively to revenue transactions completed on or after January 1, 2018. Given the nature of the Company's revenue transactions, the new guidance had an immaterial impact on the Company's operating revenue, results of operations, and financial position for the year ended December 31, 2018. The Company updated its revenue recognition accounting policy to reflect the requirements of the new guidance and included additional disclosures regarding the Company's revenue transactions. Refer to the Company's operating revenue accounting policy above and Note 3. Operating Revenue for additional information.

In October 2016, the FASB issued authoritative guidance requiring the recognition of the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs rather than when transferred to a third party as required under the prior guidance. The provisions of the new guidance are being applied prospectively to intra-entity asset transfers on or after January 1, 2018 and may result in future tax rate volatility. Upon adoption of the new guidance on January 1, 2018, the Company recorded a cumulative-effect adjustment reducing deferred tax assets and retained earnings by $406 million. For the years ended December 31, 2019 and 2018, the impact of the new guidance on the Company's effective income tax rate was not material.

In February 2018, the FASB issued authoritative guidance which allows for an optional one-time reclassification of the stranded tax effects resulting from the change in the U.S. federal corporate income tax rate under the "Tax Cuts and Jobs Act" (the "Act") from accumulated other comprehensive income ("AOCI") to retained earnings. The guidance was effective January 1, 2019, with early adoption permitted. The Company elected to early adopt this guidance as of January 1, 2018 and to reclassify the stranded tax effects related to the Act, which resulted in an increase of $45 million to both retained earnings and accumulated other comprehensive loss. Refer to Note 13. Stockholders' Equity for additional information.

Effective January 1, 2019

In February 2016, the FASB issued authoritative guidance to change the criteria for recognizing leasing transactions. The primary change under the new guidance is that a lessee is required to recognize a lease liability and corresponding right-of-use asset for its operating leases. The new guidance also requires additional disclosures. Effective January 1, 2019, the Company adopted the new guidance prospectively for all operating lease transactions as of and after the effective date with a noncancellable lease term greater than one year. Upon adoption, the Company recorded a lease liability of $205 million and a corresponding right-of-use asset. The new guidance did not have a material impact on the results of operations or cash flows for the year ended December 31, 2019. Refer to Note 9. Leases for additional information regarding the Company's lease transactions.

In August 2017, the FASB issued authoritative guidance which included targeted improvements to simplify the application of hedge accounting and improve financial reporting of hedging activities. Effective January 1, 2019, the Company adopted the new guidance which did not have a material impact on the Company's results of operations, financial position or cash flows for the year ended December 31, 2019.

Effective January 1, 2020

In June 2016, the FASB issued authoritative guidance which changes the methodology used to measure credit losses for certain financial instruments. Under current guidance, credit loss reserves are estimated based on historical information. The new guidance requires credit loss reserves to reflect the estimated credit losses expected to be incurred over the life of the financial asset. This new guidance is effective for the Company prospectively beginning January 1, 2020 and is not expected to have a material impact on the Company's results of operations or financial position.

In January 2017, the FASB issued authoritative guidance which simplifies the assessment of goodwill for impairment. Under current guidance, when the estimated fair value of a reporting unit is less than its carrying value, the fair value of the goodwill must be determined by valuing the other assets and liabilities of the reporting unit. Under the new guidance, the requirement to determine the fair value of goodwill has been eliminated, and an impairment charge is recognized for the amount that the carrying value of the reporting unit exceeds its fair value. This new guidance is effective for the Company prospectively beginning January 1, 2020 and will be applied by the Company during its annual assessment of goodwill in the third quarter, or earlier if a triggering event occurs. The adoption of this new accounting guidance is not expected to have a material impact on the Company's results of operations or financial position.

(2) Divestitures

The Company routinely reviews its portfolio of businesses relative to its business portfolio criteria and evaluates if further portfolio refinements may be needed. The Company previously communicated its intent to explore options, including potential divestitures, for certain businesses with annual revenues totaling up to $1 billion. As such, the Company may commit to a plan to exit or dispose of certain businesses and present them as held for sale in periods prior to the sale of the business.

In the second quarter of 2019, the Company approved plans to divest six businesses, including two businesses in the Test & Measurement and Electronics segment, one business in the Automotive OEM segment, one business in the Welding segment, and two businesses in the Specialty Products segment. These six businesses were classified as held for sale beginning in the second quarter of 2019. In the fourth quarter of 2019, the Company divested three of the held for sale businesses which included one business in the Test & Measurement and Electronics segment, one business in the Welding segment, and one business in the Specialty Products segment.

For the twelve months ended December 31, 2019, the Company recorded net pre-tax gains on disposal of businesses of $44 million ($30 million after-tax, or $0.09 per diluted share) which was primarily due to the three divestitures of held for sale businesses discussed above. The net pre-tax gain was included in Other income (expense) in the Statement of Income. Operating revenue related to businesses divested in 2019 that was included in the Company's results of operations for the twelve months ended December 31, 2019, 2018 and 2017, was as follows:

In millions	**2019**	**2018**	**2017**
Operating revenue	$ 134	$ 194	$ 202

The operating revenue for the twelve months ended December 31, 2019 of $134 million related to the businesses divested in 2019 included $62 million in the Welding segment, $58 million in the Test & Measurement and Electronics segment, and $14 million in the Specialty Products segment.

As of December 31, 2019, three of the businesses discussed above continued to be held for sale, including one business in the Test & Measurement and Electronics segment, one business in the Automotive OEM segment, and one business in the Specialty Products segment. All of these businesses are expected to be sold within one year. The assets and liabilities related to the held for sale businesses were included in assets and liabilities held for sale in the Statement of Financial Position as of December 31, 2019, as follows:

In millions	
Trade receivables	$ 81
Inventories	28
Net plant and equipment	48
Goodwill and intangible assets	166
Other	28
Total assets held for sale	$ 351
Accounts payable	$ 21
Accrued expenses	17
Other	33
Total liabilities held for sale	$ 71

Operating revenue related to the three businesses held for sale as of December 31, 2019 that was included in the Company's results of operations for the twelve months ended December 31, 2019, 2018 and 2017, was as follows:

In millions	**2019**	**2018**	**2017**
Operating revenue	$ 373	$ 393	$ 397

(3) Operating Revenue

The Company's 84 diversified operating divisions are organized and managed based on similar product categories and end markets, and are reported to senior management as the following seven segments: Automotive OEM; Food Equipment; Test & Measurement and Electronics; Welding; Polymers & Fluids; Construction Products; and Specialty Products. Operating revenue by product category, which is consistent with the Company's segment presentation, for the twelve months ended December 31, 2019, 2018 and 2017 was as follows:

In millions	2019	2018	2017
Automotive OEM	$ 3,063	$ 3,338	$ 3,271
Food Equipment	2,188	2,214	2,123
Test & Measurement and Electronics	2,121	2,171	2,069
Welding	1,638	1,691	1,538
Polymers & Fluids	1,669	1,724	1,724
Construction Products	1,625	1,700	1,672
Specialty Products	1,825	1,951	1,938
Intersegment revenue	(20)	(21)	(21)
Total	$ 14,109	$ 14,768	$ 14,314

Prior to 2018, the Company recognized revenue when persuasive evidence of an arrangement existed, product had shipped and the risks and rewards of ownership had transferred or services had been rendered, the price to the customer was fixed or determinable, and collectability was reasonably assured, which generally occurred at the time of product shipment. Effective January 1, 2018, the Company adopted new revenue recognition guidance. Under this new guidance, operating revenue is recognized at the time a good or service is transferred to a customer and the customer obtains control of that good or receives the service performed. Given the nature of the Company’s revenue transactions, the new guidance had an immaterial impact on the Company's operating revenue, results of operations, and financial position for the twelve months ended December 31, 2019 and 2018. See Note 1. Description of Business and Summary of Significant Accounting Policies for additional information. The following is a description of the product offerings, end markets and typical revenue transactions for each of the Company's seven segments:

Automotive OEM— This segment is a global, niche supplier to top tier OEMs, providing unique innovation to address pain points for sophisticated customers with complex problems. Businesses in this segment produce components and fasteners for automotive-related applications. This segment primarily serves the automotive original equipment manufacturers and tiers market. Products in this segment include:

- plastic and metal components, fasteners and assemblies for automobiles, light trucks and other industrial uses.

Products sold in this segment are primarily manufactured to the customer's specifications and are sold under long-term supply agreements with OEM auto manufacturers and other top tier auto parts suppliers. The Company typically recognizes revenue for products in this segment at the time of shipment. Certain products may be produced utilizing tooling that is owned by the customer that the Company developed and is reimbursed by the customer for the associated cost. In these arrangements, the Company typically retains a contractual right to use the customer-owned tooling for the purpose of fulfilling its obligations under the supply agreement. The Company records reimbursements for the cost of customer-owned tooling as a cost offset rather than operating revenue as tooling is not considered a product offering central to the Company's operations.

Food Equipment— This segment is a highly focused and branded industry leader in commercial food equipment differentiated by innovation and integrated service offerings. This segment primarily serves the food service, food institutional/restaurant and food retail markets. Products in this segment include:

- warewashing equipment;
- cooking equipment, including ovens, ranges and broilers;
- refrigeration equipment, including refrigerators, freezers and prep tables;
- food processing equipment, including slicers, mixers and scales;
- kitchen exhaust, ventilation and pollution control systems; and
- food equipment service, maintenance and repair.

Revenue for equipment sold in this segment is typically recognized at the time of product shipment. In limited circumstances involving installation of equipment and customer acceptance, the Company may recognize revenue upon completion of installation and acceptance by the customer. Annual service contracts are typically sold separate from equipment and the related revenue is recognized on a straight-line basis over the annual service period. Operating revenue for on-demand service repairs and parts is recorded upon completion and customer acceptance of the work performed.

Test & Measurement and Electronics— This segment is a branded and innovative producer of test and measurement and electronic manufacturing and maintenance, repair, and operations, or "MRO" solutions that improve efficiency and quality for customers in diverse end markets. Businesses in this segment produce equipment, consumables, and related software for testing and measuring of materials and structures, as well as equipment and consumables used in the production of electronic subassemblies and microelectronics. This segment primarily serves the electronics, general industrial, automotive original equipment manufacturers and tiers, industrial capital goods, energy and consumer durables markets. Products in this segment include:

- equipment, consumables, and related software for testing and measuring of materials, structures, gases and fluids;
- electronic assembly equipment;
- electronic components and component packaging;
- static control equipment and consumables used for contamination control in clean room environments; and
- pressure sensitive adhesives and components for electronics, medical, transportation and telecommunications applications.

Revenue for products sold in this segment is typically recognized at the time of shipment. In limited circumstances where significant obligations to the customer are unfulfilled at the time of shipment, typically involving installation of equipment and customer acceptance, revenue recognition is deferred until such obligations have been completed.

Welding— This segment is a branded value-added equipment and specialty consumable manufacturer with innovative and leading technology. Businesses in this segment produce arc welding equipment, consumables and accessories for a wide array of industrial and commercial applications. This segment primarily serves the general industrial market, which includes fabrication, shipbuilding and other general industrial markets, and energy, construction, MRO, automotive original equipment manufacturers and tiers, and industrial capital goods markets. Products in this segment include:

- arc welding equipment; and
- metal arc welding consumables and related accessories.

Products in this segment are primarily manufactured to meet anticipated customer demand. The Company typically recognizes revenue for these products at the time of product shipment.

Polymers & Fluids— This segment is a branded supplier to niche markets that require value-added, differentiated products. Businesses in this segment produce engineered adhesives, sealants, lubrication and cutting fluids, and fluids and polymers for auto aftermarket maintenance and appearance. This segment primarily serves the automotive aftermarket, general industrial, MRO and construction markets. Products in this segment include:

- adhesives for industrial, construction and consumer purposes;
- chemical fluids which clean or add lubrication to machines;
- epoxy and resin-based coating products for industrial applications;
- hand wipes and cleaners for industrial applications;
- fluids, polymers and other supplies for auto aftermarket maintenance and appearance;
- fillers and putties for auto body repair; and
- polyester coatings and patch and repair products for the marine industry.

Products in this segment are primarily manufactured to meet anticipated customer demand. The Company typically recognizes revenue for these products at the time of product shipment.

Construction Products— This segment is a branded supplier of innovative engineered fastening systems and solutions. This segment primarily serves the residential construction, renovation/remodel and commercial construction markets. Products in this segment include:

- fasteners and related fastening tools for wood and metal applications;

- anchors, fasteners and related tools for concrete applications;
- metal plate truss components and related equipment and software; and
- packaged hardware, fasteners, anchors and other products for retail.

Products in this segment are primarily manufactured to meet anticipated customer demand. The Company typically recognizes revenue for these products at the time of product shipment.

Specialty Products— This segment is focused on diversified niche market opportunities with substantial patent protection producing beverage packaging equipment and consumables, product coding and marking equipment and consumables, and appliance components and fasteners. This segment primarily serves the food and beverage, general industrial, consumer durables, industrial capital goods and printing and publishing markets. Products in this segment include:

- line integration, conveyor systems and line automation for the food and beverage industries;
- plastic consumables that multi-pack cans and bottles and related equipment;
- foil, film and related equipment used to decorate consumer products;
- product coding and marking equipment and related consumables;
- plastic and metal closures and components for appliances;
- airport ground support equipment; and
- components for medical devices.

Products in this segment are primarily manufactured to meet anticipated customer demand. The Company typically recognizes revenue for these products at the time of product shipment. In limited circumstances where significant obligations to the customer are unfulfilled at the time of shipment, typically involving installation of equipment and customer acceptance, revenue is recognized when such obligations have been completed.

(4) Legal Settlement

In the second quarter of 2017, the Company entered into a $95 million confidential settlement agreement to resolve a litigation matter. Based on the terms of the agreement, the Company received the settlement within 120 days of the execution of the agreement. The receipt of the settlement resulted in a favorable pre-tax impact of $15 million in the second quarter of 2017 and $80 million in the third quarter of 2017, which were included in operating income.

(5) Other Income (Expense)

Other income (expense) for the twelve months ended December 31, 2019, 2018 and 2017 consisted of the following:

In millions	2019	2018	2017
Gain (loss) on disposal of operations and affiliates	$ 44	$ (2)	$ 1
Interest income	29	35	45
Other net periodic benefit income	24	20	9
Income (loss) from investments	15	9	16
Equity income in Wilsonart	—	—	—
Gain (loss) on foreign currency transactions, net	(10)	(1)	(25)
Other, net	5	6	(1)
Total other income (expense)	$ 107	$ 67	$ 45

Refer to Note 2. Divestitures for further information regarding the Gain (loss) on disposal of operations and affiliates of $44 million for the twelve months ended December 31, 2019.

In the fourth quarter of 2012, the Company divested a 51% majority interest in its former Decorative Surfaces segment to certain funds managed by Clayton, Dubilier & Rice, LLC ("CD&R"). As a result of the transaction, the Company owns common units (the "Common Units") of Wilsonart International Holdings LLC ("Wilsonart") initially representing approximately 49% (on an as-converted basis) of the total outstanding equity. CD&R owns cumulative convertible participating preferred units (the "Preferred Units") of Wilsonart representing approximately 51% (on an as-converted basis) of the total outstanding equity. The Preferred Units rank senior to the Common Units as to dividends and liquidation preference, and accrue dividends at a rate of 10% per annum. The ownership interest in Wilsonart is reported using the equity method of accounting. The Company's proportionate share in income (loss) of Wilsonart is reported in Other income (expense) in the Statement of Income. As the Company's investment in Wilsonart is structured as a partnership for U.S. tax purposes, U.S. taxes are recorded separately from the equity investment. In 2016, the Company received a $167 million dividend distribution from Wilsonart which exceeded the Company's equity investment balance and resulted in a $54 million pre-tax gain in 2016. As a result of the dividend distribution, the equity investment balance in Wilsonart was reduced to zero and any subsequent equity investment income will not be recognized until the gain is recaptured.

(6) Income Taxes

On December 22, 2017, the "Tax Cuts and Jobs Act" (the "Act") was enacted in the United States. The provisions of the Act significantly revised the U.S. corporate income tax rules. In the fourth quarter of 2017, the Company recorded a one-time additional income tax expense of $658 million related to the enactment of the Act. The more significant tax law changes resulting from the Act and related impacts to the Company are as follows:

- **A one-time repatriation tax on the deemed repatriation of post-1986 undistributed earnings of foreign subsidiaries.** As a result of this one-time deemed repatriation, the Company recorded a one-time additional income tax expense of $676 million during the fourth quarter of 2017. A portion of the resulting income taxes payable can be paid in installments over eight years. The noncurrent income taxes payable related to the one-time repatriation tax was $462 million and $495 million as of December 31, 2019 and 2018, respectively. Additionally, as a result of the one-time repatriation provisions of the Act, the Company recorded additional foreign withholding taxes of $53 million in the fourth quarter of 2017 related to the expected repatriation of foreign held cash and equivalents.

- **A reduction in the U.S. corporate federal tax rate from a maximum of 35% to a flat rate of 21% beginning in 2018.** Although the lower tax rate took effect in 2018, deferred tax assets and liabilities should be measured using the enacted tax rate expected to apply in the years in which they are expected to be settled. In the fourth quarter of 2017, the Company recorded a one-time net income tax benefit of $82 million as a result of the revaluation of the Company's deferred tax assets and liabilities to reflect the impact of lower future U.S. corporate tax rates.

- **Deductibility of certain executive compensation.** In the fourth quarter of 2017, the Company recorded a one-time write-off of deferred tax assets of $11 million related to the non-deductibility of certain performance-based compensation.

At December 31, 2017, the Company had not completed the accounting for the tax effects of enactment of the Act; however, the Company made a reasonable estimate which was recorded in the fourth quarter of 2017. During 2018, the Company revised its initial estimates which did not result in material changes to the provisional amounts recorded at December 31, 2017, or the effective tax rate for 2018. As of December 31, 2018, the Company had completed its accounting related to the tax effects of enactment of the Act. The Company's ongoing accounting for the tax effects of the Act are based on the Company's current understanding of the changes in the tax law under the Act, but may be impacted due to issuance of final regulations or further clarification of the tax law.

Provision for income taxes— The components of the provision for income taxes for the twelve months ended December 31, 2019, 2018 and 2017 were as follows:

In millions	**2019**	**2018**	**2017**
U.S. federal income taxes:			
Current	$ 356	$ 373	$ 1,117
Deferred	(26)	(15)	(10)
Total U.S. federal income taxes	330	358	1,107
Foreign income taxes:			
Current	302	358	296
Deferred	53	49	102
Total foreign income taxes	355	407	398
State income taxes:			
Current	77	66	106
Deferred	5	—	(28)
Total state income taxes	82	66	78
Total provision for income taxes	$ 767	$ 831	$ 1,583

Income before taxes for domestic and foreign operations for the twelve months ended December 31, 2019, 2018 and 2017 was as follows:

In millions	**2019**	**2018**	**2017**
Domestic	$ 1,774	$ 1,774	$ 1,806
Foreign	1,514	1,620	1,464
Total income before taxes	$ 3,288	$ 3,394	$ 3,270

The reconciliation between the U.S. federal statutory tax rate and the effective tax rate for the twelve months ended December 31, 2019, 2018 and 2017 was as follows:

	2019	**2018**	**2017**
U.S. federal statutory tax rate	21.0 %	21.0 %	35.0 %
U.S. tax effect of foreign earnings	1.1	1.5	0.5
Tax effect of U.S. federal tax law change	—	(0.1)	20.1
State income taxes, net of U.S. federal tax benefit	1.7	1.6	1.2
Differences between U.S. federal statutory and foreign tax rates	2.0	2.1	(3.5)
Nontaxable foreign interest income	(1.4)	(1.7)	(1.7)
Tax effect of foreign dividends	0.2	1.0	0.4
Tax relief for U.S. manufacturers	—	—	(1.4)
Excess tax benefits from stock-based compensation	(0.9)	(0.3)	(1.5)
Other, net	(0.4)	(0.6)	(0.7)
Effective tax rate	23.3 %	24.5 %	48.4 %

The Company's effective tax rate for the twelve months ended December 31, 2019, 2018 and 2017 was 23.3%, 24.5% and 48.4%, respectively. The 2019 and 2018 effective tax rates benefited from the lower U.S. corporate federal tax rate and discrete items. The 2019 effective tax rate benefited from a discrete tax benefit of $21 million in the third quarter for the U.S. federal provision to return adjustment resulting primarily from changes in estimates related to the Act. The 2018 effective tax rate benefited from a discrete tax benefit of $37 million in the third quarter related to the release of a valuation allowance against the deferred tax assets of a non-U.S. subsidiary, which was partially offset by a discrete tax charge of $22 million in the third quarter related to foreign tax credits. Included in the effective tax rate for 2017 was a one-time additional income tax expense of $658 million related to the enactment of the Act. Additionally, the effective tax rates for 2019, 2018 and 2017 included $28 million, $10 million and $50 million, respectively, related to excess tax benefits from stock-based compensation.

Prior to the Act, deferred U.S. federal and state income taxes and foreign withholding taxes had not been provided on substantially all undistributed earnings of international subsidiaries as these earnings were considered permanently invested. As part of the one-time deemed repatriation provisions of the Act, the Company provided for U.S. tax on substantially all undistributed earnings of its foreign subsidiaries as of December 31, 2017. Upon repatriation of earnings to the U.S., the Company may be subject to foreign withholding taxes. The accrual for foreign withholding taxes related to the expected repatriation of foreign held cash and equivalents as of December 31, 2019 and 2018 was $62 million and $71 million, respectively.

Deferred foreign withholding taxes have not been provided on undistributed earnings considered permanently invested. As of December 31, 2019, undistributed earnings of certain international subsidiaries that are considered permanently invested were approximately $5.7 billion. Determination of the related deferred tax liability is not practicable because of the complexities associated with the hypothetical calculation.

Deferred tax assets and liabilities— The components of deferred income tax assets and liabilities as of December 31, 2019 and 2018 were as follows:

	2019		2018	
In millions	**Asset**	**Liability**	**Asset**	**Liability**
Goodwill and intangible assets	$ 202	$ (453)	$ 194	$ (484)
Inventory reserves, capitalized tax cost and LIFO inventory	29	(3)	30	(3)
Investments	16	(158)	19	(171)
Plant and equipment	17	(74)	17	(72)
Accrued expenses and reserves	42	—	36	—
Employee benefit accruals	176	—	186	—
Foreign tax credit carryforwards	7	—	8	—
Net operating loss carryforwards	419	—	451	—
Capital loss carryforwards	80	—	89	—
Allowances for uncollectible accounts	9	—	10	—
Pension liabilities	—	(15)	—	(19)
Unrealized loss (gain) on foreign debt instruments	—	(57)	—	(45)
Operating leases	45	(45)	—	—
Other	32	(13)	32	(13)
Gross deferred income tax assets (liabilities)	1,074	(818)	1,072	(807)
Valuation allowances	(408)	—	(418)	—
Total deferred income tax assets (liabilities)	$ 666	$ (818)	$ 654	$ (807)

The valuation allowances recorded as of December 31, 2019 and 2018 related primarily to certain net operating loss carryforwards, capital loss carryforwards and foreign tax credit carryforwards. As of December 31, 2019, the Company had utilized all realizable foreign tax credit carryforwards.

As of December 31, 2019, the Company had net operating loss carryforwards available to offset future taxable income in the U.S. and certain foreign jurisdictions, which expire as follows:

In millions	Gross Carryforwards Related to Net Operating Losses
2020	$ 86
2021	80
2022	25
2023	7
2024	49
2025-2045	117
Do not expire	1,378
Total gross carryforwards related to net operating losses	$ 1,742

Unrecognized tax benefits— The changes in the amount of unrecognized tax benefits for the twelve months ended December 31, 2019, 2018 and 2017 were as follows:

In millions	2019	2018	2017
Beginning balance	$ 297	$ 285	$ 210
Additions based on tax positions related to the current year	6	3	42
Additions for tax positions of prior years	13	49	100
Reductions for tax positions of prior years	(14)	(31)	(24)
Settlements	(5)	(5)	(53)
Foreign currency translation	(1)	(4)	10
Ending balance	$ 296	$ 297	$ 285

Included in the balance as of December 31, 2019 were approximately $267 million of unrecognized tax benefits that, if recognized, would impact the Company's effective tax rate.

Settlements during 2017 primarily related to the Company effectively settling with the German Fiscal Authority on issues identified during its 2009-2011 audit, which primarily related to intercompany transactions.

The Company and its subsidiaries file tax returns in the U.S. and various state, local and foreign jurisdictions. These tax returns are routinely audited by the tax authorities in these jurisdictions including the Internal Revenue Service, Her Majesty's Revenue and Customs, German Fiscal Authority, French Fiscal Authority, and Australian Tax Office, and a number of these audits are currently ongoing, which may increase the amount of the unrecognized tax benefits in future periods. Due to the ongoing audits, the Company believes it is reasonably possible that within the next twelve months the amount of the Company's unrecognized tax benefits may be decreased by approximately $56 million related predominantly to various intercompany transactions. The Company has recorded its best estimate of the potential exposure for these issues. The following table summarizes the open tax years for the Company's major jurisdictions:

Jurisdiction	Open Tax Years
United States – Federal	2016-2019
United Kingdom	2017-2019
Germany	2012-2019
France	2016-2019
Australia	2013-2019

The Company recognizes interest and penalties related to income tax matters in income tax expense. The accrual for interest and penalties as of December 31, 2019 and 2018 was $19 million and $25 million, respectively.

(7) Net Income Per Share

Net income per basic share is computed by dividing net income by the weighted-average number of shares outstanding for the period. Net income per diluted share is computed by dividing net income by the weighted-average number of shares assuming dilution for stock options and restricted stock units. Dilutive shares reflect the potential additional shares that would be outstanding if the dilutive stock options outstanding were exercised and the unvested restricted stock units vested during the period. The computation of net income per share for the twelve months ended December 31, 2019, 2018 and 2017 was as follows:

In millions except per share amounts	2019	2018	2017
Net Income	$ 2,521	$ 2,563	$ 1,687
Net income per share—Basic:			
Weighted-average common shares	323.9	335.0	344.1
Net income per share—Basic	$ 7.78	$ 7.65	$ 4.90
Net income per share—Diluted:			
Weighted-average common shares	323.9	335.0	344.1
Effect of dilutive stock options and restricted stock units	1.7	2.1	2.7
Weighted-average common shares assuming dilution	325.6	337.1	346.8
Net income per share—Diluted	$ 7.74	$ 7.60	$ 4.86

Options that were considered antidilutive were not included in the computation of diluted net income per share. There were 0.9 million and 0.5 million antidilutive options outstanding as of December 31, 2019 and 2018, respectively. There were no antidilutive options outstanding as of December 31, 2017.

(8) Goodwill and Intangible Assets

The changes in the carrying amount of goodwill for the twelve months ended December 31, 2019 and 2018 were as follows:

In millions	Automotive OEM	Test & Measurement and Electronics	Food Equipment	Polymers & Fluids	Welding	Construction Products	Specialty Products	Total
Balance, December 31, 2017	$ 488	$ 1,372	$ 269	$ 919	$ 272	$ 530	$ 902	$ 4,752
2018 activity:								
Foreign currency translation	(12)	(20)	(10)	(30)	(9)	(17)	(21)	(119)
Balance, December 31, 2018	476	1,352	259	889	263	513	881	4,633
2019 activity:								
Acquisitions / (divestitures)	—	2	—	—	—	—	(1)	1
Transfer to assets held for sale	(5)	(109)	—	—	(4)	—	(8)	(126)
Foreign currency translation	(5)	—	(3)	(2)	(1)	(1)	(4)	(16)
Balance, December 31, 2019	$ 466	$ 1,245	$ 256	$ 887	$ 258	$ 512	$ 868	$ 4,492
Cumulative goodwill impairment charges, December 31, 2019	$ 24	$ 83	$ 60	$ 15	$ 5	$ 7	$ 46	$ 240

Intangible assets as of December 31, 2019 and 2018 were as follows:

	2019			2018		
In millions	**Cost**	**Accumulated Amortization**	**Net**	**Cost**	**Accumulated Amortization**	**Net**
Amortizable intangible assets:						
Customer lists and relationships	$ 1,530	$ (1,195)	$ 335	$ 1,747	$ (1,282)	$ 465
Trademarks and brands	694	(434)	260	759	(435)	324
Patents and proprietary technology	581	(501)	80	621	(506)	115
Other	449	(433)	16	478	(458)	20
Total amortizable intangible assets	3,254	(2,563)	691	3,605	(2,681)	924
Indefinite-lived intangible assets:						
Trademarks and brands	160	—	160	160	—	160
Total intangible assets	$ 3,414	$ (2,563)	$ 851	$ 3,765	$ (2,681)	$ 1,084

The Company performed its annual impairment assessment of goodwill and indefinite-lived intangible assets in the third quarter of 2019, 2018 and 2017. There were no impairment charges as a result of these assessments.

For the twelve months ended December 31, 2019, 2018 and 2017, amortization expense of intangible assets was $159 million, $189 million and $206 million, respectively.

As of December 31, 2019, the estimated future amortization expense of intangible assets for the twelve months ending December 31 was as follows:

In millions	
2020	$ 135
2021	117
2022	104
2023	85
2024	68

(9) Leases

Effective January 1, 2019, the Company adopted new lease accounting guidance which requires the recognition of a lease liability and corresponding right-of-use asset for all operating leases with a noncancellable lease term of greater than one year. The new guidance did not change the recognition of rental expense for operating leases which is recognized on a straight-line basis over the noncancellable lease term based on the minimum lease payments at lease inception. Changes in rent subsequent to commencement that were not included in minimum lease payments at inception are recognized as variable rent in the period incurred.

The Company’s lease transactions are primarily for the use of facilities, vehicles and equipment under operating lease arrangements. Total rental expense for operating leases for the twelve months ended December 31, 2019, 2018 and 2017 was $113 million, $124 million and $120 million, respectively. Total rental expense for 2019 included $69 million related to capitalized operating leases and $44 million related to short-term operating leases and variable lease payments. Short-term operating leases have original terms of one year or less, or can be terminated at the Company's option with a short notice period and without significant penalty, and are not capitalized. The right-of-use asset related to operating leases was $206 million as of December 31, 2019 and was included in Other assets. As of December 31, 2019, the current portion of the lease liability for operating leases was $51 million and was included in Accrued expenses, and the long-term portion was $128 million and was included in Other liabilities.

As of December 31, 2019, future maturities of operating lease liabilities for the twelve months ending December 31 were as follows:

In millions		
2020	$	55
2021		42
2022		32
2023		23
2024		18
2025 and future years		21
Total future minimum lease payments		191
Less: Imputed interest		(12)
Operating lease liability		179
Less: Current portion of operating lease liability		51
Long-term portion of operating lease liability	$	128

As of December 31, 2019, operating leases included in the lease liability had a weighted average remaining lease term of 4.6 years and a weighted average discount rate of 2.59% based on the incremental borrowing rate of the Company and its subsidiaries. During the twelve months ended December 31, 2019, cash paid related to maturities of operating lease liabilities was $70 million and operating lease right-of-use assets obtained in exchange for operating lease liabilities was $50 million.

As of December 31, 2018, future minimum lease payments under operating leases with noncancellable terms in excess of one year for the twelve months ending December 31 were as follows:

In millions		
2019	$	67
2020		48
2021		32
2022		24
2023		18
2024 and future years		34
Total future minimum lease payments	$	223

(10) Debt

Short-term debt— Short-term debt represents obligations with a maturity date of one year or less and is stated at cost which approximates fair value. Short-term debt also includes current maturities of long-term debt. Short-term debt as of December 31, 2019 and 2018 consisted of the following:

In millions		2019		2018
Current maturities of long-term debt	$	4	$	1,350
Bank overdrafts		—		1
Total short-term debt	$	4	$	1,351

As of December 31, 2019, short-term debt included $4 million related to the 4.88% notes due through December 31, 2020. As of December 31, 2018, short-term debt included $650 million related to the 1.95% notes due March 1, 2019 and $700 million related to the 6.25% notes due April 1, 2019, both of which were repaid on the due date. There was no commercial paper outstanding as of December 31, 2019 and 2018.

The Company may issue commercial paper to fund general corporate needs, share repurchases, and small and medium-sized acquisitions. During the third quarter of 2019, the Company entered into a $2.5 billion, five-year line of credit agreement with a termination date of September 27, 2024 to support the potential issuances of commercial paper. This agreement replaced the existing $2.5 billion line of credit agreement with a termination date of May 9, 2021. No amounts were outstanding under the line of credit agreement as of December 31, 2019. The Company was also in compliance with the financial covenants of the line of credit agreement as of December 31, 2019, which included a minimum interest coverage ratio. The weighted-average interest rate on commercial paper was 2.5% and 1.7% for the twelve months ended December 31, 2019 and 2018, respectively.

As of December 31, 2019, the Company had unused capacity of approximately $206 million under international debt facilities.

Long-term debt— Long-term debt represents obligations with a maturity date greater than one year, and excludes current maturities that have been reclassified to short-term debt. Long-term debt at carrying value and fair value as of December 31, 2019 and 2018 consisted of the following:

		2019		2018	
In millions	**Effective Interest Rate**	**Carrying Value**	**Fair Value**	**Carrying Value**	**Fair Value**
1.95% notes due March 1, 2019	1.98%	$ —	$ —	$ 650	$ 649
6.25% notes due April 1, 2019	6.25%	—	—	700	706
4.88% notes due thru December 31, 2020	4.96%	4	4	4	4
3.375% notes due September 15, 2021	3.43%	349	358	349	354
1.75% Euro notes due May 20, 2022	1.86%	558	584	570	603
1.25% Euro notes due May 22, 2023	1.35%	558	584	569	596
3.50% notes due March 1, 2024	3.54%	697	742	696	712
0.25% Euro notes due December 5, 2024	0.31%	668	677	—	—
2.65% notes due November 15, 2026	2.69%	993	1,032	993	933
0.625% Euro notes due December 5, 2027	0.71%	554	570	—	—
2.125% Euro notes due May 22, 2030	2.18%	555	644	567	620
1.00% Euro notes due June 5, 2031	1.09%	552	580	—	—
3.00% Euro notes due May 19, 2034	3.13%	548	724	560	678
4.875% notes due September 15, 2041	4.97%	637	829	636	719
3.90% notes due September 1, 2042	3.96%	1,082	1,283	1,081	1,087
Other borrowings		3	3	4	4
Total		$ 7,758	$ 8,614	$ 7,379	$ 7,665
Less: Current maturities of long-term debt		(4)		(1,350)	
Total long-term debt		$ 7,754		$ 6,029	

The approximate fair values of the Company’s long-term debt, including current maturities, were based on a valuation model using Level 2 observable inputs, which included market rates for comparable instruments for the respective periods.

In 2005, the Company issued $54 million of 4.88% notes due through December 31, 2020 at 100% of face value.

In 2009, the Company issued $700 million of 6.25% redeemable notes due April 1, 2019 at 99.98% of face value, which were repaid on the due date.

In 2011, the Company issued $350 million of 3.375% notes due September 15, 2021 at 99.552% of face value and $650 million of 4.875% notes due September 15, 2041 at 98.539% of face value.

In 2012, the Company issued $1.1 billion of 3.9% notes due September 1, 2042 at 99.038% of face value.

In February 2014, the Company issued $650 million of 1.95% notes due March 1, 2019 at 99.871% of face value and $700 million of 3.5% notes due March 1, 2024 at 99.648% of face value. The $650 million of 1.95% notes due March 1, 2019 were repaid on the due date.

In May 2014, the Company issued €500 million of 1.75% Euro notes due May 20, 2022 at 99.16% of face value and €500 million of 3.0% Euro notes due May 19, 2034 at 98.089% of face value.

In May 2015, the Company issued €500 million of 1.25% Euro notes due May 22, 2023 at 99.239% of face value and €500 million of 2.125% Euro notes due May 22, 2030 at 99.303% of face value. Net proceeds from the May 2015 debt issuances were used to repay commercial paper and for general corporate purposes.

In November 2016, the Company issued $1.0 billion of 2.65% notes due November 15, 2026 at 99.685% of face value. Net proceeds from the November 2016 debt issuance were used to repay commercial paper and for general corporate purposes.

In June 2019, the Company issued €600 million of 0.25% Euro notes due December 5, 2024 at 99.662% of face value, €500 million of 0.625% Euro notes due December 5, 2027 at 99.343% of face value and €500 million of 1.00% Euro notes due June 5, 2031 at 98.982% of face value. Net proceeds from the issuances were used to repay commercial paper and for general corporate purposes.

The Company designated the €1.0 billion of Euro notes issued in May 2014, the €1.0 billion of Euro notes issued in May 2015 and the €1.6 billion of Euro notes issued in June 2019 as hedges of a portion of its net investment in Euro-denominated foreign operations to reduce foreign currency risk associated with the investment in these operations. Refer to Note 13. Stockholders' Equity for additional information regarding the net investment hedge.

All of the Company's notes listed above represent senior unsecured obligations ranking equal in right of payment. As of December 31, 2019, scheduled future maturities of long-term debt, including current maturities of long-term debt, for the twelve months ending December 31 were as follows:

In millions		
2020	$	4
2021		349
2022		558
2023		558
2024		1,365
2025 and future years		4,924
Total	$	7,758

(11) Pension and Other Postretirement Benefits

The Company has both funded and unfunded defined benefit pension and other postretirement benefit plans, predominately in the U.S. The U.S. primary pension plan provides benefits based on years of service and final average salary. The U.S. primary postretirement health care plan is contributory with the participants’ contributions adjusted annually. The U.S. primary postretirement life insurance plan is noncontributory. Beginning January 1, 2007, the U.S. primary pension and other postretirement benefit plans were closed to new participants. Newly hired employees and employees from acquired businesses that are not participating in these plans are eligible for additional Company contributions under the existing U.S. primary defined contribution retirement plans. The Company’s expense related to defined contribution plans was $86 million in 2019, $82 million in 2018, and $79 million in 2017. In addition to the U.S. plans, the Company also has defined benefit pension plans in certain other countries, mainly the United Kingdom, Canada, Germany and Switzerland.

Summarized information regarding net periodic benefit cost included in the Statement of Income related to the Company's significant defined benefit pension and other postretirement benefit plans for the twelve months ended December 31, 2019, 2018 and 2017 is as follows:

	Pension			Other Postretirement Benefits		
In millions	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**
Components of net periodic benefit cost:						
Service cost	$ 52	$ 60	$ 63	$ 7	$ 8	$ 9
Interest cost	78	72	72	20	18	19
Expected return on plan assets	(121)	(126)	(133)	(22)	(25)	(23)
Amortization of actuarial (gain) loss	21	43	57	(1)	(2)	(1)
Amortization of prior service cost	1	—	—	—	—	—
Total net periodic benefit cost	$ 31	$ 49	$ 59	$ 4	$ (1)	$ 4

The service cost component of net periodic benefit cost is presented within Cost of revenue and Selling, administrative, and research and development expenses in the Statement of Income while the other components of net periodic benefit cost are presented within Other income (expense).

The Company used the updated mortality improvement scales from the Society of Actuaries, MP-2019 and MP-2018, to measure its U.S. pension and other postretirement obligations as of December 31, 2019 and 2018, respectively, which did not have a significant impact in either period.

The following tables provide a rollforward of the plan benefit obligations, plan assets and a reconciliation of funded status for the twelve months ended December 31, 2019 and 2018:

	Pension		Other Postretirement Benefits	
In millions	**2019**	**2018**	**2019**	**2018**
Change in benefit obligation:				
Benefit obligation at January 1	$ 2,429	$ 2,661	$ 511	$ 546
Service cost	52	60	7	8
Interest cost	78	72	20	18
Plan participants’ contributions	2	2	12	12
Amendments	—	9	—	—
Actuarial (gain) loss	295	(162)	61	(35)
Transfer to liabilities held for sale	(2)	—	—	—
Benefits paid	(156)	(165)	(42)	(40)
Medicare subsidy received	—	—	1	2
Liabilities from other immaterial plans	—	5	—	—
Foreign currency translation	33	(53)	—	—
Benefit obligation at December 31	$ 2,731	$ 2,429	$ 570	$ 511

In millions	Pension 2019	Pension 2018	Other Postretirement Benefits 2019	Other Postretirement Benefits 2018
Change in plan assets:				
Fair value of plan assets at January 1	$ 2,550	$ 2,832	$ 333	$ 373
Actual return on plan assets	379	(82)	66	(19)
Company contributions	27	23	5	7
Plan participants’ contributions	2	2	12	12
Benefits paid	(156)	(165)	(42)	(40)
Foreign currency translation	42	(60)	—	—
Fair value of plan assets at December 31	$ 2,844	$ 2,550	$ 374	$ 333
Funded status	$ 113	$ 121	$ (196)	$ (178)
Other immaterial plans	(42)	(46)	(5)	(5)
Net asset (liability) at December 31	$ 71	$ 75	$ (201)	$ (183)
The amounts recognized in the Statement of Financial Position as of December 31 consist of:				
Other assets	$ 297	$ 290	$ —	$ —
Accrued expenses	(11)	(12)	(3)	(4)
Other noncurrent liabilities	(215)	(203)	(198)	(179)
Net asset (liability) at end of year	$ 71	$ 75	$ (201)	$ (183)
The pre-tax amounts recognized in accumulated other comprehensive income consist of:				
Net actuarial (gain) loss	$ 568	$ 552	$ (35)	$ (53)
Prior service cost	7	8	—	—
	$ 575	$ 560	$ (35)	$ (53)
Accumulated benefit obligation	$ 2,589	$ 2,299		
Plans with accumulated benefit obligation in excess of plan assets as of December 31:				
Projected benefit obligation	$ 194	$ 176		
Accumulated benefit obligation	$ 188	$ 170		
Fair value of plan assets	$ 29	$ 28		

Assumptions— The weighted-average assumptions used in the valuations of pension and other postretirement benefits were as follows:

	Pension 2019	Pension 2018	Pension 2017	Other Postretirement Benefits 2019	Other Postretirement Benefits 2018	Other Postretirement Benefits 2017
Assumptions used to determine benefit obligations as of December 31:						
Discount rate	2.61%	3.66%	3.12%	3.29%	4.40%	3.72%
Rate of compensation increases	3.44%	3.52%	3.54%			
Assumptions used to determine net periodic benefit cost for the twelve months ended December 31:						
Discount rate	3.66%	3.12%	3.41%	4.40%	3.72%	4.30%
Expected return on plan assets	4.71%	4.77%	5.53%	6.70%	6.80%	6.80%
Rate of compensation increases	3.52%	3.54%	3.77%			

The expected long-term rates of return for pension and other postretirement benefit plans were developed using historical asset class returns while factoring in current market conditions such as inflation, interest rates and asset class performance.

The discount rate reflects the current rate at which the associated liabilities could theoretically be effectively settled at the end of the year. In estimating this rate, the Company looks at rates of return on high-quality fixed income investments, with similar duration to the liabilities in the plan. The Company estimates the service and interest cost components of net periodic benefit cost by applying specific spot rates along the yield curve to the projected cash flows rather than a single weighted-average rate.

Assumed health care cost trend rates have an effect on the amounts reported for the postretirement health care benefit plans. The assumed health care cost trend rates used to determine the postretirement benefit obligation as of December 31 were as follows:

	2019	2018	2017
Health care cost trend rate assumed for the next year	6.70%	7.00%	6.25%
Ultimate trend rate	4.50%	4.50%	4.50%
Year the rate reaches the ultimate trend rate	2026	2026	2025

A one percentage-point change in assumed health care cost trend rates would have the following impact:

In millions	1 Percentage-Point Increase	1 Percentage-Point Decrease
Change in service cost and interest cost for 2019	$ —	$ (1)
Change in postretirement benefit obligation at December 31, 2019	$ 2	$ (3)

Plan assets— The Company’s overall investment strategy for the assets in the pension funds is to achieve a balance between the goals of growing plan assets and keeping risk at a reasonable level over a long-term investment horizon. In order to reduce unnecessary risk, the pension funds are diversified across several asset classes, securities and investment managers. The target allocations for plan assets are 15% to 25% equity investments, 75% to 85% fixed income investments and 0% to 10% in other types of investments. The Company does not use derivatives for the purpose of speculation, leverage, circumventing investment guidelines or taking risks that are inconsistent with specified guidelines.

The assets in the Company’s postretirement health care plan are primarily invested in life insurance policies. The Company’s overall investment strategy for the assets in the postretirement health care fund is to invest in assets that provide a reasonable tax exempt rate of return while preserving capital.

The following tables present the fair value of the Company's pension and other postretirement benefit plan assets as of December 31, 2019 and 2018, by asset category and valuation methodology. Level 1 assets are valued using unadjusted quoted prices for identical assets in active markets. Level 2 assets are valued using quoted prices or other observable inputs for similar assets. Level 3 assets are valued using unobservable inputs, but reflect the assumptions market participants would be expected to use in pricing the assets. Each financial instrument's categorization is based on the lowest level of input that is significant to the fair value measurement.

	2019			
In millions	**Total**	**Level 1**	**Level 2**	**Level 3**
Pension Plan Assets:				
Cash and equivalents	$ 28	$ 27	$ 1	$ —
Fixed income securities:				
Government securities	355	—	355	—
Corporate debt securities	969	—	969	—
Investment contracts with insurance companies	1	—	—	1
Commingled funds:				
Collective trust funds	1,460			
Partnerships/private equity interests	27			
Other	4	—	4	—
Total fair value of pension plan assets	$ 2,844	$ 27	$ 1,329	$ 1
Other Postretirement Benefit Plan Assets:				
Life insurance policies	$ 374			
Total fair value of other postretirement benefit plan assets	$ 374	$ —	$ —	$ —

	2018			
In millions	**Total**	**Level 1**	**Level 2**	**Level 3**
Pension Plan Assets:				
Cash and equivalents	$ 28	$ 27	$ 1	$ —
Fixed income securities:				
Government securities	371	—	371	—
Corporate debt securities	853	—	853	—
Investment contracts with insurance companies	1	—	—	1
Commingled funds:				
Collective trust funds	1,257			
Partnerships/private equity interests	36			
Other	4	—	4	—
Total fair value of pension plan assets	$ 2,550	$ 27	$ 1,229	$ 1
Other Postretirement Benefit Plan Assets:				
Life insurance policies	333			
Total fair value of other postretirement benefit plan assets	$ 333	$ —	$ —	$ —

Cash and equivalents include cash on hand and instruments with original maturities of three months or less and are valued at cost, which approximates fair value. Fixed income securities primarily consist of U.S. and foreign government bills, notes and bonds, corporate debt securities and investment contracts. The majority of the assets in this category are valued by evaluating bid prices provided by independent financial data services. For securities where market data is not readily available, unobservable market data is used to value the security. The underlying investments include small-cap equity, international equity and long- and short-term fixed income instruments.

Pension assets measured at net asset value include collective trust funds, partnerships/private equity interests and life insurance policies. Collective trust funds are private funds that are valued based on the value of the underlying investments which can be redeemed on a daily basis. The underlying investments include both passively and actively managed U.S. and foreign large- and mid-cap equity funds and short-term investment funds. Partnerships/private equity interests are investments in partnerships where the benefit plan is a limited partner. The investments are valued by the investment managers on a periodic basis using pricing models that use market, income and cost valuation methods. Distributions are received from these funds on a periodic basis through the liquidation of the underlying assets of the fund. Life insurance policies are used to fund other postretirement benefits in order to obtain favorable tax treatment and are valued based on the cash surrender value of the underlying policies. The Company has selected the funds in which these assets are invested and may elect to withdraw funds with proper notice to the insurance company or maintain the policies and receive death benefits as determined by the contracts.

Cash flows— The Company generally funds its pension and other postretirement benefit plans as required by law or to the extent such contributions are tax deductible. The Company expects to contribute approximately $29 million to its pension plans and $5 million to its other postretirement benefit plans in 2020. As of December 31, 2019, the Company’s portion of the future benefit payments that are expected to be paid during the twelve months ending December 31 is as follows:

In millions	Pension	Other Postretirement Benefits
2020	$ 152	$ 35
2021	157	35
2022	164	35
2023	171	35
2024	175	36
Years 2025-2029	862	176

(12) Commitments and Contingencies

The Company is subject to various legal proceedings and claims that arise in the ordinary course of business, including those involving environmental, product liability (including toxic tort) and general liability claims. The Company accrues for such liabilities when it is probable that future costs will be incurred and such costs can be reasonably estimated. Such accruals are based on developments to date, the Company’s estimates of the outcomes of these matters and its experience in contesting, litigating and settling other similar matters. The Company believes resolution of these matters, individually and in the aggregate, will not have a material adverse effect on the Company’s financial position, liquidity or future operations.

(13) Stockholders' Equity

Preferred Stock— Preferred Stock, without par value, of which 0.3 million shares are authorized and unissued, is issuable in series. The Board of Directors is authorized to fix by resolution the designation and characteristics of each series of preferred stock. The Company has no present commitment to issue its preferred stock.

Share Repurchases— On February 13, 2015, the Company's Board of Directors authorized a stock repurchase program which provided for the repurchase of up to $6.0 billion of the Company’s common stock over an open-ended period of time (the "2015 Program"). Under the 2015 Program, the Company repurchased approximately 6.1 million shares of its common stock at an average price of $91.78 per share during 2015, approximately 18.7 million shares of its common stock at an average price of $107.17 per share during 2016, approximately 7.1 million shares of its common stock at an average price of $140.56 per share during 2017, approximately 13.9 million shares of its common stock at an average price of $143.66 per share during 2018 and approximately 3.1 million shares of its common stock at an average price of $143.23 per share during 2019. The 2015 Program was completed in the second quarter of 2019.

On August 3, 2018, the Company's Board of Directors authorized a new stock repurchase program which provides for the repurchase of up to an additional $3.0 billion of the Company's common stock over an open-ended period of time (the "2018 Program"). Under the 2018 Program, the Company repurchased approximately 6.7 million shares of its common stock at an average price of $158.11 per share during 2019. As of December 31, 2019, there were approximately $1.9 billion of authorized repurchases remaining under the 2018 program.

Cash Dividends— Cash dividends declared were $4.14 per share in 2019, $3.56 per share in 2018 and $2.86 per share in 2017. Cash dividends paid were $4.07 per share in 2019, $3.34 per share in 2018 and $2.73 per share in 2017.

Accumulated Other Comprehensive Income (Loss)— The changes in accumulated other comprehensive income (loss) during 2019, 2018 and 2017 were as follows:

In millions	2019	2018	2017
Beginning balance	$ (1,677)	$ (1,287)	$ (1,807)
Adoption of new accounting guidance related to reclassification of certain tax effects	—	(45)	—
Foreign currency translation adjustments during the period	7	(308)	294
Foreign currency translation adjustments reclassified to income	—	5	2
Income taxes	(9)	(25)	110
Total foreign currency translation adjustments, net of tax	(2)	(328)	406
Pension and other postretirement benefit adjustments during the period	(54)	(64)	96
Pension and other postretirement benefit adjustments reclassified to income	21	41	56
Income taxes	7	6	(38)
Total pension and other postretirement benefit adjustments, net of tax	(26)	(17)	114
Ending balance	$ (1,705)	$ (1,677)	$ (1,287)

Effective January 1, 2018, the Company elected to early adopt new accounting guidance related to the stranded tax effects resulting from the change in the U.S. federal corporate income tax rate under the "Tax Cuts and Jobs Act" (the "Act") and reclassified $45 million of stranded income tax effects from Accumulated other comprehensive income (loss) to Retained earnings. Refer to Note 1. Description of Business and Summary of Significant Accounting Policies for additional information.

Foreign currency translation adjustments reclassified to income primarily relate to the disposal of operations and were included in the related gain or loss upon disposal. Pension and other postretirement benefit adjustments reclassified to income represent the amortization of actuarial gains and losses and prior service cost. Refer to Note 11. Pension and Other Postretirement Benefits for the amounts included in net periodic benefit cost.

The Company designated the €1.0 billion of Euro notes issued in May 2014, the €1.0 billion of Euro notes issued in May 2015 and the €1.6 billion of Euro notes issued in June 2019 as hedges of a portion of its net investment in Euro-denominated foreign operations to reduce foreign currency risk associated with the investment in these operations. Changes in the value of this debt resulting from fluctuations in the Euro to U.S. Dollar exchange rate have been recorded as foreign currency translation adjustments within Accumulated other comprehensive income (loss). The cumulative unrealized pre-tax gain recorded in Accumulated other comprehensive income (loss) related to the net investment hedge was $239 million and $187 million as of December 31, 2019 and 2018, respectively.

As of December 31, 2019 and 2018, the ending balance of Accumulated other comprehensive income (loss) consisted of after-tax cumulative translation adjustment losses of $1.3 billion and $1.3 billion, respectively, and after-tax unrecognized pension and other postretirement benefits costs of $390 million and $364 million, respectively. The estimated pre-tax unrecognized net benefit cost that will be amortized from Accumulated other comprehensive income (loss) into income in 2020 is $48 million for pension and other postretirement benefits.

(14) Stock-Based Compensation

On May 8, 2015 (the "Effective Date"), the 2015 Long-Term Incentive Plan (the "2015 Plan") was approved by shareholders. As of the Effective Date, no additional awards will be granted to employees under the 2011 Long-Term Incentive Plan (the "2011 Plan"). The significant terms of stock options and restricted stock units ("RSUs") were not changed under the 2015 Plan. Stock options and RSUs are issued to officers and/or other management employees under these plans. Stock options generally vest over a four-year period and have an expiration of ten years from the issuance date. RSUs generally "cliff" vest after a three-year period and include units with and without performance criteria. RSUs with performance criteria provide for full "cliff" vesting after three years if the Compensation Committee certifies that the performance goals have been met. Upon vesting, the holder will receive one share of common stock of the Company for each vested RSU.

Commencing in February 2013, the Company began issuing shares from treasury stock to cover the exercised options and vested RSUs. Prior to February 2013, the Company generally issued new shares from its authorized but unissued share pool. As of December 31, 2019, approximately 11 million shares of ITW common stock were reserved for issuance under these plans.

The Company records compensation expense for the grant date fair value of stock awards over the remaining service periods of those awards. The following table summarizes the Company's stock-based compensation expense for the twelve months ended December 31, 2019, 2018 and 2017:

In millions	2019	2018	2017
Pre-tax stock-based compensation expense	$ 41	$ 40	$ 36
Tax benefit	(5)	(5)	(9)
Total stock-based compensation expense, net of tax	$ 36	$ 35	$ 27

The following table summarizes activity related to non-vested RSUs for the twelve months ended December 31, 2019:

Shares in millions	Number of Shares	Weighted-Average Grant-Date Fair Value
Unvested, January 1, 2019	0.5	$121.24
Granted	0.2	144.43
Vested	(0.2)	87.28
Unvested, December 31, 2019	0.5	144.92

The following table summarizes stock option activity for the twelve months ended December 31, 2019:

In millions except exercise price and contractual terms	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
Under option, January 1, 2019	4.6	$90.56		
Granted	0.5	144.21		
Exercised	(1.3)	64.51		
Canceled or expired	(0.1)	144.55		
Under option, December 31, 2019	3.7	106.57	5.9	$271
Exercisable, December 31, 2019	2.4	89.55	4.8	$220

The fair value of RSUs is equal to the common stock fair market value on the date of the grant. RSUs provide for dividend equivalents payable in additional RSUs for dividends that would have been paid during the vesting period. Stock option exercise prices are equal to the common stock fair market value on the date of grant. The Company estimates forfeitures based on historical rates for awards with similar characteristics. The Company uses a binomial option pricing model to estimate the fair value of the stock options granted. The following summarizes the assumptions used in the option valuations for the twelve months ended December 31, 2019, 2018 and 2017:

	2019	2018	2017
Risk-free interest rate	2.50-2.68%	2.07-3.06%	0.91-2.61%
Weighted-average volatility	22.0%	22.0%	22.0%
Dividend yield	2.20%	2.10%	2.22%
Expected years until exercise	8.7-9.0	7.5-8.4	7.2-7.9

Lattice-based option valuation models, such as the binomial option pricing model, incorporate ranges of assumptions for inputs. The risk-free rate of interest for periods within the contractual life of the option is based on a zero-coupon U.S. government instrument over the contractual term of the equity instrument. Expected volatility is based on implied volatility from traded options on the Company's stock and historical volatility of the Company's stock. The Company uses historical data to estimate option exercise timing and employee termination rates within the valuation model. The weighted-average dividend yield is based on historical information. The expected term of options granted is derived from the output of the option valuation model and represents the period of time that options granted are expected to be outstanding. The ranges presented result from separate groups of employees assumed to exhibit different exercise behavior.

The weighted-average grant-date fair value of stock options granted for the twelve months ended December 31, 2019, 2018 and 2017 was $34.36, $38.34 and $26.83 per share, respectively. The aggregate intrinsic value of stock options exercised during the twelve months ended December 31, 2019, 2018 and 2017 was $127 million, $33 million and $132 million, respectively. As of December 31, 2019, there was $10 million of total unrecognized compensation cost related to unvested stock options. That cost is expected to be recognized over a weighted-average period of 2.0 years. Exercise of stock options during the twelve months ended December 31, 2019, 2018 and 2017 resulted in cash receipts of $85 million, $22 million and $84 million, respectively. The total fair value of vested stock option awards during the twelve months ended December 31, 2019, 2018 and 2017 was $17 million, $15 million and $13 million, respectively.

As of December 31, 2019, there was $29 million of total unrecognized compensation cost related to unvested RSUs. That cost is expected to be recognized over a weighted-average remaining contractual life of 1.8 years. The total fair value of vested RSU awards during the twelve months ended December 31, 2019, 2018 and 2017 was $20 million, $19 million and $19 million, respectively.

(15) Other Balance Sheet Information

Other balance sheet information as of December 31, 2019 and 2018 was as follows:

In millions	2019	2018
Prepaid expenses and other current assets:		
Income tax refunds receivable	$ 77	$ 98
Value-added-tax receivables	73	79
Vendor advances	25	30
Other	121	127
Total prepaid expenses and other current assets	$ 296	$ 334
Other assets:		
Cash surrender value of life insurance policies	$ 441	$ 429
Prepaid pension assets	297	290
Operating lease right-of-use asset	206	—
Customer tooling	141	171
Investments	51	51
Other	91	89
Total other assets	$ 1,227	$ 1,030
Accrued expenses:		
Compensation and employee benefits	$ 335	$ 391
Deferred revenue and customer deposits	188	215
Rebates	159	172
Current portion of operating lease liability	51	—
Warranties	45	45
Current portion of pension and other postretirement benefit obligations	14	16
Other	425	432
Total accrued expenses	$ 1,217	$ 1,271
Other liabilities:		
Pension benefit obligation	$ 215	$ 203
Postretirement benefit obligation	198	179
Long-term portion of operating lease liability	128	—
Other	459	457
Total other liabilities	$ 1,000	$ 839

(16) Segment Information

The Company's operations are organized and managed based on similar product offerings and end markets, and are reported to senior management as the following seven segments: Automotive OEM; Food Equipment; Test & Measurement and Electronics; Welding; Polymers & Fluids; Construction Products; and Specialty Products. The following is a description of the Company's seven segments:

Automotive OEM— This segment is a global, niche supplier to top tier OEMs, providing unique innovation to address pain points for sophisticated customers with complex problems. Businesses in this segment produce components and fasteners for automotive-related applications.

Food Equipment— This segment is a highly focused and branded industry leader in commercial food equipment differentiated by innovation and integrated service offerings.

Test & Measurement and Electronics— This segment is a branded and innovative producer of test and measurement and electronic manufacturing and MRO solutions that improve efficiency and quality for customers in diverse end markets. Businesses in this segment produce equipment, consumables, and related software for testing and measuring of materials and structures, as well as equipment and consumables used in the production of electronic subassemblies and microelectronics.

Welding— This segment is a branded value-added equipment and specialty consumable manufacturer with innovative and leading technology. Businesses in this segment produce arc welding equipment, consumables and accessories for a wide array of industrial and commercial applications.

Polymers & Fluids— This segment is a branded supplier to niche markets that require value-added, differentiated products. Businesses in this segment produce engineered adhesives, sealants, lubrication and cutting fluids, and fluids and polymers for auto aftermarket maintenance and appearance.

Construction Products— This segment is a branded supplier of innovative engineered fastening systems and solutions.

Specialty Products— This segment is focused on diversified niche market opportunities with substantial patent protection producing beverage packaging equipment and consumables, product coding and marking equipment and consumables, and appliance components and fasteners.

Segments are allocated a fixed overhead charge based on the segment's revenue. Expenses not charged to the segments are reported separately as Unallocated. Because the Unallocated category includes a variety of items, it is subject to fluctuations on a quarterly and annual basis. Unallocated in 2017 includes the favorable impact from the previously discussed confidential legal settlement.

Segment information for 2019, 2018 and 2017 was as follows:

In millions	2019	2018	2017
Operating revenue:			
Automotive OEM	$ 3,063	$ 3,338	$ 3,271
Food Equipment	2,188	2,214	2,123
Test & Measurement and Electronics	2,121	2,171	2,069
Welding	1,638	1,691	1,538
Polymers & Fluids	1,669	1,724	1,724
Construction Products	1,625	1,700	1,672
Specialty Products	1,825	1,951	1,938
Intersegment revenue	(20)	(21)	(21)
Total	$ 14,109	$ 14,768	$ 14,314
Operating income:			
Automotive OEM	$ 659	$ 751	$ 747
Food Equipment	578	572	556
Test & Measurement and Electronics	542	523	464
Welding	453	474	415
Polymers & Fluids	381	369	357
Construction Products	383	414	399
Specialty Products	472	522	527
Total Segments	3,468	3,625	3,465
Unallocated	(66)	(41)	20
Total	$ 3,402	$ 3,584	$ 3,485
Depreciation and amortization and impairment of intangible assets:			
Automotive OEM	$ 125	$ 123	$ 111
Food Equipment	41	44	45
Test & Measurement and Electronics	69	88	92
Welding	26	27	28
Polymers & Fluids	77	83	89
Construction Products	29	32	33
Specialty Products	59	64	64
Total	$ 426	$ 461	$ 462
Plant and equipment additions:			
Automotive OEM	$ 134	$ 184	$ 147
Food Equipment	35	28	27
Test & Measurement and Electronics	26	31	23
Welding	28	23	17
Polymers & Fluids	18	15	16
Construction Products	29	25	22
Specialty Products	56	58	45
Total	$ 326	$ 364	$ 297
Identifiable assets:			
Automotive OEM	$ 2,417	$ 2,388	$ 2,402
Food Equipment	1,042	1,019	1,054
Test & Measurement and Electronics	2,374	2,343	2,449
Welding	734	789	756
Polymers & Fluids	1,862	1,942	2,067
Construction Products	1,176	1,167	1,196
Specialty Products	1,656	1,687	1,721
Total Segments	11,261	11,335	11,645
Corporate	3,807	3,535	5,135
Total	$ 15,068	$ 14,870	$ 16,780

Identifiable assets by segment are those assets that are specifically used in that segment. Corporate assets are principally cash and equivalents, investments and other general corporate assets.

Enterprise-wide information for the twelve months ended December 31, 2019, 2018 and 2017 was as follows:

In millions	2019	2018	2017
Operating Revenue by Geographic Region:			
United States	$ 6,507	$ 6,562	$ 6,243
Canada/Mexico	972	1,050	996
Total North America	7,479	7,612	7,239
Europe, Middle East and Africa	3,920	4,241	4,102
Asia Pacific	2,400	2,573	2,577
South America	310	342	396
Total Operating Revenue	$ 14,109	$ 14,768	$ 14,314

Operating revenue by geographic region is based on the customers' locations. As of December 31, 2019, the Company had approximately 11% of its total long-lived assets in China. There was no single country outside the U.S with long-lived assets exceeding 10% of the Company's total long-lived assets in 2018. No single customer accounted for more than 5% of consolidated revenues for the twelve months ended December 31, 2019, 2018 or 2017.

SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)

The unaudited quarterly financial data included as supplementary data reflects all adjustments that are, in the opinion of management, necessary for a fair statement of the results for the interim periods presented.

	Three Months Ended							
	March 31		June 30		September 30		December 31	
In millions except per share amounts	2019	2018	2019	2018	2019	2018	2019	2018
Operating revenue	$ 3,552	$ 3,744	$ 3,609	$ 3,831	$ 3,479	$ 3,613	$ 3,469	$ 3,580
Cost of revenue	2,059	2,181	2,099	2,231	2,007	2,096	2,022	2,096
Operating income	839	903	871	932	868	889	824	860
Net income	597	652	623	666	660	638	641	607
Net income per share:								
Basic	$ 1.82	$ 1.92	$ 1.92	$ 1.98	$ 2.05	$ 1.91	$ 2.00	$ 1.84
Diluted	1.81	1.90	1.91	1.97	2.04	1.90	1.99	1.83

ITEM 9. ***Changes in and Disagreements With Accountants on Accounting and Financial Disclosure***

None.

ITEM 9A. ***Controls and Procedures***

Controls and Procedures

The Company's management, with the participation of the Company's Chairman & Chief Executive Officer and Senior Vice President & Chief Financial Officer, has evaluated the effectiveness of the Company's disclosure controls and procedures (as defined in Exchange Act Rule 13a-15(e)) as of December 31, 2019. Based on such evaluation, the Company's Chairman & Chief Executive Officer and Senior Vice President & Chief Financial Officer have concluded that, as of December 31, 2019, the Company's disclosure controls and procedures were effective.

Management Report on Internal Control over Financial Reporting

The Management Report on Internal Control over Financial Reporting and the Report of Independent Registered Public Accounting Firm are found in Item 8. Financial Statements and Supplementary Data.

In connection with the evaluation by management, including the Company's Chairman & Chief Executive Officer and Senior Vice President & Chief Financial Officer, no changes in the Company's internal control over financial reporting (as defined in Exchange Act Rule 13a-15(f)) during the quarter ended December 31, 2019 were identified 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 regarding the Directors of the Company is incorporated by reference from the information under the captions "Proposal 1 - Election of Directors" in the Company’s Proxy Statement for the 2020 Annual Meeting of Stockholders.

Information regarding the Audit Committee and its Financial Experts is incorporated by reference from the information under the captions "Proposal 1 - Election of Directors - Board of Directors and Its Committees" and "Audit Committee Report" in the Company’s Proxy Statement for the 2020 Annual Meeting of Stockholders.

Information regarding the Executive Officers of the Company can be found in Part I of this Annual Report on Form 10-K under the caption "Information About Our Executive Officers."

Information regarding compliance with Section 16(a) of the Exchange Act is incorporated by reference from the information under the caption "Proposal 1 - Election of Directors - Section 16(a) Beneficial Ownership Reports" in the Company’s Proxy Statement for the 2020 Annual Meeting of Stockholders.

Information regarding the Company’s code of ethics that applies to the Company’s Chairman & Chief Executive Officer, Senior Vice President & Chief Financial Officer, and key financial and accounting personnel is incorporated by reference from the information under the caption "Proposal 1 - Election of Directors - Corporate Governance Policies and Practices" in the Company’s Proxy Statement for the 2020 Annual Meeting of Stockholders.

ITEM 11. ***Executive Compensation***

This information is incorporated by reference from the information under the captions "NEO Compensation," "Proposal 1 - Election of Directors - Director Compensation," and "Compensation Discussion and Analysis" in the Company’s Proxy Statement for the 2020 Annual Meeting of Stockholders.

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

This information is incorporated by reference from the information under the captions "Proposal 1 - Election of Directors - Ownership of ITW Stock" and "NEO Compensation - Equity Compensation Plan Information" in the Company’s Proxy Statement for the 2020 Annual Meeting of Stockholders.

ITEM 13. ***Certain Relationships and Related Transactions, and Director Independence***

Information regarding certain relationships and related transactions is incorporated by reference from the information under the captions "Proposal 1 - Election of Directors - Ownership of ITW Stock," "Certain Relationships and Related Party Transactions" and "Proposal 1 - Election of Directors - Corporate Governance Policies and Practices" in the Company’s Proxy Statement for the 2020 Annual Meeting of Stockholders.

Information regarding director independence is incorporated by reference from the information under the captions "Proposal 1 - Election of Directors - Corporate Governance Policies and Practices" and "Appendix A - Categorical Standards for Director Independence" in the Company’s Proxy Statement for the 2020 Annual Meeting of Stockholders.

ITEM 14. ***Principal Accounting Fees and Services***

This information is incorporated by reference from the information under the caption "Proposal 2 - Ratification of the Appointment of Independent Registered Public Accounting Firm" in the Company’s Proxy Statement for the 2020 Annual Meeting of Stockholders.

PART IV

ITEM 15. ***Exhibits and Financial Statement Schedules***

(a) (1) Financial Statements
The following information is included as part of Item 8. Financial Statements and Supplementary Data:

Management Report on Internal Control over Financial Reporting
Report of Independent Registered Public Accounting Firm
Statement of Income
Statement of Comprehensive Income
Statement of Financial Position
Statement of Changes in Stockholders' Equity
Statement of Cash Flows
Notes to Financial Statements

(2) Financial Statement Schedules
None.

(3) Exhibits

Exhibit Number	Description
2.1(a)	Investment Agreement, dated as of August 15, 2012, among CD&R Wimbledon Holdings III, L.P., a Cayman Islands limited partnership; Illinois Tool Works Inc.; ITW DS Investments Inc., a Delaware corporation; and Wilsonart International Holdings LLC, a Delaware limited liability company, filed as Exhibit 2.1 to the Company's Current Report on Form 8-K filed on August 17, 2012 (Commission File No. 1-4797) and incorporated herein by reference. (Certain of the schedules and similar attachments have been omitted pursuant to Item 601(b)(2) of Regulation S-K, but the Company undertakes to furnish a copy of the schedules or similar attachments to the Securities and Exchange Committee upon request.)
2.1(b)	Stock Purchase Agreement, dated as of February 6, 2014, between Illinois Tool Works Inc. and certain of its subsidiaries and Vault Bermuda Holding Co. Ltd., filed as Exhibit 2.1 to the Company's Current Report on Form 8-K filed on February 12, 2014. (Commission File No. 1-4797) and incorporated herein by reference. (Certain of the schedules and similar attachments have been omitted pursuant to Item 601(b)(2) of Regulation S-K, but the Company undertakes to furnish a copy of the schedules or similar attachments to the Securities and Exchange Commission upon request).
3(a)(i)	Amended and Restated Certificate of Incorporation of Illinois Tool Works Inc., filed as Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2014 (Commission File No. 1-4797) and incorporated herein by reference.
3(a)(ii)	Certificate of Amendment to Amended and Restated Certificate of Incorporation of Illinois Tool Works Inc., filed as Exhibit 3(a)(ii) to the Company's Current Report on Form 8-K filed on May 12, 2016 (Commission File No. 1-4797) and incorporated herein by reference.
3(b)	By-laws of Illinois Tool Works Inc., as amended and restated as of May 6, 2016, filed as Exhibit 3(b)(i) to the Company's Current Report on Form 8-K filed on May 12, 2016 (Commission File No. 1-4797) and incorporated herein by reference.
4(a)	Indenture between Illinois Tool Works Inc. and The First National Bank of Chicago, as Trustee, dated as of November 1, 1986, filed as Exhibit 4.1 to the Company's Registration Statement on Form S-3 filed on January 15, 1999 (Commission File No. 333-70691) and incorporated herein by reference.
4(b)	First Supplemental Indenture between Illinois Tool Works Inc. and Harris Trust and Savings Bank, as Trustee, dated as of May 1, 1990, filed as Exhibit 4.2 to the Company's Registration Statement on Form S-3 filed on January 15, 1999 (Commission File No. 333-70691) and incorporated herein by reference.
4(c)	Officers' Certificate dated August 31, 2011, establishing the terms, and setting forth the forms, of the 3.375% Notes due 2021 and the 4.875% Notes due 2041, filed as Exhibit 4.3 to the Company's Current Report on Form 8-K filed on September 1, 2011 (Commission File No. 001-04797) and incorporated herein by reference.
4(d)	Officers' Certificate dated August 28, 2012, establishing the terms, and setting forth the forms, of the 3.9% Notes due 2042, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on August 28, 2012 (Commission File No. 001-4797) and incorporated herein by reference.

Exhibit Number	Description
4(e)	Officers' Certificate dated February 25, 2014, establishing the terms, and setting forth the forms, of the 0.9% Notes due 2017, the 1.95% Notes due 2019, and the 3.5% Notes due 2024, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on February 26, 2014 (Commission File No. 001-04797) and incorporated herein by reference.
4(f)	Officers' Certificate dated May 20, 2014, establishing the terms, and setting forth the forms, of the 1.75% Euro Notes due 2022 and the 3.0% Euro Notes due 2034, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on May 22, 2014 (Commission File No. 001-04797) and incorporated herein by reference.
4(g)	Officers' Certificate dated May 19, 2015, establishing the terms, and setting forth the forms, of the 1.25% Euro Notes due 2023 and the 2.125% Euro Notes due 2030, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on May 22, 2015 (Commission File No. 001-04797) and incorporated herein by reference.
4(h)	Officer's Certificate dated November 7, 2016, establishing the terms, and setting forth the forms, of the 2.65% Notes due 2026, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on November 10, 2016 (Commission File No. 001-04797) and incorporated herein by reference.
4(i)	Officers' Certificate dated June 5, 2019, establishing the terms, and setting forth the forms, of the 0.250% Notes due 2024, the 0.625% Notes due 2027 and the 1.000% Notes due 2031, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on June 5, 2019 (Commission File No. 001-04797) and incorporated herein by reference.
4(j)	Description of the Company's common stock.
4(k)	Description of the 1.75% Euro Notes due 2022 and 3.00% Euro Notes due 2034.
4(l)	Description of the 1.25% Euro Notes due 2023 and 2.125% Euro Notes due 2030.
4(m)	Description of the 0.250% Euro Notes due 2024, 0.625% Euro Notes due 2027 and 1.00% Euro Notes due 2031.
10(a)*	Illinois Tool Works Inc. 2011 Long-Term Incentive Plan, filed as Exhibit 99.2 to the Company's Current Report on Form 8-K filed on December 16, 2010 (Commission File No. 1-4797) and incorporated herein by reference.
10(b)*	Illinois Tool Works Inc. 2015 Long-Term Incentive Plan effective May 8, 2015, filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2015 (Commission File No. 1-4797) and incorporated herein by reference.
10(c)*	Form of stock option terms filed as Exhibit 99.1 to the Company's Current Report on Form 8-K filed on February 9, 2011 (Commission File No. 1-4797) and incorporated herein by reference.
10(d)*	Form of stock option terms filed as Exhibit 99.1 to the Company's Current Report on Form 8-K filed on February 7, 2012 (Commission File No. 1-4797) and incorporated herein by reference.
10(e)*	Form of stock option terms filed as Exhibit 99.1 to the Company's Current Report on Form 8-K filed on February 13, 2014 (Commission File No. 1-4797) and incorporated herein by reference.
10(f)*	Form of stock option terms filed as Exhibit 99.1 to the Company's Current Report on Form 8-K filed on February 9, 2016 (Commission File No. 1-4797) and incorporated herein by reference.
10(g)*	Form of stock option terms filed as Exhibit 99.1 to the Company's Current Report on Form 8-K filed on February 9, 2017 (Commission File No. 1-4797) and incorporated herein by reference.
10(h)*	Form of restricted stock unit terms filed as Exhibit 99.2 to the Company's Current Report on Form 8-K filed on February 9, 2017 (Commission File No. 1-4797) and incorporated herein by reference.
10(i)*	Form of performance share unit terms filed as Exhibit 99.3 to the Company's Current Report on Form 8-K filed on February 9, 2017 (Commission File No. 1-4797) and incorporated herein by reference.
10(j)*	Form of performance cash grant filed as Exhibit 99.4 to the Company's Current Report on Form 8-K filed on February 9, 2017 (Commission File No. 1-4797) and incorporated herein by reference.
10(k)*	Form of stock option terms filed as Exhibit 99.1 to the Company's Current Report on Form 8-K filed on February 14, 2019 (Commission File No. 1-4797) and incorporated herein by reference
10(l)*	Form of performance share unit terms filed as Exhibit 99.2 to the Company's Current Report on Form 8-K filed on February 14, 2019 (Commission File No. 1-4797) and incorporated herein by reference

Exhibit Number	Description
10(m)*	Form of performance cash terms filed as Exhibit 99.3 to the Company's Current Report on Form 8-K filed on February 14, 2019 (Commission File No. 1-4797) and incorporated herein by reference
10(n)*	Form of stock option terms filed as Exhibit 99.1 to the Company's Current Report on Form 8-K filed on February 5, 2020 (Commission File No. 1-4797) and incorporated herein by reference.
10(o)*	Form of performance share unit terms filed as Exhibit 99.2 to the Company's Current Report on Form 8-K filed on February 5, 2020 (Commission File No. 1-4797) and incorporated herein by reference.
10(p)*	Form of performance cash terms filed as Exhibit 99.3 to the Company's Current Report on Form 8-K filed on February 5, 2020 (Commission File No. 1-4797) and incorporated herein by reference.
10(q)*	Form of restricted stock unit terms filed as Exhibit 99.4 to the Company's Current Report on Form 8-K filed on February 5, 2020 (Commission File No. 1-4797) and incorporated herein by reference.
10(r)*	Illinois Tool Works Inc. 2011 Executive Incentive Plan, filed as Exhibit 99.1 to the Company's Current Report on Form 8-K filed on December 16, 2010 (Commission File No. 1-4797) and incorporated herein by reference.
10(s)*	Illinois Tool Works Inc. Executive Contributory Retirement Income Plan as amended and restated, effective January 1, 2010, filed as exhibit 10 to the Company's Current Report on Form 8-K filed on November 5, 2009 (Commission File No. 1-4797) and incorporated herein by reference.
10(t)*	Illinois Tool Works Inc. Nonqualified Pension Plan, effective January 1, 2008, as amended and approved by the Board of Directors on December 22, 2008, filed as Exhibit 10(p) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2008 (Commission File No. 1-4797) and incorporated herein by reference.
10(u)*	Illinois Tool Works Inc. 2011 Change-in-Control Severance Compensation Policy, filed as Exhibit 99.3 to the Company's Current Report on Form 8-K filed on December 16, 2010 (Commission File No. 1-4797) and incorporated herein by reference.
10(v)*	Illinois Tool Works Inc. Amended and Restated Directors' Deferred Fee Plan effective May 2, 2014, filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2014 (Commission File No. 1-4797) and incorporated herein by reference.
10(w)*	Illinois Tool Works Inc. 2011 Cash Incentive Plan, filed as Exhibit 99.1 to the Company's Form 8-K filed on May 12, 2011 (Commission File No. 1-4797) and incorporated herein by reference.
10(x)*	First Amendment to the ITW Executive Contributory Retirement Income Plan dated February 15, 2013, filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2013 (Commission File No. 1-4797) and incorporated herein by reference.
10(y)*	Five Year Credit Agreement dated as of September 27, 2019 among Illinois Tool Works Inc., JPMorgan Chase Bank, N.A., as Agent, Citibank, N.A., as Syndication Agent, and a syndicate of lenders, filed as Exhibit 10(a) to the Company's Current Report on Form 8-K filed on October 3, 2019 (Commission File No. 1-4797) and incorporated herein by reference.
21	Subsidiaries and Affiliates of the Company.
23	Consent of Independent Registered Public Accounting Firm.
24	Powers of Attorney.
31	Rule 13a-14(a) Certifications.
32	Section 1350 Certification.
101.INS	iXBRL Instance Document**
101.SCH	iXBRL Taxonomy Extension Schema**
101.CAL	iXBRL Taxonomy Extension Calculation Linkbase**
101.DEF	iXBRL Taxonomy Extension Definition Linkbase**
101.LAB	iXBRL Taxonomy Extension Label Linkbase**
101.PRE	iXBRL Taxonomy Extension Presentation Linkbase**
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

* Management contract or compensatory plan or arrangement.

** The following financial information from Illinois Tool Works Inc.'s Annual Report on Form 10-K for the year ended December 31, 2019, formatted in iXBRL (Inline Extensible Business Reporting Language): (i) Statement of Income, (ii) Statement of Comprehensive Income, (iii) Statement of Changes in Stockholders' Equity (iv) Statement of Financial Position, (v) Statement of Cash Flows and (vi) related Notes to Financial Statements.

Pursuant to Regulation S-K, Item 601(b)(4)(iii), the Company has not filed with Exhibit 4 any debt instruments for which the total amount of securities authorized thereunder is less than 10% of the total assets of the Company and its subsidiaries on a consolidated basis as of December 31, 2019, with the exception of the Officers' Certificates related to the 3.375% Notes due 2021, the 1.75% Euro Notes due 2022, the 1.25% Euro Notes due 2023, the 3.50% Notes due 2024, 0.25% Euro Notes due 2024, the 2.65% Notes due 2026, 0.625% Euro Notes due 2027, the 2.125% Euro Notes due 2030, 1.00% Euro Notes due 2031, the 3.00% Euro Notes due 2034, the 4.875% Notes due 2041, and the 3.90% Notes due 2042, which are described as Exhibit numbers 4(c) through (i) in the Exhibit Index. The Company agrees to furnish a copy of the agreement related to the debt instruments which have not been filed with Exhibit 4 to the Securities and Exchange Commission upon request.

ITEM 16. *Form 10-K Summary*

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized on this 14th day of February 2020.

ILLINOIS TOOL WORKS INC.

By: /s/ E. SCOTT SANTI

E. Scott Santi

Chairman & Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the registrant and in the capacities indicated on this 14th day of February 2020.

Signatures	Title
/s/ E. SCOTT SANTI E. Scott Santi	Chairman & Chief Executive Officer, Director (Principal Executive Officer)
/s/ MICHAEL M. LARSEN Michael M. Larsen	Senior Vice President & Chief Financial Officer (Principal Financial Officer)
/s/ RANDALL J. SCHEUNEMAN Randall J. Scheuneman	Vice President & Chief Accounting Officer (Principal Accounting Officer)
DANIEL J. BRUTTO	Director
SUSAN CROWN	Director
JAMES W. GRIFFITH	Director
JAY L. HENDERSON	Director
RICHARD H. LENNY	Director
JAMES A. SKINNER	Director
DAVID B. SMITH, JR.	Director
PAMELA B. STROBEL	Director
KEVIN M. WARREN	Director
ANRÉ D. WILLIAMS	Director
	By: /s/ E. SCOTT SANTI (E. Scott Santi, *as Attorney-in-Fact)*

Original powers of attorney authorizing E. Scott Santi to sign the Company’s Annual Report on Form 10-K and amendments thereto on behalf of the above-named directors of the registrant have been filed with the Securities and Exchange Commission as part of this Annual Report on Form 10-K (Exhibit 24).

(Back To Top)

Section 2: EX-4.J (EXHIBIT 4.J)

Exhibit 4(j)

Description of the Company’s Common Stock
Registered Pursuant to Section 12
of the Securities Exchange Act of 1934

The following description of the Company’s capital stock is intended as a summary only. This description is based upon, and is qualified by reference to, the Company’s Amended and Restated Certificate of Incorporation (“certificate of incorporation”) and By-laws, each as filed with the Company’s Annual Report on Form 10-K, and the applicable provisions of Delaware corporation law.

General

As of January 31, 2020, the authorized capital stock of Illinois Tool Works Inc. (“ITW”) consists of 700,000,000 shares of common stock, par value $0.01 per share, and 300,000 shares of preferred stock, no par value. As of January 31, 2020, there were 318,864,237 shares of common stock issued and outstanding. No preferred stock is issued and outstanding.

Common Stock

Holders of common stock are entitled to one vote for each share held of record, in person or by proxy, at all meetings of the stockholders and on all propositions presented to such meetings (other than the election of any directors who may be elected by vote of the preferred stock voting as a class). The common stock does not entitle holders to cumulative voting rights in the election of directors. Holders of common stock do not have preemptive rights.

All outstanding shares of common stock are fully paid and nonassessable. Dividends may be paid on the common stock when and if declared by the Board of Directors out of funds legally available therefor. Upon liquidation, dissolution, or winding up of the affairs of ITW, its assets remaining, after provision for payment of creditors and holders of any preferred stock, are distributable pro rata among holders of its common stock.

The common stock is listed and traded on the NYSE under the symbol "ITW." The transfer agent and registrar of the common stock is Broadridge Corporate Issuer Solutions, Inc., Philadelphia, PA.

Preferred Stock

ITW's preferred stock is issuable in series. The preferred stock is senior to the common stock, both as to payment of dividends and distribution of assets. The designation, preferences and rights of each series may be established by the Board of Directors, including voting rights, dividends, redemption features, payments on liquidation and sinking fund provisions, if any. The preferred stock may be utilized for a variety of corporate purposes, including future public offerings to raise additional capital or to finance acquisitions. The preferred stock also could be issued to persons friendly to current management with terms that could render more difficult or discourage attempts to gain control of ITW by means of a merger, tender offer, proxy contest or otherwise and thereby protect the continuity of current management. The preferred stock also could be used to dilute the stock ownership of persons seeking to obtain control of ITW.

Special Charter and By-law Provisions

ITW's Amended and Restated Certificate of Incorporation and By-laws, as amended and restated, contain provisions that could render more difficult a merger, tender offer, proxy contest or attempt to gain control of the Board of Directors. The Amended and Restated Certificate of Incorporation prohibits stockholder action by written consent. The Amended and Restated Certificate of Incorporation and By-laws permit only the Board of Directors to fill vacancies on the Board of Directors, whether created by an increase in the number of directors or otherwise, and permit special meetings of stockholders to be called only by the chairman, the president or a majority of the Board of Directors, or, subject to procedural requirements set forth in the By-laws, by stockholders that own at least 20%

of the Company's outstanding common stock. The By-laws provide advance notice procedures for stockholders seeking to bring business before an annual meeting of stockholders or to nominate candidates for election as directors at any meeting of stockholders. Under the By-laws, up to 20 stockholders owning at least 3% of the Company's outstanding common stock for at least 3 years may include nominations in the Company's proxy materials for up to the greater of 25% of the Board of Directors or 2 directors, provided the stockholder(s) and nominee(s) satisfy the requirements specified in the By-laws. The By-laws also specify certain requirements regarding the form and content of a stockholder's notice.

(Back To Top)

Section 3: EX-4.K (EXHIBIT 4.K)

Exhibit 4(k)

Description of 1.75% Euro Notes due 2022 and 3.00% Euro Notes due 2034
Registered Pursuant to Section 12
of the Securities Exchange Act of 1934

The following summary of the Company's above referenced debt securities, each issued as a separate class thereof, is based on and qualified by the Indenture, dated November 1, 1986, as supplemented by a First Supplemental Indenture, dated May 1, 1990, between Illinois Tool Works and The Bank of New York Mellon Trust Company, N.A., as successor trustee (the "trustee"), with certain terms of each series of notes being set forth in an officers' certificate (together, the "indenture"), and the 1.75% Euro Notes due 2022 and the 3.00% Euro Notes due 2034 (collectively, the "Notes"). For a complete description of the terms and provisions of the Notes, refer to the Indenture and to the Officers' Certificate establishing the terms, and setting forth the forms, of the Notes, each of which is filed as an exhibit to this Annual Report on Form 10-K. Throughout this exhibit, references to "we," "our," and "us" refer to Illinois Tool Works Inc.

General

On May 12, 2014, we registered €500,000,000 aggregate principal amount of 1.750% notes due 2022 (the "2022 notes") and €500,000,000 aggregate principal amount of 3.000% notes due 2034 (the "2034 notes," and together with the 2022 notes referred to in this section, the "notes"). The notes were issued each as a separate series of debt securities under the Indenture, dated November 1, 1986, as supplemented by a First Supplemental Indenture, dated May 1, 1990, between us and The Bank of New York Mellon Trust Company, N.A., as successor trustee (the "trustee"), with certain terms of each series of notes being set forth in an officers' certificate (together, the "indenture").

The 2022 notes are traded on the New York Stock Exchange under the symbol "ITW22." The 2034 notes are traded on the New York Stock Exchange under the symbol "ITW34."

We have issued a significant amount of other debt securities under the Indenture that have neither been registered pursuant to Section 12 of the Securities Exchange Act of 1934 nor listed on the NYSE. You should refer to our description of the amount of debt outstanding as disclosed in our Annual Report on Form 10-K and in other filings with the Securities and Exchange Commission.

Ranking

The notes are our direct, unsecured obligations. They rank equally with all of our other unsecured and unsubordinated indebtedness from time to time outstanding. The notes are effectively subordinated to all of our existing and future secured indebtedness to the extent of the value of the collateral securing such indebtedness and structurally subordinated to all of the existing and future indebtedness and other liabilities of our subsidiaries.

Payments in Euros

All payments of interest and principal, including payments made upon any redemption of the notes, will be payable in euros. If the euro is unavailable to us due to the imposition of exchange controls or other circumstances beyond our control or if the euro is no longer being used by the then-member states of the European Monetary Union that have adopted the euro as their currency or for the settlement of transactions by public institutions of or within the international banking community, then all payments in respect of the notes will be made in U.S. dollars until the euro is again available to us or so used. In such circumstances, the amount payable on any date in euros will be converted into U.S. dollars on the basis of the most recently available market exchange rate for euros. Any payment in respect of the notes so made in U.S. dollars will not constitute an event of default under the notes or the indenture governing the notes. Neither the trustee nor the paying agent shall have any responsibility for any calculation or conversion in connection with the foregoing.

Investors are subject to foreign exchange risks as to payments of principal and interest that may have important economic and tax consequences to them.

Principal, Interest Payments and Maturity

The 2022 notes are limited to €500,000,000 aggregate principal amount and will mature on May 20, 2022. The 2034 notes are limited to €500,000,000 aggregate principal amount and will mature on May 19, 2034.

The notes of each series will bear interest at a rate of 1.750% and 3.000%, respectively, accruing from May 20, 2014 or the most recent interest payment date to which interest has been paid or provided for. We pay interest on the 2022 notes annually in arrears on May 20 of each year, beginning on May 20, 2015, and we pay interest on the 2034 notes annually in arrears on May 19 of each year, beginning on May 19, 2015, in each case, to persons in whose names the notes are registered at the close of business on the preceding May 1. With respect to each series of notes, we compute the amount of interest payable on the basis of (i) the actual number of days in the period for which interest is being calculated and (ii) the actual number of days from (and including) the last date on which interest was paid on the notes of such series (or May 20, 2014, if no interest has been paid on the notes of such series) to (but excluding) the next scheduled interest payment date. This payment convention is referred to as ACTUAL/ACTUAL (ICMA) as defined in the rulebook of the International Capital Market Association.

The notes may be registered for transfer or exchanged without payment of any charge (other than any tax or other governmental charge payable in connection therewith).

The notes do not have the benefit of any sinking fund and are not convertible or exchangeable.

Optional Redemption

We may redeem the notes of each series, in whole or in part, on any date that is not less than three months prior to the stated maturity thereof, at our option, at a redemption price (calculated by us) equal to the greater of:

(1) 100% of the principal amount of the notes to be redeemed; or

(2) the sum of the present values of the Remaining Scheduled Payments (as defined below) of principal and interest on the notes to be redeemed (not including any portion of such payments of interest accrued as of the date of redemption) discounted to the date of redemption on an annual basis (ACTUAL/ACTUAL (ICMA)) at the applicable Comparable Government Bond Rate (as defined below) plus 15 basis points plus accrued and unpaid interest on the principal amount being redeemed to, but excluding, the redemption date.

At any time on or after the date that is three months prior to the maturity date of the 2022 notes or the 2034 notes, as applicable, we may also redeem some or all of the maturing notes, at our option, at a redemption price equal to 100% of the principal amount of the applicable notes being redeemed plus accrued and unpaid interest on the principal amount being redeemed to, but excluding, the redemption date.

“Comparable Government Bond Rate” means, with respect to any redemption date, the price, expressed as a percentage (rounded to three decimal places, with 0.0005 being rounded upwards), at which the gross redemption yield on the notes to be redeemed, if they were to be purchased at such price on the third business day prior to the date fixed for redemption, would be equal to the gross redemption yield on such business day of the Comparable Government Bond (as defined below) on the basis of the middle market price of the Comparable Government Bond prevailing at 11:00 a.m. (London time) on such business day as determined by an independent investment bank selected by us.

“Comparable Government Bond” means, in relation to any Comparable Government Bond Rate calculation, at the discretion of an independent investment bank selected by us, a German government bond whose maturity is closest to the maturity of the notes to be redeemed, or if such independent investment bank in its discretion determines that such similar bond is not in issue, such other German government bond as such independent investment bank may, with the advice of three brokers of, and/or market makers in, German government bonds selected by us, determine to be appropriate for determining the Comparable Government Bond Rate.

“Remaining Scheduled Payments” means, with respect to each note to be redeemed, the remaining scheduled payments of the principal thereof and interest thereon that would be due after the related redemption date but for such redemption; provided, however, that, if such redemption date is not an interest payment date with respect to such note, the amount of the next succeeding scheduled interest payment thereon will be deemed to be reduced by the amount of interest accrued thereon to such redemption date.

We will, or will cause the trustee on our behalf to, mail notice of a redemption to holders of the applicable notes to be redeemed by first-class mail (or otherwise transmit in accordance with applicable procedures of Euroclear/Clearstream) at least 30 and not more than 60 days prior to the date fixed for redemption. Unless we default in payment of the redemption price, on and after the redemption date, interest will cease to accrue on the applicable notes or portions thereof called for redemption. On or before the redemption date, we will deposit with the paying agent or set aside, segregate and hold in trust (if we are acting as paying agent), funds sufficient to pay the redemption price of, and accrued and unpaid interest on, such notes to be redeemed on that redemption date. If fewer than all of the notes of the applicable series are to be redeemed, the trustee will select, not more than 60 days prior to the redemption date, the particular notes of such series or portions thereof for redemption from the outstanding notes of such series not previously called by such method as the trustee deems fair and appropriate and in accordance with the applicable procedures of the depositary; provided, however, that no notes of a principal amount of €100,000 or less shall be redeemed in part.

Payment of Additional Amounts

All payments of principal and interest on the notes by us are made free and clear of and without withholding or deduction for or on account of any present or future tax, assessment or other governmental charge imposed by the United States (or any political subdivision or taxing authority thereof or therein having power to tax) (a “Relevant Taxing Jurisdiction”), unless the withholding of such taxes, assessments or other governmental charge is required by law or the official interpretation or administration thereof. Subject to the exceptions and limitations set forth below, we pay as additional interest on notes such additional amounts (the “additional amounts”) as are necessary in order that the net payment by us of the principal of and interest on such notes to a holder who is not a United States person (as defined below), after withholding or deduction for any present or future tax, assessment or other governmental charge imposed by any Relevant Taxing Jurisdiction, will not be less than the amount provided in such notes to be then due and payable; provided, however, that the foregoing obligation to pay additional amounts shall not apply:

1. to any tax, assessment or other governmental charge that is imposed by reason of the holder (or the beneficial owner for whose benefit such holder holds such note), or a fiduciary, settlor, beneficiary, member or shareholder of the holder if the holder is an estate, trust, partnership or corporation, or a person holding a power over an estate or trust administered by a fiduciary holder, being considered as:

    a. being or having been engaged in a trade or business in the United States or having or having had a permanent establishment in the Relevant Taxing Jurisdiction;

    b. having a current or former connection with the Relevant Taxing Jurisdiction (other than a connection arising solely as a result of the ownership of such notes, the receipt of any payment or the enforcement of any rights hereunder), including being or having been a citizen or resident of the Relevant Taxing Jurisdiction;

    c. being or having been a foreign or domestic personal holding company, a passive foreign investment company or a controlled foreign corporation for United States income tax purposes or a corporation that has accumulated earnings to avoid United States federal income tax;

    d. being or having been a “10-percent shareholder” of ITW as defined in section 871(h)(3) of the United States Internal Revenue Code of 1986, as amended (the “Code”) or any successor provision; or

e. being or having been a bank receiving payments on an extension of credit made pursuant to a loan agreement entered into in the ordinary course of its trade or business, as described in section 881(c)(3)(A) of the Code or any successor provisions;

2. to any holder that is not the sole beneficial owner of such notes, or a portion of such notes, or that is a fiduciary, partnership or limited liability company, but only to the extent that a beneficial owner with respect to the holder, a beneficiary or settlor with respect to the fiduciary, or a beneficial owner or member of the partnership or limited liability company would not have been entitled to the payment of an additional amount had the beneficiary, settlor, beneficial owner or member received directly its beneficial or distributive share of the payment;

3. to any tax, assessment or other governmental charge that would not have been imposed but for the failure of the holder or any other person to (a) submit an applicable United States Internal Revenue Service ("IRS") Form W-8 (with any required attachments) to establish the status as a non-United States person as required for purposes of the portfolio interest exemption or IRS Form W-9 to establish the status as a United States person, or comply with other certification, identification or information reporting requirements concerning the nationality, residence, identity or connection with a Relevant Taxing Jurisdiction of the holder or beneficial owner of such notes, if compliance is required by statute, by regulation of the Relevant Taxing Jurisdiction or by an applicable income tax treaty to which the Relevant Taxing Jurisdiction is a party as a precondition to exemption from such tax, assessment or other governmental charge or (b) comply with any informational gathering and reporting requirements or take any similar action (including entering into any agreement with the IRS), in each case, that are required to obtain the maximum available exemption from withholding by a Relevant Taxing Jurisdiction that is available to payments received by or on behalf of the holder;

4. to any tax, assessment or other governmental charge that is imposed otherwise than by withholding by us or a paying agent from the payment;

5. to any tax, assessment or other governmental charge that would not have been imposed or withheld but for a change in law, regulation, or administrative or judicial interpretation that becomes effective more than 15 days after the payment becomes due or is duly provided for, whichever occurs later;

6. to any estate, inheritance, gift, sales, excise, transfer, wealth, capital gains or personal property tax or similar tax, assessment or other governmental charge;

7. to any withholding or deduction that is imposed on a payment and that is required to be made pursuant to European Council Directive 2003/48/EC or any other Directive amending, supplementing or replacing such Directive, or any law implementing or complying with, or introduced in order to conform to, such Directive or Directives;

8. to any tax, assessment or other governmental charge required to be withheld by any paying agent from any payment of principal of or interest on any note, if such payment can be made without such withholding by at least one other paying agent;

9. to any tax, assessment or other governmental charge that would not have been imposed or levied but for the presentation by the holder of any note, where presentation is required, for payment on a date more than 30 days after the date on which payment became due and payable or the date on which payment thereof is duly provided for, whichever occurs later;

10. to any tax, assessment or other governmental charge that is imposed or withheld solely by reason of the beneficial owner being a bank (i) purchasing such notes in the ordinary course of its lending business or (ii) that is neither (A) buying such notes for investment purposes only nor (B) buying such notes for resale to a third-party that either is not a bank or holding such notes for investment purposes only;

11. to any tax, assessment or other governmental charge imposed under sections 1471 through 1474 of the Code as of the issue date (or any amended or successor provisions), any current or future regulations or official interpretations thereof, any agreement entered into pursuant to section 1471(b) of the Code or any fiscal or regulatory legislation, rules or practices adopted pursuant to any intergovernmental agreement entered into in connection with the implementation of such sections of the Code; or

12. in the case of any combination of items (1) through (11) above.

The notes are subject in all cases to any tax, fiscal or other law or regulation or administrative or judicial interpretation applicable to the notes. Except as specifically provided under this heading "—Payment of Additional Amounts," we will not be required to make any payment for any tax, assessment or other governmental charge imposed by any government or a political subdivision or taxing authority of or in any government or political subdivision.

As used under this heading "—Payment of Additional Amounts" and under the heading "—Redemption for Tax Reasons," the term "United States" means the United States of America, the states of the United States, and the District of Columbia, and the term "United States person" means any individual who is a citizen or resident of the United States for U.S. federal income tax purposes, a corporation, partnership or other entity created or organized in or under the laws of the United States, any state of the United States or the District of Columbia, or any estate or trust the income of which is subject to United States federal income taxation regardless of its source.

Redemption for Tax Reasons

If, (a) as a result of any change in, or amendment to, the laws (or any regulations or rulings promulgated under the laws) of any Relevant Taxing Jurisdiction, or any change in, or amendments to, an official position regarding the application or interpretation of such laws, regulations or rulings (including by virtue of a holding, judgment or order by a court of competent jurisdiction or a change in published administrative practice), which change or amendment is announced or becomes effective on or after the date of this prospectus supplement, we become or, based on a written opinion of independent counsel selected by us, are likely to become obligated to pay additional amounts as described herein under the heading "—Payment of Additional Amounts" with respect to the notes of either series, or (b) any act is taken by a Relevant Taxing Jurisdiction on or after the date of this prospectus supplement whether or not such act is taken with respect to us or any affiliate, that results in us being required or, based upon a written opinion of independent counsel selected by us, being likely to be required to pay such additional amounts, then we may at any time at our option redeem, in whole, but not in part, the notes of such series on not less than 15 nor more than 60 days' prior notice, at a redemption price equal to 100% of their principal amount, together with accrued and unpaid interest on the notes being redeemed to, but excluding, the redemption date.

Covenants

The following covenants apply to the notes. Each of the covenants is subject to the provision for exempted indebtedness described below.

For your reference, we have provided below definitions of the capitalized terms used in the description of the covenants.

Limitation on Liens

We will not, nor will we permit any Restricted Subsidiary to, issue, assume or guarantee any debt for money borrowed if such debt is secured by a mortgage, security interest, lien, pledge or other encumbrance (referred to in this prospectus supplement as a “lien”) on any Principal Property, or on any shares of stock or indebtedness of any Restricted Subsidiary, without in any such case effectively providing that the notes (and if we so choose, any other debt or obligation that ranks equally with the notes) are secured equally and ratably with, or prior to, such debt. These restrictions do not apply to debt secured by:

- liens on property of a corporation existing at the time it becomes a subsidiary or at the time it is merged into or consolidated with or purchased by us or a subsidiary;
- liens on property existing at the time of its acquisition and certain purchase money liens;
- liens securing the cost of construction of new plants, incurred within 180 days of completion of construction;
- liens securing the debt of a Restricted Subsidiary owing to us or another Restricted Subsidiary;
- liens in connection with the issuance of certain industrial revenue bonds or similar financings;
- liens existing on the date of the indenture;
- certain other liens specified in the indenture that are customarily exempted from restrictions in offerings of securities similar to the notes; and
- any extensions, renewals or replacements, in whole or in part, of any lien referred to above, as long as the principal amount of debt secured by any such lien does not increase and the lien is limited to all or part of the same property that previously secured the lien.

Limitation on Sale and Lease-Back

We will not, nor will we permit any Restricted Subsidiary to, engage in a sale and lease-back transaction of any Principal Property (except for certain temporary leases and leases with a Restricted Subsidiary) unless:

- we or the Restricted Subsidiary could (subject to the limitation on liens) incur debt secured by a lien on the Principal Property to be leased without equally and ratably securing the notes; or
- within 180 days following such a transaction, we retire long-term debt equal to the value of the transaction.

Exempted Indebtedness

We and our Restricted Subsidiaries may incur debt and enter into sale and lease-back transactions without regard to the two covenants described above if the sum of such debt and the value of such sale and lease-back transactions on a cumulative basis does not exceed 10% of the Consolidated Net Tangible Assets (which is total assets less current liabilities, goodwill and other intangibles) as shown on our audited consolidated balance sheet in our latest annual report to our stockholders.

Definitions

"Principal Property" means any manufacturing plant or other facility within the United States that we or a subsidiary own or lease, unless our Board of Directors determines that the plant or facility, together with any others so determined, is not of material importance to the total business of us and our Restricted Subsidiaries.

"Restricted Subsidiary" means any subsidiary (other than a subsidiary principally engaged in leasing or financing installment receivables or financing operations outside the United States) that owns or leases a Principal Property if:

- substantially all of its property is located in the United States;
- substantially all of its business is carried on in the United States; or
- it is incorporated in any State of the United States.

Consolidation or Merger

Under the terms of the indenture, we may consolidate or merge with another corporation or sell, convey or lease all or substantially all of our assets to another corporation or entity. The successor or acquiring corporation or entity must expressly assume all of our responsibilities and liabilities under the indenture, including the payment of all amounts due on the notes and performance of the covenants (it being understood that any obligation to pay Additional Amounts shall be determined *mutatis mutandis*, by treating the jurisdiction under the laws of which such successor or acquiring corporation or entity is organized and any political subdivision or taxing authority as therein having the power to tax, as a Relevant Taxing Jurisdiction). If, upon any such consolidation, merger, sale, conveyance or lease, or upon any such consolidation, merger, sale, conveyance or lease with respect to a Restricted Subsidiary, any Principal Property or shares of stock or indebtedness of a Restricted Subsidiary would become subject to a lien that is not in favor of us, a Restricted Subsidiary or any such successor or acquiring corporation or entity, we must, before or at the time of such transaction, effectively provide that the notes will be secured (if we so choose, equally and ratably with any other obligation of us or a Restricted Subsidiary that ranks equally with the notes) by a direct lien on such Principal Property or shares of stock or indebtedness of a Restricted Subsidiary that is prior to all liens other than pre-existing liens on such Principal Property or shares of stock or indebtedness of a Restricted Subsidiary, and that will continue as long as such Principal Property, shares of stock or indebtedness is subject to the lien arising in such transaction.

Events of Default

An event of default for any series of the notes includes the following:

- failure to pay any installment of interest, including any additional amounts, on the notes of that series that continues for 30 days after such payment is due;
- failure to pay principal of or premium, if any, on the notes of that series when due;
- failure to perform any of the other covenants or agreements in the notes or in the indenture and relating to the notes of that series that continues for 60 days after notice to us by the trustee or holders of at least 25% in aggregate principal amount of the outstanding notes of that series; or
- certain events of bankruptcy, insolvency or reorganization of us.

An event of default with respect to a particular series of notes issued under the indenture does not necessarily constitute an event of default with respect to any other series. The indenture provides that the trustee will, with certain exceptions, notify the holders of the affected series of notes of the occurrence of any of the events of default listed above (not including any applicable grace period and irrespective of the giving of notice as described in the third bullet) known to the trustee within 90 days after the occurrence thereof. Except in the case of a default in the payment of principal of, or premium, if any, or interest on a series of the notes, the trustee may withhold notice if it determines in good faith that withholding notice is in the interest of the holders.

If an event of default is continuing for any series of the notes, the trustee or the holders of not less than 25% in aggregate principal amount of the affected series of notes then outstanding may declare the principal amount of that series of the notes to be due and payable immediately. In such a case, subject to certain conditions, the holders of a majority in aggregate principal amount of that series of the notes then outstanding can annul the declaration and waive past defaults.

We are required to provide an annual officers' certificate to the trustee concerning our compliance with certain covenants we make in the indenture. Subject to the provisions of the indenture relating to the duties of the trustee, the trustee is not obligated to exercise any of its rights or powers at the request or direction of any of the holders of notes unless the holders have offered the trustee security or indemnity reasonably satisfactory to the trustee. The holders of a majority in principal amount of the outstanding notes of each series affected by an event of default may direct the time, method and place of conducting any proceeding for any remedy available to the trustee under the indenture or exercising any of the trustee's trusts or powers with respect to that series of the notes; however, the trustee may decline to follow such direction in certain circumstances.

If the euro is unavailable to us due to the imposition of exchange controls or other circumstances beyond our control or if the euro is no longer being used by the then-member states of the European Monetary Union that have adopted the euro as their currency or for the settlement of transactions by public institutions of or within the international banking community, then all payments in respect of the notes will be made in U.S. dollars until the euro is again available to us or so used. The amount payable on any date in euros will be converted into U.S. dollars on the basis of the most recently available market exchange rate for euros. Any payment in respect of the notes so made in U.S. dollars will not constitute an event of default. Neither the trustee nor the paying agent shall have any responsibility for effecting such currency conversions.

Modification and Amendment of the Indenture

We may enter into supplemental indentures with the trustee without the consent of the holders of the notes to, among other things:

- evidence the assumption by a successor corporation of our obligations under the indenture;
- appoint additional or separate trustees to act under the indenture;
- add covenants for the protection of the holders of the notes; and
- cure any ambiguity or correct any inconsistency in the indenture.

With the consent of the holders of a majority in aggregate principal amount of the notes of each affected series issued under the indenture at the time outstanding, we may execute supplemental indentures with the trustee to add provisions or change or eliminate any provision of the indenture or any supplemental indenture relating to such series or to modify the rights of the holders of those notes. However, no such supplemental indenture will (1) extend the fixed maturity of any notes, reduce the principal amount (including in the case of discounted notes the amount payable upon acceleration of the maturity thereof), reduce the rate or extend the time of payment of any interest, reduce any premium payable upon redemption, or change the currency in which any notes are payable, without the consent of each holder of affected notes, or (2) reduce the aforesaid majority in principal amount of the notes of any series, the consent of the holders of which is required for any such supplemental indenture, without the consent of the holders of all notes of such series.

Defeasance and Discharge of Indenture or Certain Obligations; Satisfaction and Discharge

At our option, we (1) will be discharged from all obligations under the indenture in respect of the notes of a series (except for certain obligations to register the transfer of or to exchange such notes, replace stolen, lost or mutilated notes, maintain paying agencies and hold monies for payment in trust) or (2) need not comply with certain covenants of the indenture that are applicable to each series of notes (including the limitation on liens and the limitation on sale and lease-back) and will not be limited by the restrictions in the indenture with respect to merger, consolidation or sale, conveyance or lease of substantially all of our assets, in each case if we irrevocably deposit with the trustee, in trust, money or Federal Republic of Germany obligations (or a combination thereof) sufficient to pay the principal of and any premium or interest on the applicable notes when due and satisfy other conditions in the indenture. In order to select either option, we must provide the trustee, among other things, an opinion of counsel based on a ruling from or published by the Internal Revenue Service (in the case of option (1)), or an opinion of counsel (in the case of option (2)), in each case to the effect that beneficial owners of the applicable notes will not recognize income, gain or loss for U.S. federal income tax purposes as a result of our exercise of the option, and will be subject to U.S. federal income tax on the same amounts and in the same manner and at the same times as if we had not exercised such option.

In the event we exercise our option under (2) above with respect to any series of notes and the notes of such series are declared due and payable because of the occurrence of any event of default other than default with respect to such obligations, the amount of money and Federal Republic of Germany obligations on deposit with the trustee will be sufficient to pay amounts due on the notes of that series at the time of their stated maturity but may not be sufficient to pay amounts due on the notes of that series at the time of the acceleration resulting from such event of default. We would remain liable, however, for such payments.

In addition to the foregoing, at our option, we will be discharged from all our obligations under the indenture (except for certain obligations to register the transfer of or to exchange such notes and provide compensation and reimbursement of expenses to the trustee) in respect of the notes of a series of which all of the notes have been delivered to the trustee for cancellation (other than destroyed, lost or stolen notes that have been replaced or paid) or that have matured or will mature or be redeemed within one year (where arrangements satisfactory to the trustee for giving notice of redemption have been made), if we, among other things, irrevocably deposit with the trustee, in trust, money or Federal Republic of Germany obligations (or a combination thereof) sufficient to pay the principal of and any premium or interest on the applicable notes when due.

“Federal Republic of Germany obligations” means direct noncallable obligations of the Federal Republic of Germany, noncallable obligations the payment of the principal of and interest on which is fully guaranteed by the Federal Republic of Germany, and noncallable obligations on which the full faith and credit of the Federal Republic of Germany is pledged to the payment of the principal thereof and interest thereon.

Governing Law

The indenture and the notes will be governed by, and construed and enforced in accordance with, the laws of the State of Illinois applicable to agreements made or instruments entered into and, in each case, performed in said state.

Relationship with Trustee

The Bank of New York Mellon Trust Company, N.A. currently serves as the trustee with respect to certain of our other outstanding debt securities.

Open Market Purchases

We may at any time and from time to time purchase notes in the open market or otherwise.

(Back To Top)

Section 4: EX-4.L (EXHIBIT 4.L)

Exhibit 4(l)

Description of 1.25% Euro Notes due 2023 and 2.125% Euro Notes due 2030
Registered Pursuant to Section 12
of the Securities Exchange Act of 1934

The following summary of the Company's above referenced debt securities, each issued as a separate class thereof, is based on and qualified by the Indenture, dated November 1, 1986, as supplemented by a First Supplemental Indenture, dated May 1, 1990, between Illinois Tool Works Inc. and The Bank of New York Mellon Trust Company, N.A., as successor trustee (the "trustee"), with certain terms of each series of notes being set forth in an officers' certificate (together, the "indenture"), and the 1.25% Euro Notes due 2023 and the 2.125% Euro Notes due 2030 (collectively, the "Notes"). For a complete description of the terms and provisions of the Notes, refer to the Indenture and to the Officers' Certificate establishing the terms, and setting forth the forms, of the Notes, each of, which is filed as an exhibit to this Annual Report on Form 10-K. Throughout this exhibit, references to "we," "our," and "us" refer to Illinois Tool Works Inc.

General

On May 19, 2015, we registered €500,000,000 aggregate principal amount of 1.250% notes due 2023 (the "2023 notes") and €500,000,000 aggregate principal amount of 2.125% notes due 2030 (the "2030 notes," and together with the 2023 notes referred to in this section, the "notes"). The notes were issued each as a separate series of debt securities under the Indenture, dated November 1, 1986, as supplemented by a First Supplemental Indenture, dated May 1, 1990, between us and The Bank of New York Mellon Trust Company, N.A., as successor trustee (the "trustee"), with certain terms of each series of notes being set forth in an officers' certificate (together, the "indenture").

The 2023 notes are traded on the New York Stock Exchange under the symbol "ITW23." The 2030 notes are traded on the New York Stock Exchange under the symbol "ITW30."

We have issued a significant amount of other debt securities under the Indenture that have neither been registered pursuant to Section 12 of the Securities Exchange Act of 1934 nor listed on the NYSE. You should refer to our description of the amount of debt outstanding as disclosed in our Annual Report on Form 10-K and in other filings with the Securities and Exchange Commission.

Ranking

The notes are our direct, unsecured obligations. They rank equally with all of our other unsecured and unsubordinated indebtedness from time to time outstanding. The notes are effectively subordinated to all of our existing and future secured indebtedness to the extent of the value of the collateral securing such indebtedness and structurally subordinated to all of the existing and future indebtedness and other liabilities of our subsidiaries.

Payments in Euros

All payments of interest and principal, including payments made upon any redemption of the notes, will be payable in euros. If the euro is unavailable to us due to the imposition of exchange controls or other circumstances beyond our control or if the euro is no longer being used by the then-member states of the European Monetary Union that have adopted the euro as their currency or for the settlement of transactions by public institutions of or within the international banking community, then all payments in respect of the notes will be made in U.S. dollars until the euro is again available to us or so used. In such circumstances, the amount payable on any date in euros will be converted into U.S. dollars on the basis of the most recently available market exchange rate for euros. Any payment in respect of the notes so made in U.S. dollars will not constitute an event of default under the notes or the indenture governing the notes. Neither the trustee nor the paying agent shall have any responsibility for any calculation or conversion in connection with the foregoing.

Investors are subject to foreign exchange risks as to payments of principal and interest that may have important economic and tax consequences to them.

Principal, Interest Payments and Maturity

The 2023 notes are limited to €500,000,000 aggregate principal amount and will mature on May 22, 2023. The 2030 notes are limited to €500,000,000 aggregate principal amount and will mature on May 22, 2030.

The notes of each series bear interest at a rate of 1.25% and 2.125%, respectively, accruing from May 22, 2015 or the most recent interest payment date to which interest has been paid or provided for. We pay interest on the notes annually in arrears on May 22 of each year, beginning on May 22, 2016, to persons in whose names the notes are registered at the close of business on the preceding May 1. With respect to each series of notes, we compute the amount of interest payable on the basis of (i) the actual number of days in the period for which interest is being calculated and (ii) the actual number of days from (and including) the last date on which interest was paid on the notes of such series (or May 22, 2015, if no interest has been paid on the notes of such series) to (but excluding) the next scheduled interest payment date. This payment convention is referred to as ACTUAL/ACTUAL (ICMA) as defined in the rulebook of the International Capital Market Association.

The notes may be registered for transfer or exchanged without payment of any charge (other than any tax or other governmental charge payable in connection therewith).

The notes do not have the benefit of any sinking fund and are not convertible or exchangeable.

Optional Redemption

We may redeem the notes of each series, in whole or in part, on any date that is not less than three months prior to the stated maturity thereof, at our option, at a redemption price (calculated by us) equal to the greater of:

(1) 100% of the principal amount of the notes to be redeemed; or

(2) the sum of the present values of the Remaining Scheduled Payments (as defined below) of principal and interest on the notes to be redeemed (not including any portion of such payments of interest accrued as of the date of redemption) discounted to the date of redemption on an annual basis (ACTUAL/ACTUAL (ICMA)) at the applicable Comparable Government Bond Rate (as defined below) plus 15 basis points for the 2023 notes and 25 basis points for the 2030 notes, plus accrued and unpaid interest on the principal amount being redeemed to, but excluding, the redemption date.

At any time on or after the date that is three months prior to the maturity date of the 2023 notes or the 2030 notes, if applicable, we may also redeem some or all of the maturing 2023 notes or 2030 notes, as applicable, at our option, at a redemption price equal to 100% of the principal amount of the applicable notes being redeemed, plus accrued and unpaid interest on the principal amount being redeemed to, but excluding, the redemption date.

"Comparable Government Bond Rate" means, with respect to any redemption date, the price, expressed as a percentage (rounded to three decimal places, with 0.0005 being rounded upwards), at which the gross redemption yield on the notes to be redeemed, if they were to be purchased at such price on the third business day prior to the date fixed for redemption, would be equal to the gross redemption yield on such business day of the Comparable Government Bond (as defined below) on the basis of the middle market price of the Comparable Government Bond prevailing at 11:00 a.m. (London time) on such business day as determined by an independent investment bank selected by us.

"Comparable Government Bond" means, in relation to any Comparable Government Bond Rate calculation, at the discretion of an independent investment bank selected by us, a German government bond whose maturity is closest to the maturity of the notes to be redeemed, or if such independent investment bank in its discretion determines that such similar bond is not in issue, such other German government bond as such independent investment bank may, with the advice of three brokers of, and/or market makers in, German government bonds selected by us, determine to be appropriate for determining the Comparable Government Bond Rate.

“Remaining Scheduled Payments” means, with respect to each note to be redeemed, the remaining scheduled payments of the principal thereof and interest thereon that would be due after the related redemption date but for such redemption; provided, however, that, if such redemption date is not an interest payment date with respect to such note, the amount of the next succeeding scheduled interest payment thereon will be deemed to be reduced by the amount of interest accrued thereon to such redemption date.

We will, or will cause the trustee on our behalf to, mail notice of a redemption to holders of the applicable notes to be redeemed by first-class mail (or otherwise transmit in accordance with applicable procedures of Euroclear/Clearstream) at least 30 and not more than 60 days prior to the date fixed for redemption. Unless we default in payment of the redemption price, on and after the redemption date, interest will cease to accrue on the applicable notes or portions thereof called for redemption. On or before the redemption date, we will deposit with the paying agent or set aside, segregate and hold in trust (if we are acting as paying agent), funds sufficient to pay the redemption price of, and accrued and unpaid interest on, such notes to be redeemed on that redemption date. If fewer than all of the notes of the applicable series are to be redeemed, the trustee will select, not more than 60 days prior to the redemption date, the particular notes of such series or portions thereof for redemption from the outstanding notes of such series not previously called by such method as the trustee deems fair and appropriate and in accordance with the applicable procedures of the depositary; provided, however, that no notes of a principal amount of €100,000 or less shall be redeemed in part.

Payment of Additional Amounts

All payments of principal and interest on the notes by us are made free and clear of and without withholding or deduction for or on account of any present or future tax, assessment or other governmental charge imposed by the United States (or any political subdivision or taxing authority thereof or therein having power to tax) (a “Relevant Taxing Jurisdiction”), unless the withholding of such taxes, assessments or other governmental charge is required by law or the official interpretation or administration thereof. Subject to the exceptions and limitations set forth below, we pay as additional interest on notes such additional amounts (the “additional amounts”) as are necessary in order that the net payment by us of the principal of and interest on such notes to a holder who is not a United States person (as defined below), after withholding or deduction for any present or future tax, assessment or other governmental charge imposed by any Relevant Taxing Jurisdiction, will not be less than the amount provided in such notes to be then due and payable; provided, however, that the foregoing obligation to pay additional amounts shall not apply:

1. to any tax, assessment or other governmental charge that is imposed by reason of the holder (or the beneficial owner for whose benefit such holder holds such note), or a fiduciary, settlor, beneficiary, member or shareholder of the holder if the holder is an estate, trust, partnership or corporation, or a person holding a power over an estate or trust administered by a fiduciary holder, being considered as:

    a. being or having been engaged in a trade or business in a Relevant Taxing Jurisdiction or having or having had a permanent establishment in the Relevant Taxing Jurisdiction;

    b. having a current or former connection with the Relevant Taxing Jurisdiction (other than a connection arising solely as a result of the ownership of such notes, the receipt of any payment or the enforcement of any rights hereunder), including being or having been a citizen or resident of the Relevant Taxing Jurisdiction;

    c. being or having been a foreign or domestic personal holding company, a passive foreign investment company or a controlled foreign corporation for United States income tax purposes or a corporation that has accumulated earnings to avoid United States federal income tax;

    d. being or having been a “10-percent shareholder” of ITW as defined in section 871(h)(3) of the United States Internal Revenue Code of 1986, as amended (the “Code”) or any successor provision; or

e. being or having been a bank receiving payments on an extension of credit made pursuant to a loan agreement entered into in the ordinary course of its trade or business, as described in section 881(c)(3)(A) of the Code or any successor provisions;

2. to any holder that is not the sole beneficial owner of such notes, or a portion of such notes, or that is a fiduciary, partnership or limited liability company, but only to the extent that a beneficial owner with respect to the holder, a beneficiary or settlor with respect to the fiduciary, or a beneficial owner or member of the partnership or limited liability company would not have been entitled to the payment of an additional amount had the beneficiary, settlor, beneficial owner or member received directly its beneficial or distributive share of the payment;

3. to any tax, assessment or other governmental charge that would not have been imposed but for the failure of the holder, beneficial owner or any other person to (a) submit an applicable United States Internal Revenue Service ("IRS") Form W-8 (with any required attachments) to establish the status as a non-United States person as required for purposes of the portfolio interest exemption or IRS Form W-9 to establish the status as a United States person, or comply with other certification, identification or information reporting requirements concerning the nationality, residence, identity or connection with a Relevant Taxing Jurisdiction of the holder or beneficial owner of such notes, if compliance is required by statute, by regulation of the Relevant Taxing Jurisdiction or by an applicable income tax treaty to which the Relevant Taxing Jurisdiction is a party as a precondition to exemption from such tax, assessment or other governmental charge or (b) comply with any information gathering and reporting requirements or take any similar action (including entering into any agreement with the IRS), in each case, that is required to obtain the maximum available exemption from withholding by a Relevant Taxing Jurisdiction that is available to payments received by or on behalf of the holder or beneficial owner;

4. to any tax, assessment or other governmental charge that is imposed otherwise than by withholding by us or a paying agent from the payment;

5. to any tax, assessment or other governmental charge that would not have been imposed or withheld but for a change in law, regulation, or administrative or judicial interpretation that becomes effective more than 15 days after the payment becomes due or is duly provided for, whichever occurs later;

6. to any estate, inheritance, gift, sales, excise, transfer, wealth, capital gains or personal property tax or similar tax, assessment or other governmental charge;

7. to any withholding or deduction that is imposed on a payment and that is required to be made pursuant to European Council Directive 2003/48/EC or any other Directive amending, supplementing or replacing such Directive, or any law implementing or complying with, or introduced in order to conform to, such Directive or Directives;

8. to any tax, assessment or other governmental charge required to be withheld by any paying agent from any payment of principal of or interest on any note, if such payment can be made without such withholding by at least one other paying agent;

9. to any tax, assessment or other governmental charge that would not have been imposed or levied but for the presentation by the holder of any note, where presentation is required, for payment on a date more than 30 days after the date on which payment became due and payable or the date on which payment thereof is duly provided for, whichever occurs later;

10. to any tax, assessment or other governmental charge imposed under sections 1471 through 1474 of the Code as of the issue date (or any amended or successor provisions), any current or future regulations or official interpretations thereof, any agreement entered into pursuant to section 1471(b) of the Code or any fiscal or regulatory legislation, rules or practices adopted pursuant to any intergovernmental agreement entered into in connection with the implementation of such sections of the Code; or

11. in the case of any combination of items (1) through (10) above.

The notes are subject in all cases to any tax, fiscal or other law or regulation or administrative or judicial interpretation applicable to the notes. Except as specifically provided under this heading "— Payment of Additional Amounts," we will not be required to make any payment for any tax, assessment or other governmental charge imposed by any government or a political subdivision or taxing authority of or in any government or political subdivision.

As used under this heading "— Payment of Additional Amounts" and under the heading "— Redemption for Tax Reasons," the term "United States" means the United States of America, the states of the United States, and the District of Columbia, and the term "United States person" means any individual who is a citizen or resident of the United States for U.S. federal income tax purposes, a corporation, partnership or other entity created or organized in or under the laws of the United States, any state of the United States or the District of Columbia, or any estate the income of which is subject to United States federal income taxation regardless of its source, or a trust that (1) is subject to the primary supervision of a United States court and the control of one or more "United States persons" (within the meaning of section 7701(a)(30) of the Code), or (2) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Redemption for Tax Reasons

If, (a) as a result of any change in, or amendment to, the laws (or any regulations or rulings promulgated under the laws) of any Relevant Taxing Jurisdiction, or any change in, or amendments to, an official position regarding the application or interpretation of such laws, regulations or rulings (including by virtue of a holding, judgment or order by a court of competent jurisdiction or a change in published administrative practice), which change or amendment is announced or becomes effective on or after the date of this prospectus supplement, we become or, based on a written opinion of independent counsel selected by us, are likely to become obligated to pay additional amounts as described herein under the heading "— Payment of Additional Amounts" with respect to the notes of either series, or (b) any act is taken by a Relevant Taxing Jurisdiction on or after the date of this prospectus supplement whether or not such act is taken with respect to us or any affiliate, that results in us being required or, based upon a written opinion of independent counsel selected by us, being likely to be required to pay such additional amounts, then we may at any time at our option redeem, in whole, but not in part, the notes of such series on not less than 15 nor more than 60 days' prior notice, at a redemption price equal to 100% of their principal amount, together with accrued and unpaid interest on the notes being redeemed to, but excluding, the redemption date.

Covenants

The following covenants apply to the notes. Each of the covenants is subject to the provision for exempted indebtedness described below.

For your reference, we have provided below definitions of the capitalized terms used in the description of the covenants.

Limitation on Liens

We will not, nor will we permit any Restricted Subsidiary to, issue, assume or guarantee any debt for money borrowed if such debt is secured by a mortgage, security interest, lien, pledge or other encumbrance (referred to in this prospectus supplement as a “lien”) on any Principal Property, or on any shares of stock or indebtedness of any Restricted Subsidiary, without in any such case effectively providing that the notes (and if we so choose, any other debt or obligation that ranks equally with the notes) are secured equally and ratably with, or prior to, such debt. These restrictions do not apply to debt secured by:

- liens on property of a corporation existing at the time it becomes a subsidiary or at the time it is merged into or consolidated with or purchased by us or a subsidiary;
- liens on property existing at the time of its acquisition and certain purchase money liens;
- liens securing the cost of construction of new plants, incurred within 180 days of completion of construction;
- liens securing the debt of a Restricted Subsidiary owing to us or another Restricted Subsidiary;
- liens in connection with the issuance of certain industrial revenue bonds or similar financings;
- liens existing on the date of the indenture;
- certain other liens specified in the indenture that are customarily exempted from restrictions in offerings of securities similar to the notes; and
- any extensions, renewals or replacements, in whole or in part, of any lien referred to above, as long as the principal amount of debt secured by any such lien does not increase and the lien is limited to all or part of the same property that previously secured the lien.

Limitation on Sale and Lease-Back

We will not, nor will we permit any Restricted Subsidiary to, engage in a sale and lease-back transaction of any Principal Property (except for certain temporary leases and leases with a Restricted Subsidiary) unless:

- we or the Restricted Subsidiary could (subject to the limitation on liens) incur debt secured by a lien on the Principal Property to be leased without equally and ratably securing the notes; or
- within 180 days following such a transaction, we retire long-term debt equal to the value of the transaction.

Exempted Indebtedness

We and our Restricted Subsidiaries may incur debt and enter into sale and lease-back transactions without regard to the two covenants described above if the sum of such debt and the value of such sale and lease-back transactions on a cumulative basis does not exceed 10% of the Consolidated Net Tangible Assets (which is total assets less current liabilities, goodwill and other intangibles) as shown on our audited consolidated balance sheet in our latest annual report to our stockholders.

Definitions

"Principal Property" means any manufacturing plant or other facility within the United States that we or a subsidiary own or lease, unless our Board of Directors determines that the plant or facility, together with any others so determined, is not of material importance to the total business of us and our Restricted Subsidiaries.

"Restricted Subsidiary" means any subsidiary (other than a subsidiary principally engaged in leasing or financing installment receivables or financing operations outside the United States) that owns or leases a Principal Property if:

- substantially all of its property is located in the United States;
- substantially all of its business is carried on in the United States; or
- it is incorporated in any State of the United States.

Consolidation or Merger

Under the terms of the indenture, we may consolidate or merge with another corporation or sell, convey or lease all or substantially all of our assets to another corporation or entity. The successor or acquiring corporation or entity must expressly assume all of our responsibilities and liabilities under the indenture, including the payment of all amounts due on the notes and performance of the covenants (it being understood that any obligation to pay Additional Amounts shall be determined mutatis mutandis, by treating the jurisdiction under the laws of which such successor or acquiring corporation or entity is organized and any political subdivision or taxing authority as therein having the power to tax, as a Relevant Taxing Jurisdiction). If, upon any such consolidation, merger, sale, conveyance or lease, or upon any such consolidation, merger, sale, conveyance or lease with respect to a Restricted Subsidiary, any Principal Property or shares of stock or indebtedness of a Restricted Subsidiary would become subject to a lien that is not in favor of us, a Restricted Subsidiary or any such successor or acquiring corporation or entity, we must, before or at the time of such transaction, effectively provide that the notes will be secured (if we so choose, equally and ratably with any other obligation of us or a Restricted Subsidiary that ranks equally with the notes) by a direct lien on such Principal Property or shares of stock or indebtedness of a Restricted Subsidiary that is prior to all liens other than pre-existing liens on such Principal Property or shares of stock or indebtedness of a Restricted Subsidiary, and that will continue as long as such Principal Property, shares of stock or indebtedness is subject to the lien arising in such transaction.

Events of Default

An event of default for any series of the notes includes the following:

- failure to pay any installment of interest, including any additional amounts on the notes of that series that continues for 30 days after such payment is due;
- failure to pay principal of or premium, if any, on the notes of that series when due;
- failure to perform any of the other covenants or agreements in the notes or in the indenture and relating to the notes of that series that continues for 60 days after notice to us by the trustee or holders of at least 25% in aggregate principal amount of the outstanding notes of that series; or
- certain events of bankruptcy, insolvency or reorganization of us.

An event of default with respect to a particular series of notes issued under the indenture does not necessarily constitute an event of default with respect to any other series. The indenture provides that the trustee will, with certain exceptions, notify the holders of the affected series of notes of the occurrence of any of the events of default listed above (not including any applicable grace period and irrespective of the giving of notice as described in the third bullet) known to the trustee within 90 days after the occurrence thereof. Except in the case of a default in the payment of principal of, or premium, if any, or interest on a series of the notes, the trustee may withhold notice if it determines in good faith that withholding notice is in the interest of the holders.

If an event of default is continuing for any series of the notes, the trustee or the holders of not less than 25% in aggregate principal amount of the affected series of notes then outstanding may declare the principal amount of that series of the notes to be due and payable immediately. In such a case, subject to certain conditions, the holders of a majority in aggregate principal amount of that series of the notes then outstanding can annul the declaration and waive past defaults.

We are required to provide an annual officers' certificate to the trustee concerning our compliance with certain covenants we make in the indenture. Subject to the provisions of the indenture relating to the duties of the trustee, the trustee is not obligated to exercise any of its rights or powers at the request or direction of any of the holders of notes unless the holders have offered the trustee security or indemnity reasonably satisfactory to the trustee. The holders of a majority in principal amount of the outstanding notes of each series affected by an event of default may direct the time, method and place of conducting any proceeding for any remedy available to the trustee under the indenture or exercising any of the trustee's trusts or powers with respect to that series of the notes; however, the trustee may decline to follow such direction in certain circumstances.

If the euro is unavailable to us due to the imposition of exchange controls or other circumstances beyond our control or if the euro is no longer being used by the then-member states of the European Monetary Union that have adopted the euro as their currency or for the settlement of transactions by public institutions of or within the international banking community, then all payments in respect of the notes will be made in U.S. dollars until the euro is again available to us or so used. The amount payable on any date in euros will be converted into U.S. dollars on the basis of the most recently available market exchange rate for euros. Any payment in respect of the notes so made in U.S. dollars will not constitute an event of default. Neither the trustee nor the paying agent shall have any responsibility for effecting such currency conversions.

Modification and Amendment of the Indenture

We may enter into supplemental indentures with the trustee without the consent of the holders of the notes to, among other things:

- evidence the assumption by a successor corporation of our obligations under the indenture;
- appoint additional or separate trustees to act under the indenture;
- add covenants for the protection of the holders of the notes; and
- cure any ambiguity or correct any inconsistency in the indenture.

With the consent of the holders of a majority in aggregate principal amount of the notes of each affected series issued under the indenture at the time outstanding, we may execute supplemental indentures with the trustee to add provisions or change or eliminate any provision of the indenture or any supplemental indenture relating to such series or to modify the rights of the holders of those notes. However, no such supplemental indenture will (1) extend the fixed maturity of any notes, reduce the principal amount (including in the case of discounted notes the amount payable upon acceleration of the maturity thereof), reduce the rate or extend the time of payment of any interest, reduce any premium payable upon redemption, or change the currency in which any notes are payable, without the consent of each holder of affected notes, or (2) reduce the aforesaid majority in principal amount of the notes of any series, the consent of the holders of which is required for any such supplemental indenture, without the consent of the holders of all notes of such series.

Defeasance and Discharge of Indenture or Certain Obligations; Satisfaction and Discharge

At our option, we (1) will be discharged from all obligations under the indenture in respect of the notes of a series (except for certain obligations to register the transfer of or to exchange such notes, replace stolen, lost or mutilated notes, maintain paying agencies and hold monies for payment in trust) or (2) need not comply with certain covenants of the indenture that are applicable to each series of notes (including the limitation on liens and the limitation on sale and lease-back) and will not be limited by the restrictions in the indenture with respect to merger, consolidation or sale, conveyance or lease of substantially all of our assets, in each case if we irrevocably deposit with the trustee, in trust, money or Federal Republic of Germany obligations (or a combination thereof) sufficient to pay the principal of and any premium or interest on the applicable notes when due and satisfy other conditions in the indenture. In order to select either option, we must provide the trustee, among other things, an opinion of counsel based on a ruling from or published by the Internal Revenue Service (in the case of option (1)), or an opinion of counsel (in the case of option (2)), in each case to the effect that beneficial owners of the applicable notes will not recognize income, gain or loss for U.S. federal income tax purposes as a result of our exercise of the option, and will be subject to U.S. federal income tax on the same amounts and in the same manner and at the same times as if we had not exercised such option.

In the event we exercise our option under (2) above with respect to any series of notes and the notes of such series are declared due and payable because of the occurrence of any event of default other than default with respect to such obligations, the amount of money and Federal Republic of Germany obligations on deposit with the trustee will be sufficient to pay amounts due on the notes of that series at the time of their stated maturity but may not be sufficient to pay amounts due on the notes of that series at the time of the acceleration resulting from such event of default. We would remain liable, however, for such payments.

In addition to the foregoing, at our option, we will be discharged from all our obligations under the indenture (except for certain obligations to register the transfer of or to exchange such notes and provide compensation and reimbursement of expenses to the trustee) in respect of the notes of a series of which all of the notes have been delivered to the trustee for cancellation (other than destroyed, lost or stolen notes that have been replaced or paid) or that have matured or will mature or be redeemed within one year (where arrangements satisfactory to the trustee for giving notice of redemption have been made), if we, among other things, irrevocably deposit with the trustee, in trust, money or Federal Republic of Germany obligations (or a combination thereof) sufficient to pay the principal of and any premium or interest on the applicable notes when due.

"Federal Republic of Germany obligations" means direct noncallable obligations of the Federal Republic of Germany, noncallable obligations the payment of the principal of and interest on which is fully guaranteed by the Federal Republic of Germany, and noncallable obligations on which the full faith and credit of the Federal Republic of Germany is pledged to the payment of the principal thereof and interest thereon.

Governing Law

The indenture and the notes will be governed by, and construed and enforced in accordance with, the laws of the State of Illinois applicable to agreements made or instruments entered into and, in each case, performed in said state.

Relationship with Trustee and Paying Agent

The Bank of New York Mellon Trust Company, N.A. currently serves as the trustee with respect to certain of our other outstanding debt securities, and The Bank of New York Mellon, London Branch currently serves as the paying agent with respect to certain of our other outstanding debt securities.

Open Market Purchases

We may at any time and from time to time purchase notes in the open market or otherwise.

(Back To Top)

Section 5: EX-4.M (EXHIBIT 4.M)

Exhibit 4(m)

Description of 0.250% Euro Notes due 2024, 0.625% Euro Notes due 2027 and 1.00% Euro Notes due 2031
Registered Pursuant to Section 12
of the Securities Exchange Act of 1934

The following summary of the Company's above referenced debt securities, each issued as a separate class thereof, is based on and qualified by the Indenture, dated November 1, 1986, as supplemented by a First Supplemental Indenture, dated May 1, 1990, between Illinois Tool Works Inc. and The Bank of New York Mellon Trust Company, N.A., as successor trustee (the "trustee"), with certain terms of each series of notes being set forth in an officers' certificate (together, the "indenture"), and the 0.250% Euro Notes due 2024, the 0.625% Euro Notes due 2027 and the 1.00% Euro Notes due 2031 (collectively, the "Notes"). For a complete description of the terms and provisions of the Notes, refer to the Indenture and to the Officers' Certificate establishing the terms, and setting forth the forms, of the Notes, each of which is filed as an exhibit to this Annual Report on Form 10-K. Throughout this exhibit, references to "we," "our," and "us" refer to Illinois Tool Works Inc.

General

On May 29, 2019, we registered €600,000,000 aggregate principal amount of 0.250% Notes due 2024 (the "2024 notes"), €500,000,000 aggregate principal amount of 0.625% Notes due 2027 (the "2027 notes") and €500,000,000 aggregate principal amount of 1.000% Notes due 2031 (the "2031 notes," and together with the 2024 notes and the 2027 notes referred to in this section, the "notes"). The notes were issued each as a separate series of debt securities under the Indenture, dated November 1, 1986, as supplemented by a First Supplemental Indenture, dated May 1, 1990, between us and The Bank of New York Mellon Trust Company, N.A., as successor trustee (the "trustee"), with certain terms of each series of notes being set forth in an officers' certificate (together, the "indenture").

The 2024 notes are traded on the New York Stock Exchange under the symbol "ITW24A." The 2027 notes are traded on the New York Stock Exchange under the symbol "ITW27." The 2031 notes are traded on the New York Stock Exchange under the symbol "ITW31."

We have issued a significant amount of other debt securities under the Indenture that have neither been registered pursuant to Section 12 of the Securities Exchange Act of 1934 nor listed on the NYSE. You should refer to our description of the amount of debt outstanding as disclosed in our Annual Report on Form 10-K and in other filings with the Securities and Exchange Commission.

Ranking

The notes are our direct, unsecured obligations. They rank equally with all of our other unsecured and unsubordinated indebtedness from time to time outstanding. The notes are effectively subordinated to all of our existing and future secured indebtedness to the extent of the value of the collateral securing such indebtedness and structurally subordinated to all of the existing and future indebtedness and other liabilities of our subsidiaries.

Payments in Euros

All payments of interest and principal, including payments made upon any redemption of the notes, will be payable in euros. If the euro is unavailable to us due to the imposition of exchange controls or other circumstances beyond our control or if the euro is no longer being used by the then-member states of the European Monetary Union that have adopted the euro as their currency or for the settlement of transactions by public institutions of or within the international banking community, then all payments in respect of the notes will be made in U.S. dollars until the euro is again available to us or so used. In such circumstances, the amount payable on any date in euros will be converted into U.S. dollars on the basis of the most recently available market exchange rate for euros. Any payment in respect of the notes so made in U.S. dollars will not constitute an event of default under the notes or the indenture governing the notes. Neither the trustee nor the paying agent shall have any responsibility for any calculation or conversion in connection with the foregoing.

Investors are subject to foreign exchange risks as to payments of principal and interest that may have important economic and tax consequences to them.

Principal, Interest Payments and Maturity

The 2024 notes are limited to €600,000,000 aggregate principal amount and will mature on December 5, 2024. The 2027 notes are limited to €500,000,000 aggregate principal amount and will mature on December 5, 2027. The 2031 notes are limited to €500,000,000 aggregate principal amount and will mature on June 5, 2031.

The notes of each series bear interest at a rate of 0.250%, 0.625% and 1.000%, respectively, accruing from June 5, 2019. We pay interest on the 2024 notes and the 2027 notes annually in arrears on December 5 of each year, beginning on December 5, 2019, to persons in whose names the notes are registered at the close of business on the preceding December 1. We will pay interest on the 2031 notes annually in arrears on June 5 of each year, beginning on June 5, 2020, to persons in whose names the notes are registered at the close of business on the preceding June 1. With respect to each series of notes, we compute the amount of interest payable on the basis of (i) the actual number of days in the period for which interest is being calculated and (ii) the actual number of days from (and including) the last date on which interest was paid on the notes of such series (or June 5, 2019, if no interest has been paid on the notes of such series) to (but excluding) the next scheduled interest payment date. This payment convention is referred to as ACTUAL/ACTUAL (ICMA) as defined in the rulebook of the International Capital Market Association.

The notes may be registered for transfer or exchanged without payment of any charge (other than any tax or other governmental charge payable in connection therewith).

The notes do not have the benefit of any sinking fund and are not convertible or exchangeable.

Optional Redemption

We may redeem the notes of each series, in whole or in part, on any date that is not less than three months prior to the stated maturity thereof, at our option, at a redemption price (calculated by us) equal to the greater of:

(1) 100% of the principal amount of the notes to be redeemed; or

(2) the sum of the present values of the Remaining Scheduled Payments (as defined below) of principal and interest on the notes to be redeemed (not including any portion of such payments of interest accrued as of the date of redemption) discounted to the date of redemption on an annual basis (ACTUAL/ACTUAL (ICMA)) at the applicable Comparable Government Bond Rate (as defined below) plus 15 basis points for the 2024 notes, 20 basis points for the 2027 notes and 20 basis points for the 2031 notes, plus accrued and unpaid interest on the principal amount being redeemed to, but excluding, the redemption date.

At any time on or after the date that is three months prior to the maturity date of the 2024 notes, the 2027 notes or the 2031 notes, as applicable, we may also redeem some or all of the maturing 2024 notes, 2027 notes or 2031 notes, as applicable, at our option, at a redemption price equal to 100% of the principal amount of the applicable notes being redeemed, plus accrued and unpaid interest on the principal amount being redeemed to, but excluding, the redemption date.

"Comparable Government Bond Rate" means, with respect to any redemption date, the price, expressed as a percentage (rounded to three decimal places, with 0.0005 being rounded upwards), at which the gross redemption yield on the notes to be redeemed, if they were to be purchased at such price on the third business day prior to the date fixed for redemption, would be equal to the gross redemption yield on such business day of the Comparable Government Bond (as defined below) on the basis of the middle market price of the Comparable Government Bond prevailing at 11:00 a.m. (London time) on such business day as determined by an independent investment bank selected by us.

"Comparable Government Bond" means, in relation to any Comparable Government Bond Rate calculation, at the discretion of an independent investment bank selected by us, a German government bond whose maturity is closest to the maturity of the notes to be redeemed, or if such independent investment bank in its discretion determines that such similar bond is not in issue, such other German government bond as such independent investment bank may, with the advice of three brokers of, and/or market makers in, German government bonds selected by us, determine to be appropriate for determining the Comparable Government Bond Rate.

"Remaining Scheduled Payments" means, with respect to each note to be redeemed, the remaining scheduled payments of the principal thereof and interest thereon that would be due after the related redemption date but for such redemption; provided, however, that, if such redemption date is not an interest payment date with respect to such note, the amount of the next succeeding scheduled interest payment thereon will be deemed to be reduced by the amount of interest accrued thereon to such redemption date.

We will, or will cause the trustee on our behalf to, mail notice of a redemption to holders of the applicable notes to be redeemed by first-class mail (or otherwise transmit in accordance with applicable procedures of Euroclear/Clearstream) at least 30 and not more than 60 days prior to the date fixed for redemption. Unless we default in payment of the redemption price, on and after the redemption date, interest will cease to accrue on the applicable notes or portions thereof called for redemption. On or before the redemption date, we will deposit with the paying agent or set aside, segregate and hold in trust (if we are acting as paying agent), funds sufficient to pay the redemption price of, and accrued and unpaid interest on, such notes to be redeemed on that redemption date. If fewer than all of the notes of the applicable series are to be redeemed, the notes to be redeemed shall be selected in accordance with the procedures of the clearing systems, and in the case the notes are no longer in global form or the clearing systems have no procedures, the trustee will select, not more than 60 days prior to the redemption date, the particular notes of such series or portions thereof for redemption from the outstanding notes of such series not previously called by such method as the trustee deems fair and appropriate and in accordance with the applicable procedures of the depositary; provided, however, that no notes of a principal amount of €100,000 or less shall be redeemed in part.

Payment of Additional Amounts

All payments of principal and interest on the notes by us are made free and clear of and without withholding or deduction for or on account of any present or future tax, assessment or other governmental charge imposed by the United States (or any political subdivision or taxing authority thereof or therein having power to tax) (a "Relevant Taxing Jurisdiction"), unless the withholding of such taxes, assessments or other governmental charge is required by law or the official interpretation or administration thereof. Subject to the exceptions and limitations set forth below, we pay as additional interest on notes such additional amounts (the "additional amounts") as are necessary in order that the net payment by us of the principal of and interest on such notes to a holder who is not a United States person (as defined below), after withholding or deduction for any present or future tax, assessment or other governmental charge imposed by any Relevant Taxing Jurisdiction, will not be less than the amount provided in such notes to be then due and payable; provided, however, that the foregoing obligation to pay additional amounts shall not apply:

1. to any tax, assessment or other governmental charge that is imposed by reason of the holder (or the beneficial owner for whose benefit such holder holds such note), or a fiduciary, settlor, beneficiary, member or shareholder of the holder if the holder is an estate, trust, partnership or corporation, or a person holding a power over an estate or trust administered by a fiduciary holder, being considered as:

    a. being or having been engaged in a trade or business in a Relevant Taxing Jurisdiction or having or having had a permanent establishment in the Relevant Taxing Jurisdiction;

b. having a current or former connection with the Relevant Taxing Jurisdiction (other than a connection arising solely as a result of the ownership of such notes, the receipt of any payment or the enforcement of any rights hereunder), including being or having been a citizen or resident of the Relevant Taxing Jurisdiction;

c. being or having been a personal holding company, a passive foreign investment company or a controlled foreign corporation for United States income tax purposes or a corporation that has accumulated earnings to avoid United States federal income tax;

d. being or having been a "10-percent shareholder" of ITW as defined in section 871(h)(3) of the United States Internal Revenue Code of 1986, as amended (the "Code") or any successor provision; or

e. being or having been a bank receiving payments on an extension of credit made pursuant to a loan agreement entered into in the ordinary course of its trade or business, as described in section 881(c)(3)(A) of the Code or any successor provisions;

2. to any holder that is not the sole beneficial owner of such notes, or a portion of such notes, or that is a fiduciary, partnership or limited liability company, but only to the extent that a beneficial owner with respect to the holder, a beneficiary or settlor with respect to the fiduciary, or a beneficial owner or member of the partnership or limited liability company would not have been entitled to the payment of an additional amount had the beneficiary, settlor, beneficial owner or member received directly its beneficial or distributive share of the payment;

3. to any tax, assessment or other governmental charge that would not have been imposed but for the failure of the holder, beneficial owner or any other person to (a) submit an applicable United States Internal Revenue Service ("IRS") Form W-8 (with any required attachments) to establish the status as a non-United States person as required for purposes of the portfolio interest exemption or IRS Form W-9 to establish the status as a United States person, or comply with other certification, identification or information reporting requirements concerning the nationality, residence, identity or connection with a Relevant Taxing Jurisdiction of the holder or beneficial owner of such notes, if compliance is required by statute, by regulation of the Relevant Taxing Jurisdiction or by an applicable income tax treaty to which the Relevant Taxing Jurisdiction is a party as a precondition to exemption from such tax, assessment or other governmental charge or (b) comply with any information gathering and reporting requirements or take any similar action (including entering into any agreement with the IRS), in each case, that is required to obtain the maximum available exemption from withholding by a Relevant Taxing Jurisdiction that is available to payments received by or on behalf of the holder or beneficial owner;

4. to any tax, assessment or other governmental charge that is imposed otherwise than by withholding by us or a paying agent from the payment;

5. to any tax, assessment or other governmental charge that would not have been imposed or withheld but for a change in law, regulation, or administrative or judicial interpretation that becomes effective more than 15 days after the payment becomes due or is duly provided for, whichever occurs later;

6. to any estate, inheritance, gift, sales, excise, transfer, wealth, capital gains or personal property tax or similar tax, assessment or other governmental charge;

7. to any tax, assessment or other governmental charge required to be withheld by any paying agent from any payment of principal of or interest on any note, if such payment can be made without such withholding by at least one other paying agent;

8. to any tax, assessment or other governmental charge that would not have been imposed or levied but for the presentation by the holder of any note, where presentation is required, for payment on a date more than 30 days after the date on which payment became due and payable or the date on which payment thereof is duly provided for, whichever occurs later;

9. to any tax, assessment or other governmental charge imposed under sections 1471 through 1474 of the Code as of the issue date (or any amended or successor provisions), any current or future regulations or official interpretations thereof, any agreement entered into pursuant to section 1471(b) of the Code or any fiscal or regulatory legislation, rules or practices adopted pursuant to any intergovernmental agreement entered into in connection with the implementation of such sections of the Code; or

10. in the case of any combination of items (1) through (9) above.

The notes are subject in all cases to any tax, fiscal or other law or regulation or administrative or judicial interpretation applicable to the notes. Except as specifically provided under this heading "— Payment of Additional Amounts," we will not be required to make any payment for any tax, assessment or other governmental charge imposed by any government or a political subdivision or taxing authority of or in any government or political subdivision.

As used under this heading "— Payment of Additional Amounts" and under the heading "— Redemption for Tax Reasons," the term "United States" means the United States of America, the states of the United States, and the District of Columbia, and the term "United States person" means any individual who is a citizen or resident of the United States for U.S. federal income tax purposes, a corporation, partnership or other entity created or organized in or under the laws of the United States, any state of the United States or the District of Columbia, or any estate the income of which is subject to United States federal income taxation regardless of its source, or a trust that (1) is subject to the primary supervision of a United States court and the control of one or more "United States persons" (within the meaning of section 7701(a)(30) of the Code), or (2) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Redemption for Tax Reasons

If, (a) as a result of any change in, or amendment to, the laws (or any regulations or rulings promulgated under the laws) of any Relevant Taxing Jurisdiction, or any change in, or amendments to, an official position regarding the application or interpretation of such laws, regulations or rulings (including by virtue of a holding, judgment or order by a court of competent jurisdiction or a change in published administrative practice), which change or amendment is announced or becomes effective on or after the date of this prospectus supplement, we become or, based on a written opinion of independent counsel selected by us, are likely to become obligated to pay additional amounts as described herein under the heading "— Payment of Additional Amounts" with respect to the notes of either series, or (b) any act is taken by a Relevant Taxing Jurisdiction on or after the date of this prospectus supplement whether or not such act is taken with respect to us or any affiliate, that results in us being required or, based upon a written opinion of independent counsel selected by us, being likely to be required to pay such additional amounts, then we may at any time at our option redeem, in whole, but not in part, the notes of such series on not less than 15 nor more than 60 days' prior notice, at a redemption price equal to 100% of their principal amount, together with accrued and unpaid interest on the notes being redeemed to, but excluding, the redemption date.

Covenants

The following covenants apply to the notes. Each of the covenants is subject to the provision for exempted indebtedness described below.

For your reference, we have provided below definitions of the capitalized terms used in the description of the covenants.

Limitation on Liens

We will not, nor will we permit any Restricted Subsidiary to, issue, assume or guarantee any debt for money borrowed if such debt is secured by a mortgage, security interest, lien, pledge or other encumbrance (referred to in this prospectus supplement as a “lien”) on any Principal Property, or on any shares of stock or indebtedness of any Restricted Subsidiary, without in any such case effectively providing that the notes (and if we so choose, any other debt or obligation that ranks equally with the notes) are secured equally and ratably with, or prior to, such debt. These restrictions do not apply to debt secured by:

- liens on property of a corporation existing at the time it becomes a subsidiary or at the time it is merged into or consolidated with or purchased by us or a subsidiary;
- liens on property existing at the time of its acquisition and certain purchase money liens;
- liens securing the cost of construction of new plants, incurred within 180 days of completion of construction;
- liens securing the debt of a Restricted Subsidiary owing to us or another Restricted Subsidiary;
- liens in connection with the issuance of certain industrial revenue bonds or similar financings;
- liens existing on the date of the indenture;
- certain other liens specified in the indenture that are customarily exempted from restrictions in offerings of securities similar to the notes; and
- any extensions, renewals or replacements, in whole or in part, of any lien referred to above, as long as the principal amount of debt secured by any such lien does not increase and the lien is limited to all or part of the same property that previously secured the lien.

Limitation on Sale and Lease-Back

We will not, nor will we permit any Restricted Subsidiary to, engage in a sale and lease-back transaction of any Principal Property (except for certain temporary leases and leases with a Restricted Subsidiary) unless:

- we or the Restricted Subsidiary could (subject to the limitation on liens) incur debt secured by a lien on the Principal Property to be leased without equally and ratably securing the notes; or
- within 180 days following such a transaction, we retire long-term debt equal to the value of the transaction.

Exempted Indebtedness

We and our Restricted Subsidiaries may incur debt and enter into sale and lease-back transactions without regard to the two covenants described above if the sum of such debt and the value of such sale and lease-back transactions on a cumulative basis does not exceed 10% of the Consolidated Net Tangible Assets (which is total assets less current liabilities, goodwill and other intangibles) as shown on our audited consolidated balance sheet in our latest annual report to our stockholders.

Definitions

"Principal Property" means any manufacturing plant or other facility within the United States that we or a subsidiary own or lease, unless our Board of Directors determines that the plant or facility, together with any others so determined, is not of material importance to the total business of us and our Restricted Subsidiaries.

"Restricted Subsidiary" means any subsidiary (other than a subsidiary principally engaged in leasing or financing installment receivables or financing operations outside the United States) that owns or leases a Principal Property if:

- substantially all of its property is located in the United States;
- substantially all of its business is carried on in the United States; or
- it is incorporated in any State of the United States.

Consolidation or Merger

Under the terms of the indenture, we may consolidate or merge with another corporation or sell, convey or lease all or substantially all of our assets to another corporation or entity. The successor or acquiring corporation or entity must expressly assume all of our responsibilities and liabilities under the indenture, including the payment of all amounts due on the notes and performance of the covenants (it being understood that any obligation to pay additional amounts shall be determined mutatis mutandis, by treating the jurisdiction under the laws of which such successor or acquiring corporation or entity is organized and any political subdivision or taxing authority as therein having the power to tax, as a Relevant Taxing Jurisdiction). If, upon any such consolidation, merger, sale, conveyance or lease, or upon any such consolidation, merger, sale, conveyance or lease with respect to a Restricted Subsidiary, any Principal Property or shares of stock or indebtedness of a Restricted Subsidiary would become subject to a lien that is not in favor of us, a Restricted Subsidiary or any such successor or acquiring corporation or entity, we must, before or at the time of such transaction, effectively provide that the notes will be secured (if we so choose, equally and ratably with any other obligation of us or a Restricted Subsidiary that ranks equally with the notes) by a direct lien on such Principal Property or shares of stock or indebtedness of a Restricted Subsidiary that is prior to all liens other than pre-existing liens on such Principal Property or shares of stock or indebtedness of a Restricted Subsidiary, and that will continue as long as such Principal Property, shares of stock or indebtedness is subject to the lien arising in such transaction.

Events of Default

An event of default for any series of the notes includes the following:

- failure to pay any installment of interest, including any additional amounts on the notes of that series that continues for 30 days after such payment is due;
- failure to pay principal of or premium, if any, on the notes of that series when due;
- failure to perform any of the other covenants or agreements in the notes or in the indenture and relating to the notes of that series that continues for 60 days after notice to us by the trustee or holders of at least 25% in aggregate principal amount of the outstanding notes of that series; or
- certain events of bankruptcy, insolvency or reorganization of us.

An event of default with respect to a particular series of notes issued under the indenture does not necessarily constitute an event of default with respect to any other series. The indenture provides that the trustee will, with certain exceptions, notify the holders of the affected series of notes of the occurrence of any of the events of default listed above (not including any applicable grace period and irrespective of the giving of notice as described in the third bullet) known to the trustee within 90 days after the occurrence thereof. Except in the case of a default in the payment of principal of, or premium, if any, or interest on a series of the notes, the trustee may withhold notice if it determines in good faith that withholding notice is in the interest of the holders.

If an event of default is continuing for any series of the notes, the trustee or the holders of not less than 25% in aggregate principal amount of the affected series of notes then outstanding may declare the principal amount of that series of the notes to be due and payable immediately. In such a case, subject to certain conditions, the holders of a majority in aggregate principal amount of that series of the notes then outstanding can annul the declaration and waive past defaults.

We are required to provide an annual officers' certificate to the trustee concerning our compliance with certain covenants we make in the indenture. Subject to the provisions of the indenture relating to the duties of the trustee, the trustee is not obligated to exercise any of its rights or powers at the request or direction of any of the holders of notes unless the holders have offered the trustee security or indemnity reasonably satisfactory to the trustee. The holders of a majority in principal amount of the outstanding notes of each series affected by an event of default may direct the time, method and place of conducting any proceeding for any remedy available to the trustee under the indenture or exercising any of the trustee's trusts or powers with respect to that series of the notes; however, the trustee may decline to follow such direction in certain circumstances.

If the euro is unavailable to us due to the imposition of exchange controls or other circumstances beyond our control or if the euro is no longer being used by the then-member states of the European Monetary Union that have adopted the euro as their currency or for the settlement of transactions by public institutions of or within the international banking community, then all payments in respect of the notes will be made in U.S. dollars until the euro is again available to us or so used. The amount payable on any date in euros will be converted into U.S. dollars on the basis of the most recently available market exchange rate for euros. Any payment in respect of the notes so made in U.S. dollars will not constitute an event of default. Neither the trustee nor the paying agent shall have any responsibility for effecting such currency conversions.

Modification and Amendment of the Indenture

We may enter into supplemental indentures with the trustee without the consent of the holders of the notes to, among other things:

- evidence the assumption by a successor corporation of our obligations under the indenture;
- appoint additional or separate trustees to act under the indenture;
- add covenants for the protection of the holders of the notes; and
- cure any ambiguity or correct any inconsistency in the indenture.

With the consent of the holders of a majority in aggregate principal amount of the notes of each affected series issued under the indenture at the time outstanding, we may execute supplemental indentures with the trustee to add provisions or change or eliminate any provision of the indenture or any supplemental indenture relating to such series or to modify the rights of the holders of those notes. However, no such supplemental indenture will (1) extend the fixed maturity of any notes, reduce the principal amount (including in the case of discounted notes the amount payable upon acceleration of the maturity thereof), reduce the rate or extend the time of payment of any interest, reduce any premium payable upon redemption, or change the currency in which any notes are payable, without the consent of each holder of affected notes, or (2) reduce the aforesaid majority in principal amount of the notes of any series, the consent of the holders of which is required for any such supplemental indenture, without the consent of the holders of all notes of such series.

Defeasance and Discharge of Indenture or Certain Obligations; Satisfaction and Discharge

At our option, we (1) will be discharged from all obligations under the indenture in respect of the notes of a series (except for certain obligations to register the transfer of or to exchange such notes, replace stolen, lost or mutilated notes, maintain paying agencies and hold monies for payment in trust) or (2) need not comply with certain covenants of the indenture that are applicable to each series of notes (including the limitation on liens and the limitation on sale and lease-back) and will not be limited by the restrictions in the indenture with respect to merger, consolidation or sale, conveyance or lease of substantially all of our assets, in each case if we irrevocably deposit with the trustee, in trust, money or Federal Republic of Germany obligations (or a combination thereof) sufficient to pay the principal of and any premium or interest on the applicable notes when due and satisfy other conditions in the indenture. In order to select either option, we must provide the trustee, among other things, an opinion of counsel based on a ruling from or published by the Internal Revenue Service (in the case of option (1)), or an opinion of counsel (in the case of option (2)), in each case to the effect that beneficial owners of the applicable notes will not recognize income, gain or loss for U.S. federal income tax purposes as a result of our exercise of the option, and will be subject to U.S. federal income tax on the same amounts and in the same manner and at the same times as if we had not exercised such option.

In the event we exercise our option under (2) above with respect to any series of notes and the notes of such series are declared due and payable because of the occurrence of any event of default other than default with respect to such obligations, the amount of money and Federal Republic of Germany obligations on deposit with the trustee will be sufficient to pay amounts due on the notes of that series at the time of their stated maturity but may not be sufficient to pay amounts due on the notes of that series at the time of the acceleration resulting from such event of default. We would remain liable, however, for such payments.

In addition to the foregoing, at our option, we will be discharged from all our obligations under the indenture (except for certain obligations to register the transfer of or to exchange such notes and provide compensation and reimbursement of expenses to the trustee) in respect of the notes of a series of which all of the notes have been delivered to the trustee for cancellation (other than destroyed, lost or stolen notes that have been replaced or paid) or that have matured or will mature or be redeemed within one year (where arrangements satisfactory to the trustee for giving notice of redemption have been made), if we, among other things, irrevocably deposit with the trustee, in trust, money or Federal Republic of Germany obligations (or a combination thereof) sufficient to pay the principal of and any premium or interest on the applicable notes when due.

“Federal Republic of Germany obligations” means direct noncallable obligations of the Federal Republic of Germany, noncallable obligations the payment of the principal of and interest on which is fully guaranteed by the Federal Republic of Germany, and noncallable obligations on which the full faith and credit of the Federal Republic of Germany is pledged to the payment of the principal thereof and interest thereon.

Governing Law

The indenture and the notes will be governed by, and construed and enforced in accordance with, the laws of the State of Illinois applicable to agreements made or instruments entered into and, in each case, performed in said state.

Relationship with Trustee and Paying Agent

The Bank of New York Mellon Trust Company, N.A. currently serves as the trustee with respect to certain of our other outstanding debt securities, and The Bank of New York Mellon, London Branch currently serves as the paying agent with respect to certain of our other outstanding debt securities.

Open Market Purchases

We may at any time and from time to time purchase notes in the open market or otherwise.

(Back To Top)

Section 6: EX-21 (EXHIBIT 21)

Exhibit 21

Illinois Tool Works Inc.
Subsidiaries

Subsidiary Name	***Primary Jurisdiction***
00792620	United Kingdom
A V Co 1 Limited	United Kingdom
A V Co 1 Limited	Delaware
A V Co 2 Limited	United Kingdom
A V Co 2 Limited	Nevada
A V Co 3 Limited	United Kingdom
A V Co 3 Limited	Nevada
Accessories Marketing Holding Corp.	Delaware
ACCU-LUBE Manufacturing GmbH - Schmiermittel und -geräte -	Germany
Advanced Molding Company, Inc.	Philippines
AIP/BI Holdings, Inc.	Delaware
Allen Coding GmbH	Germany
Allen France SAS	France
Alpine Automation Limited	United Kingdom
Alpine Holdings, Inc.	Delaware
Alpine Systems Corporation	Canada
Anaerobicos S.r.l.	Argentina
AppliChem GmbH	Germany
AppliChem, Inc.	Connecticut
Arylux Hungary Elektromechanikus Alkatreszgyarto Kft	Hungary
Avery Berkel France	France
Avery India Limited	India
Avery Malaysia Sdn Bhd	Malaysia
Avery Weigh-Tronix (Suzhou) Weighing Technology Co. Ltd.	China
Avery Weigh-Tronix Finance Limited	United Kingdom
Avery Weigh-Tronix Holdings Limited	Nevada
Avery Weigh-Tronix Holdings Limited	United Kingdom
Avery Weigh-Tronix International Limited	United Kingdom
Avery Weigh-Tronix Limited	United Kingdom
Avery Weigh-Tronix Properties Limited	United Kingdom
Avery Weigh-Tronix, LLC	Delaware
B.C. Immo	France
Beijing Miller Electric Manufacturing Co. Ltd.	China
Berkel (Ireland) Limited	Ireland
Berrington UK	United Kingdom
Brapenta Eletronica Ltda.	Brazil
Brooks Instrument (Shanghai) Co. Ltd	China
Brooks Instrument B.V.	Netherlands
Brooks Instrument GmbH	Germany
Brooks Instrument KFT	Hungary
Brooks Instrument Korea, Ltd.	South Korea
Brooks Instrument LLC	Delaware
Buell Industries, Inc.	Delaware
Calvia Spolka z Ograniczona Odpowiedzialnosci	Poland
Capital Ventures (Australasia) S.à r.l	Luxembourg
CAPMAX Logística S.A. de C.V.	Mexico
Capmax Logistica, S.A. de C.V.	Delaware
CCI Realty Company	Delaware
Celeste Industries Corporation	Connecticut
Cetram Pty Limited	Australia
CFC Europe GmbH	Germany
Coeur (Shanghai) Medical Appliance Trading Co., Ltd	China
Coeur Asia Limited	Hong Kong
Coeur Holding Company	Delaware
Coeur, Inc.	Indiana

Exhibit 21

Illinois Tool Works Inc.
Subsidiaries

Subsidiary Name	***Primary Jurisdiction***
Compagnie de Materiel et d'Equipements Techniques-Comet	France
Compagnie Hobart	France
Constructions Isothermiques Bontami C.I.B.	France
CS (Australia) Pty Limited	Australia
CS (Finance) Europe S.a.r.l.	Luxembourg
CS Mexico Holding Company S DE RL DE CV	Mexico
CSMTS LLC	Delaware
Densit Asia Pacific Sdn Bhd	Malaysia
Diagraph Corporation Sdn. Bhd	Malaysia
Diagraph ITW Mexico, S. de R.L. De C.V.	Mexico
Diagraph México, S.A. DE C.V.	Mexico
Dongguan Ark-Les Electric Components Co., Ltd.	China
Dongguan CK Branding Co., Ltd.	China
Dorbyl U.K. (Holdings) Limited	United Kingdom
Duo Fast de Espana S.A.U.	Spain
Duo-Fast Korea Co. Ltd.	South Korea
Duo-Fast LLC	Illinois
E.C.S. d.o.o.	Croatia
ECS Cable Protection Sp. Zoo	Poland
Elga Skandinavian AS	Norway
ELRO (Holding) AG	Switzerland
ELRO Grosskuchen GmbH	Austria
ELRO Grosskuchen GmbH	Germany
ELRO-WERKE AG	Switzerland
Eltex-Elektrostatik-Gesellschaft mit beschränkter Haftung	Germany
Envases Multipac, S.A. de C.V.	Mexico
Eurotec Srl	Italy
Fasver	France
FEG Investments L.L.C.	Delaware
Filtertek	France
Filtertek De Mexico Holding Inc.	Delaware
Filtertek De Mexico, S.A. de C.V.	Mexico
Gamko B.V.	Netherlands
GC Financement SA	France
Gun Hwa Platech (Taicang) Co. Ltd.	China
Hobart (Japan) K.K.	Japan
Hobart Andina S.A.S.	Colombia
Hobart Foster Belgium	Belgium
Hobart Brothers International Chile Limitada	Chile
Hobart Brothers LLC	Ohio
Hobart Dayton Mexicana, S. de R.L. de C.V.	Mexico
Hobart Food Equipment Co., Ltd.	China
HOBART Gesellschaft mit beschränkter Haftung	Germany
Hobart International (Singapore) Pte. Ltd.	Singapore
Hobart Korea LLC	South Korea
Hobart LLC	Delaware
Hobart Nederland B.V.	Netherlands
Hobart Sales & Service, Inc.	Ohio
Hobart Scandinavia ApS	Denmark
Hobart Techniek B.V.	Netherlands
Horis	France
Ideal Molding Technologies LLC	Delaware
ILC Investments Holdings Inc.	Delaware
Illinois Tool Works (Chile) Limitada	Chile
Illinois Tool Works (ITW) Nederland B.V.	Netherlands

Illinois Tool Works Inc.
Subsidiaries

Subsidiary Name	***Primary Jurisdiction***
Illinois Tool Works Norway AS	Norway
Impar Comercio E Representacoes Ltda.	Brazil
Industrie Plastic Elsässer GmbH	Germany
Inmobiliaria Cit., S.A. de C.F.	Mexico
Innova Temperlite Servicios, S.A. de C.V.	Mexico
Innovación y Transformación Automotriz, S.A. de C.V.	Mexico
Instron (Shanghai) Ltd.	China
Instron (Thailand) Limited	Thailand
Instron Brasil Equipamentos Cientificos Ltda.	Brazil
Instron Foreign Sales Corp. Limited	Jamaica
Instron France S.A.S.	France
Instron GmbH	Germany
Instron Holdings Limited	United Kingdom
Instron International Limited	United Kingdom
Instron Japan Company, Ltd.	Massachusetts
Instron Korea LLC	South Korea
International Leasing Company LLC	Delaware
International Truss Systems Proprietary Limited	South Africa
Isolenge - ITW Sistemas de Isolamento Termico Ltda.	Brazil
ITW (China) Investment Company Limited	China
ITW (Deutschland) GmbH	Germany
ITW (EU) Holdings Ltd.	Luxembourg
ITW (European) Finance Co. Ltd.	Malta
ITW (European) Finance II Co. Ltd.	Malta
ITW (Ningbo) Components & Fastenings Systems Co., Ltd.	China
ITW AEP LLC	Delaware
ITW Aircraft Investments Inc.	Delaware
ITW Airport Ground Equipment (Beijing) Co. Ltd.	China
ITW Alpha Sárl	Luxembourg
ITW Ampang Industries Philippines, Inc.	Philippines
ITW AOC, LLC	South Korea
ITW Appliance Components d.o.o.	Slovenia
ITW Appliance Components EOOD	Bulgaria
ITW Appliance Components LLC	Massachusetts
ITW Appliance Components S.r.l.a	Italy
ITW Appliance Components, S.A. de C.V.	Mexico
ITW Australia Holdings Pty Ltd	Australia
ITW Australia Property Holdings Pty Ltd.	Australia
ITW Australia Pty Ltd	Australia
ITW Automotive Components (Chongqing) Co. Ltd.	China
ITW Automotive Components (Langfang) Co., Ltd.	China
ITW Automotive Japan K.K.	Japan
ITW Automotive Korea, LLC	South Korea
ITW Automotive Parts (Shanghai) Co. Ltd	China
ITW Automotive Products GmbH	Germany
ITW Automotive Products México, S. de R.L. de C.V.	Mexico
ITW Bailly Comte	France
ITW Befestigungssysteme GmbH	Germany
ITW Belgium	Belgium
ITW Brazilian Nominee L.L.C.	Delaware
ITW Building Components Group Inc.	Delaware
ITW Canada Inc.	Canada
ITW Celeste Inc.	Delaware
ITW CER	France
ITW Chemical Products Ltda	Brazil

Exhibit 21

Illinois Tool Works Inc.
Subsidiaries

Subsidiary Name	***Primary Jurisdiction***
ITW Chemical Products Scandinavia ApS	Denmark
ITW Colombia S.A.S.	Colombia
ITW Construction Products (Shanghai) Co. Ltd.	China
ITW Construction Products (Singapore) Pte. Ltd.	Singapore
ITW Construction Products AB	Sweden
ITW Construction Products ApS	Denmark
ITW Construction Products AS	Norway
ITW Construction Products CZ s.r.o.	Czech Republic
ITW Construction Products Italy Srl	Italy
ITW Construction Products OU	Estonia
ITW Construction Products OY	Finland
ITW Contamination Control (Wujiang) Co., Ltd.	China
ITW Contamination Control B.V.	Netherlands
ITW Covid Security Group Inc.	Delaware
ITW CP Distribution Center Holland BV	Netherlands
ITW CS (UK) Ltd.	United Kingdom
ITW de France	France
ITW DelFast do Brasil Ltda.	Brazil
ITW Delta Sárl	Luxembourg
ITW Denmark ApS	Denmark
ITW do Brasil Industrial e Comercial Ltda.	Brazil
ITW DS Investments Inc.	Delaware
ITW Dynatec	France
ITW Dynatec Adhesive Equipment (Suzhou) Co. Ltd.	China
ITW Dynatec GmbH	Germany
ITW Dynatec Kabushiki Kaisha	Japan
ITW EF&C France SAS	France
ITW EF&C Selb GmbH	Germany
ITW Electronic Business Asia Co., Limited	Taiwan
ITW Electronic Components/Products (Shanghai) Co., Ltd.	China
ITW Electronics (Suzhou) Co., Ltd.	China
ITW Epsilon Sárl	Luxembourg
ITW Espana S.A.	Spain
ITW Fastener Products GmbH	Germany
ITW FEG do Brasil Industria e Comercio Ltda.	Brazil
ITW FEG Hong Kong Limited	Hong Kong
ITW Finance Designated Activity Company	Ireland
ITW Finance Europe S.A.	Luxembourg
ITW Finance Europe S.A.	Delaware
ITW Fluids and Hygiene Solutions Ltda.	Brazil
ITW Food Equipment Group LLC	Delaware
ITW Gamma Sárl	Luxembourg
ITW German Management LLC	Delaware
ITW GH LLC	South Korea
ITW Global Investments Holdings LLC	Delaware
ITW Global Investments Holdings Y Compañia, Sociedad en Comandita por Acciones	Guatemala
ITW Global Investments II Inc.	Delaware
ITW Global Investments LLC	Delaware
ITW Global Tire Repair Europe GmbH	Germany
ITW Global Tire Repair Inc.	California
ITW Global Tire Repair Japan K.K.	Japan
ITW Graphics (Thailand) Ltd.	Thailand
ITW Graphics Asia Limited	Hong Kong
ITW Graphics Italy S.R.L. in liquidazione	Italy

Exhibit 21

Illinois Tool Works Inc.
Subsidiaries

Subsidiary Name	***Primary Jurisdiction***
ITW Great Britain Investment & Licensing Holding Company	Delaware
ITW Group France (Luxembourg) S.àr.l.	Luxembourg
ITW GSE ApS	Denmark
ITW GSE Inc.	Delaware
ITW haubold Paslode GmbH	Switzerland
ITW HLP Thailand Co. Ltd.	Thailand
ITW Holding Quimica B.C., S.L., Sole Shareholder Company	Spain
ITW Holdings Australia L.P.	Australia
ITW Holdings I Limited	United Kingdom
ITW Holdings II Limited	United Kingdom
ITW Holdings III Limited	United Kingdom
ITW Holdings Inc.	Delaware
ITW Holdings IV Limited	United Kingdom
ITW Holdings IX Limited	United Kingdom
ITW Holdings LP	United Kingdom
ITW Holdings UK	United Kingdom
ITW Holdings V Limited	United Kingdom
ITW Holdings VI Limited	United Kingdom
ITW Holdings VII Limited	United Kingdom
ITW Holdings VIII Limited	United Kingdom
ITW Hungary Finance Beta Kft	Hungary
ITW ILC Holdings I Inc.	Delaware
ITW Imaden Industria e Comercio Ltda.	Brazil
ITW India Private Limited	India
ITW International Holdings LLC	Delaware
ITW International Intellectual Property LLC	Delaware
ITW Invest Holding GmbH	Germany
ITW IPG Investments LLC	Delaware
ITW Ireland Holdings Unlimited Company	Ireland
ITW Ireland Unlimited Company	Ireland
ITW Italy Finance Srl	Italy
ITW Italy Holding Srl	Italy
ITW Japan Ltd.	Japan
ITW Korea LLC	South Korea
ITW Limited	United Kingdom
ITW LLC & Co. KG	Germany
ITW Lombard Holdings Inc.	Delaware
ITW Lys Fusion S.r.l.	Italy
ITW M FILMS II LLC	Delaware
ITW Marking & Coding (Shanghai) Co., Ltd.	China
ITW Medical Group de Mexico S. de R.L. de C.V.	Mexico
ITW Meritex Sdn. Bhd.	Malaysia
ITW Metal Fasteners, S.L.	Spain
ITW Mexico Holding Company S. De R.L. de C.V.	Mexico
ITW Mexico Holdings LLC	Delaware
ITW MH LLC	Delaware
ITW Morlock GmbH	Germany
ITW Mortgage Investments II, Inc.	Delaware
ITW Mortgage Investments III, Inc.	Delaware
ITW Mortgage Investments IV, Inc.	Delaware
ITW Netherlands Beta B.V.	Netherlands
ITW Netherlands Finance Alpha BV	Netherlands
ITW New Universal LLC	Delaware
ITW New Zealand	New Zealand
ITW Novadan Sp. Z.o.o.	Poland

Exhibit 21

Illinois Tool Works Inc.
Subsidiaries

Subsidiary Name	***Primary Jurisdiction***
ITW Packaging Technology (China) Co. Ltd.	China
ITW Participations S.à r.l.	Luxembourg
ITW Pension Funds Trustee Company	United Kingdom
ITW Performance Plastic (Shanghai) Co. Ltd.	China
ITW Performance Polymers & Fluids Japan Co. Ltd.	Japan
ITW Performance Polymers & Fluids Korea Limited	South Korea
ITW Performance Polymers & Fluids OOO	Russia
ITW Performance Polymers (Wujiang) Co., Ltd.	China
ITW Performance Polymers and Fluids Group FZE	United Arab Emirates
ITW Performance Polymers ApS	Denmark
ITW Peru S.A.C.	Peru
ITW Philippines Holdings LLC	Delaware
ITW Poly Mex, S. de R.L. de C.V.	Mexico
ITW Polymers Sealants North America Inc.	Texas
ITW PPF Brasil Adesivos Ltda.	Brazil
ITW Pronovia s.r.o.	Czech Republic
ITW Pte. Ltd.	Singapore
ITW Qufu Automotive Cooling Systems Co. Ltd.	China
ITW Real Estate Germany GmbH	Germany
ITW Residuals III L.L.C.	Delaware
ITW Residuals IV L.L.C.	Delaware
ITW Rivex	France
ITW Simco-Ion (Shenzhen) Co. Ltd.	China
ITW Slovakia s.r.o.	Slovakia
ITW SMPI	France
ITW Spain Holdings, S.L.	Spain
ITW Specialty Film, LLC	South Korea
ITW Specialty Films France	France
ITW Specialty Materials (Suzhou) Co., Ltd.	China
ITW SPG México, S. de R.L. de C.V.	Mexico
ITW Spraytec	France
ITW Sverige AB	Sweden
ITW Sweden Holding AB	Sweden
ITW Test & Measurement Equipment (Shanghai) Co., Ltd	China
ITW Test & Measurement GmbH	Germany
ITW Test and Measurement Italia Srl	Italy
ITW Test and Measurement Services Industry and Trade Ltd.	Turkey
ITW Texwipe Philippines, Inc.	Philippines
ITW Thermal Films (Shanghai) Co., Ltd.	China
ITW UK	United Kingdom
ITW UK Finance Beta Limited	United Kingdom
ITW UK Finance Delta Limited	United Kingdom
ITW UK Finance Gamma Limited	United Kingdom
ITW UK Finance Limited	United Kingdom
ITW UK II Limited	United Kingdom
ITW Universal II LLC	Delaware
ITW Welding	France
ITW Welding AB	Sweden
ITW Welding GmbH	Germany
ITW Welding Products B.V.	Netherlands
ITW Welding Products Group FZE	United Arab Emirates
ITW Welding Products Group, S. DE R.L. De C.V.	Mexico
ITW Welding Products Italy Srl	Italy
ITW Welding Products Limited Liability Company	Russia
ITW Welding Produtos Para Solgdagem Ltda.	Brazil

Exhibit 21

Illinois Tool Works Inc.
Subsidiaries

Subsidiary Name	***Primary Jurisdiction***
ITW Welding Servicios Mexico, S. de R.L. de C.V.	Mexico
ITW Welding Singapore Pte. Ltd.	Singapore
KCPL Mauritius Holdings	Mauritius
Kester Components (M) Sdn. Bhd.	Malaysia
Kleinmann GmbH	Germany
Krafft Argentina, S.A.	Argentina
Krafft, S.L.	Spain
Lock Inspection Systemes France Sarl	France
Loma Systems (Canada) Inc.	Canada
Loma Systems BV	Netherlands
Loma Systems sro	Czech Republic
Lombard Pressings Limited	United Kingdom
Lumex, Inc.	Illinois
Luvex - Industria De Equipamentos De Protecao Ltda.	Brazil
Lys Fusion Poland Sp. z.o.o.	Poland
M&C Specialties (Shenzhen) Co. Ltd.	China
M&C Specialties Co.	Pennsylvania
Magna Industrial Co. Limited	Hong Kong
MAGNAFLUX GmbH	Germany
Manufacturing Avancee S.A.	Morocco
MEHB Holdings Limited	United Kingdom
Meritex Technology (Suzhou) Co. Ltd.	China
Meurer Verpackungssysteme GmbH	Germany
MGHG Property LLC	Delaware
Miller Electric Mfg. LLC	Wisconsin
Miller Insurance Ltd.	Vermont
NDT Holding LLC	Delaware
Norden Olje AB	Sweden
North Star Imaging Europe	France
North Star Imaging, Inc.	Minnesota
Nova Chimica, S.r.l.	Italy
Novadan ApS	Denmark
Odesign, Inc.	Illinois
Orbitalum Tools GmbH	Germany
Pacific Concept Industries Limited (Enping)	China
Panreac Quimica, S.L.	Spain
Paslode Fasteners (Shanghai) Co., Ltd.	China
Penta Dnepr LLC	Ukraine
Penta Sever OOO	Russia
Penta Volga OOO	Russia
PENTA-91 OOO	Russia
PR. A. I. Srl	Italy
Premark FEG L.L.C.	Delaware
Premark HII Holdings LLC	Ohio
Premark International, LLC	Delaware
Prolex, Sociedad Anónima	Costa Rica
PT ITW Construction Products Indonesia	Indonesia
QSA Global, Inc.	Delaware
Quimica Industrial Mediterranea, S.L.	Spain
Ramset Fasteners (Hong Kong) Ltd.	Hong Kong
Rapid Cook LLC	Delaware
Refrigeration France	France
S.E.E. Sistemas Industria E Comercio Ltda.	Brazil
Salter India Limited	India
Sealant Systems International, Inc.	California

Exhibit 21

Illinois Tool Works Inc.
Subsidiaries

Subsidiary Name	***Primary Jurisdiction***
Sentinel Asia Yuhan Hoesa	South Korea
Shanghai ITW Plastic & Metal Co. Ltd	China
Simco (Nederland) B.V.	Netherlands
Simco Japan, Inc.	Japan
Société de Prospection et d’Inventions Techniques – SPIT	France
Speedline Holdings I, Inc.	Delaware
Speedline Holdings I, LLC	Delaware
Speedline Technologies GmbH	Germany
Speedline Technologies Mexico Services, S. de R.L. de C.V.	Mexico
Speedline Technologies Mexico, S. de R.L. de C.V.	Mexico
ST Mexico Holdings LLC	Delaware
Stokvis Celix Portugal Unipessoal LDA	Portugal
Stokvis Danmark ApS	Denmark
Stokvis Holdings S.A.R.L.	Luxembourg
Stolvis Holdings II S.A.R.L.	Luxembourg
Stokvis Promi s.r.o	Czech Republic
Stokvis Prostick Tapes Private Limited	India
Stokvis Tape Group B.V.	Netherlands
Stokvis Tapes (Hong Kong) Co. Limited	Hong Kong
Stokvis Tapes (Shanghai) Co. Ltd.	China
Stokvis Tapes (Shenzhen) Co. Ltd.	China
Stokvis Tapes (Taiwan) Co. Ltd.	Taiwan
Stokvis Tapes (Tianjin) Co. Ltd.	China
Stokvis Tapes Benelux B.V.	Netherlands
Stokvis Tapes BVBA	Belgium
Stokvis Tapes Deutschland GmbH	Germany
Stokvis Tapes France	France
Stokvis Tapes Italia s.r.l.	Italy
Stokvis Tapes Limited	United Kingdom
Stokvis Tapes Limited Liability Company	Russia
Stokvis Tapes Norge AS	Norway
Stokvis Tapes Oy	Finland
Stokvis Tapes Polska Sp Z.O.O.	Poland
Stokvis Tapes Sverige AB	Sweden
Tarutin Kester Co., Ltd.	Japan
Technopack Industria, Comercio, Consultoria e Representacoes Ltda.	Brazil
Teknek (China) Limited	Scotland
Teknek (Japan) Limited	Scotland
Teksaleco Ltd.	Scotland
Thirode Grandes Cuisines Poligny	France
Tien Tai Electrode (Kunshan) Co., Ltd.	China
Tien Tai Electrode (Qingdao) Co., Ltd.	China
Tien Tai Electrode Co., Ltd.	Taiwan
Unichemicals Industria e Comercio Ltda.	Brazil
US Finance Gamma LLC	Delaware
Valeron Strength Films B.V.B.A.	Belgium
Veneta Decalcogomme S.r.l.	Italy
Versachem Chile S.A.	Chile
Vesta (Guangzhou) Catering Equipment Co. Ltd	China
Vesta Global Limited	Hong Kong
Vitronics Soltec B.V.	Netherlands
VR-Leasing Sarita GmbH & Co. Immobilien KG	Germany
VS European Holdco BV	Netherlands
Wachs Canada Ltd.	Canada
Wachs Subsea LLC	Illinois

Exhibit 21

Illinois Tool Works Inc.
Subsidiaries

Subsidiary Name	***Primary Jurisdiction***
Weigh-Tronix Canada, ULC	Canada
Weigh-Tronix UK Limited	United Kingdom
Wilsonart International Holdings LLC	Delaware
Wujiang Advanced Cleaning Co., Ltd.	China
Wynn Oil (South Africa) (Pty) Ltd.	South Africa
Wynn's Automotive France	France
Wynn's Belgium BVBA	Belgium
Wynn's Italia Srl	Italy
Wynn's Mekuba India Pvt Ltd	India
Zip-Pak International B.V.	Netherlands

(Back To Top)

Section 7: EX-23 (EXHIBIT 23)

Exhibit 23

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-219695 on Form S-3; Registration Statement Nos. 333-105731, 333-69542, 333-145392, and 333-206206 on Form S-8; and Registration Statement No. 333-163547 on Form S-4 of our report dated February 14, 2020, relating to the consolidated financial statements of Illinois Tool Works Inc. and subsidiaries (the “Company”) and the effectiveness of the Company’s internal control over financial reporting, appearing in this Annual Report on Form 10-K of the Company for the year ended December 31, 2019.

/s/ DELOITTE & TOUCHE LLP
Chicago, Illinois
February 14, 2020

(Back To Top)

Section 8: EX-24 (EXHIBIT 24)

Exhibit 24

ILLINOIS TOOL WORKS INC.

Form 10-K Annual Report

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that the undersigned whose signature appears below constitutes and appoints E. Scott Santi and Michael M. Larsen, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for her or him and in his or her name, place and stead, in any and all capacities, to sign the Company's Form 10-K Annual Report and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

IN WITNESS WHEREOF, the undersigned has executed this power of attorney this 14th day of February, 2020.

/s/ Daniel J. Brutto
Daniel J. Brutto

ILLINOIS TOOL WORKS INC.

Form 10-K Annual Report

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that the undersigned whose signature appears below constitutes and appoints E. Scott Santi and Michael M. Larsen, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for her or him and in his or her name, place and stead, in any and all capacities, to sign the Company's Form 10-K Annual Report and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

IN WITNESS WHEREOF, the undersigned has executed this power of attorney this 14th day of February, 2020.

/s/ Susan Crown
Susan Crown

ILLINOIS TOOL WORKS INC.

Form 10-K Annual Report

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that the undersigned whose signature appears below constitutes and appoints E. Scott Santi and Michael M. Larsen, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for her or him and in his or her name, place and stead, in any and all capacities, to sign the Company's Form 10-K Annual Report and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

IN WITNESS WHEREOF, the undersigned has executed this power of attorney this 14th day of February, 2020.

/s/ James W. Griffith
James W. Griffith

ILLINOIS TOOL WORKS INC.

Form 10-K Annual Report

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that the undersigned whose signature appears below constitutes and appoints E. Scott Santi and Michael M. Larsen, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for her or him and in his or her name, place and stead, in any and all capacities, to sign the Company's Form 10-K Annual Report and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

IN WITNESS WHEREOF, the undersigned has executed this power of attorney this 14th day of February, 2020.

/s/ Jay L. Henderson
Jay L. Henderson

ILLINOIS TOOL WORKS INC.

Form 10-K Annual Report

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that the undersigned whose signature appears below constitutes and appoints E. Scott Santi and Michael M. Larsen, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for her or him and in his or her name, place and stead, in any and all capacities, to sign the Company's Form 10-K Annual Report and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

IN WITNESS WHEREOF, the undersigned has executed this power of attorney this 14th day of February, 2020.

/s/ Richard H. Lenny
Richard H. Lenny

ILLINOIS TOOL WORKS INC.

Form 10-K Annual Report

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that the undersigned whose signature appears below constitutes and appoints E. Scott Santi and Michael M. Larsen, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for her or him and in his or her name, place and stead, in any and all capacities, to sign the Company's Form 10-K Annual Report and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

IN WITNESS WHEREOF, the undersigned has executed this power of attorney this 14th day of February, 2020.

/s/ James A. Skinner
James A. Skinner

ILLINOIS TOOL WORKS INC.

Form 10-K Annual Report

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that the undersigned whose signature appears below constitutes and appoints E. Scott Santi and Michael M. Larsen, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for her or him and in his or her name, place and stead, in any and all capacities, to sign the Company's Form 10-K Annual Report and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

IN WITNESS WHEREOF, the undersigned has executed this power of attorney this 14th day of February, 2020.

/s/ David B. Smith, Jr.
David B. Smith, Jr.

ILLINOIS TOOL WORKS INC.

Form 10-K Annual Report

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that the undersigned whose signature appears below constitutes and appoints E. Scott Santi and Michael M. Larsen, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for her or him and in his or her name, place and stead, in any and all capacities, to sign the Company's Form 10-K Annual Report and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

IN WITNESS WHEREOF, the undersigned has executed this power of attorney this 14th day of February, 2020.

/s/ Pamela B. Strobel
Pamela B. Strobel

ILLINOIS TOOL WORKS INC.

Form 10-K Annual Report

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that the undersigned whose signature appears below constitutes and appoints E. Scott Santi and Michael M. Larsen, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for her or him and in his or her name, place and stead, in any and all capacities, to sign the Company's Form 10-K Annual Report and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

IN WITNESS WHEREOF, the undersigned has executed this power of attorney this 14th day of February, 2020.

/s/ Kevin M. Warren
Kevin M. Warren

ILLINOIS TOOL WORKS INC.

Form 10-K Annual Report

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that the undersigned whose signature appears below constitutes and appoints E. Scott Santi and Michael M. Larsen, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for her or him and in his or her name, place and stead, in any and all capacities, to sign the Company's Form 10-K Annual Report and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

IN WITNESS WHEREOF, the undersigned has executed this power of attorney this 14th day of February, 2020.

/s/ André D. Williams
André D. Williams

(Back To Top)

Section 9: EX-31 (EXHIBIT 31)

Exhibit 31

Rule 13a-14(a) Certification

I, E. Scott Santi, certify that:

1 I have reviewed this report on Form 10-K of Illinois Tool Works 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 the 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.

Dated: February 14, 2020

/s/ E. Scott Santi
E. Scott Santi
Chairman & Chief Executive Officer

Exhibit 31

Rule 13a-14(a) Certification

I, Michael M. Larsen, certify that:

1. I have reviewed this report on Form 10-K of Illinois Tool Works 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 the 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.

Dated: February 14, 2020	/s/ Michael M. Larsen
	Michael M. Larsen
	Senior Vice President & Chief Financial Officer

(Back To Top)

Section 10: EX-32 (EXHIBIT 32)

Exhibit 32

Section 1350 Certification

The following statement is being made to the Securities and Exchange Commission solely for purposes of Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. 1350), which carries with it certain criminal penalties in the event of a knowing or willful misrepresentation.

Each of the undersigned hereby certifies that the Annual Report on Form 10-K for the period ended December 31, 2019 fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and that the information contained in such report fairly presents, in all material respects, the financial condition and results of operations of the registrant.

Dated: February 14, 2020	/s/ E. Scott Santi
	E. Scott Santi
	Chairman & Chief Executive Officer

Dated: February 14, 2020	/s/ Michael M. Larsen
	Michael M. Larsen
	Senior Vice President & Chief Financial Officer

(Back To Top)