UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022

OR

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

For the transition period from _____ to _____

Commission file number 1-4482

ARROW ELECTRONICS, INC

(Exact name of registrant as specified in its charter)

New York	**11-1806155**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)
9201 East Dry Creek Road	**80112**
Centennial CO	(Zip Code)
(Address of principal executive offices)	

(303) 824-4000

(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $1 par value	ARW	New York Stock Exchange

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

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

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262 (b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant’s executive officers during the relevant recovery period pursuant to § 240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of voting stock held by non-affiliates of the registrant as of the last business day of the registrant's most recently completed second fiscal quarter was $7,185,703,627.

There were 58,284,281 shares of Common Stock outstanding as of February 2, 2023.

DOCUMENTS INCORPORATED BY REFERENCE

The definitive proxy statement related to the registrant's 2023 Annual Meeting of Shareholders, is incorporated by reference in Part III to the extent described therein. The definitive proxy statement will be filed with the U.S. Securities and Exchange Commission within 120 days after the end of December 31, 2022.

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PART I

Item 1. Business.

Arrow Electronics, Inc. (the “company” or “Arrow”) is a global provider of products, services, and solutions to industrial and commercial users of electronic components and enterprise computing solutions. The company has one of the world's broadest portfolios of product offerings available from leading electronic components and enterprise computing solutions suppliers, coupled with a range of services, solutions, and software, the company helps industrial and commercial customers introduce innovative products, reduce their time to market, and enhance their overall competitiveness. Arrow was incorporated in New York in 1946 and serves over 210,000 customers worldwide.

Arrow's diverse worldwide customer base consists of original equipment manufacturers (“OEMs”), value-added resellers (“VARs”), managed service providers (“MSPs”), contract manufacturers (“CMs”), and other commercial customers. These customers include manufacturers of industrial equipment (such as machine tools, factory automation, and robotic equipment) and consumer products serving industries ranging from industrial, automotive and transportation, telecommunications, contract manufacturing, and consumer products, among others.

The company has two business segments, the global components business and the global enterprise computing solutions (“ECS”) business. The company distributes electronic components to OEMs and CMs through its global components business segment and provides enterprise computing solutions to VARs and MSPs through its global ECS business segment. For 2022, approximately 78% of the company's sales were from the global components business segment, and approximately 22% of the company's sales were from the global ECS business segment. The financial information about the company's business segments and geographic operations is found in Note 15 to the consolidated financial statements.

The company maintains over 220 sales facilities and 43 distribution and value-added centers, serving over 90 countries. The company has operations in each of the three largest electronics markets; the Americas; the Europe, Middle East, and Africa (“EMEA”); and the Asia/Pacific regions. Arrow's business strategy is to be the premier, technology-centric, go-to-market and supply chain services company on the planet. The company guides innovation forward by helping its customers in the areas of industrial automation, edge computing, cloud computing, and smart and connected devices, homes, cities, and transportation to deliver new technologies that improve businesses' performance and consumers' lives. Arrow aggregates disparate sources of electronics components, infrastructure software, and IT hardware to increasingly provide complete solutions for customers on behalf of its suppliers. The company aims to accelerate its customers’ time to market, enable secure and consistent supply chains, and drive growth on behalf of its suppliers.

The company's financial objectives are to grow sales faster than the market, increase the markets served, grow profits faster than sales, generate earnings per share growth in excess of competitors’ earnings per share growth and market expectations, grow earnings per share at a rate that provides the capital necessary to support the company’s business strategy, allocate and deploy capital effectively so that return on invested capital exceeds the company’s cost of capital, and increase return on invested capital. To achieve its objectives, the company seeks to capture significant opportunities to grow across products, markets, and geographies. To supplement its organic growth strategy, the company continually evaluates strategic acquisitions to broaden its product and value-added service offerings, increase its market penetration, and expand its geographic reach.

Global Components

The company's global components business segment markets and distributes electronic components enabled by a comprehensive range of value-added capabilities and services. The company provides customers with the ability to deliver the latest technologies to the market with the help of value-added services and capabilities such as design engineering, global marketing and integration, global logistics, and supply chain management. The company offers the convenience of accessing, from a single source, multiple technologies and products from its suppliers with rapid or scheduled deliveries. Most of the company's customers require delivery of their orders on schedules or volumes that are generally not available on direct purchases from manufacturers.

The global components business design, engineering, global marketing and integration services provide a variety of mechanisms, commonly known as demand creation, to promote the future sale of suppliers’ products. Most notably, the company intends to register engineered designs and schematics showing the use of suppliers’ components in the company’s customers’ future products. Providing these services generally lead to longer and more profitable relationships that benefit the company as well as the company's suppliers and customers.

Beyond the traditional source of sales and profits tied to the buying and selling of electronic components, the global components business is expanding its supply chain service offerings, including procurement, logistics, warehousing, and insights from data analytics.

Within the global components business segment for 2022, net sales of approximately 79% consist of semiconductor products and related services; approximately 13% consist of passive, electro-mechanical, and interconnect products, such as capacitors, resistors, potentiometers, power supplies, relays, switches, and connectors; approximately 5% consist of computing and memory; and approximately 3% consist of other products and services.

Global ECS

The company's global ECS business segment is a leading value-added provider of comprehensive computing solutions and services. Global ECS's portfolio includes datacenter, cloud, security, and analytics solutions. Global ECS brings broad market access, extensive supplier relationships, scale, and resources to help its VARs and MSPs meet the needs of their end-users. Global ECS works with VARs and MSPs to tailor complex IT solutions for their end-users. Customers have access to various services including engineering and integration support, warehousing and logistics, marketing resources, and authorized hardware and software training. Global ECS suppliers benefit from demand creation, speed to market, and efficient supply chain management.

Global ECS further supports customers by enabling their cloud solutions businesses through ArrowSphere, a cloud marketplace and management platform. ArrowSphere helps VARs and MSPs to manage, differentiate, and scale their cloud businesses. It simplifies the operational complexity of delivering hybrid multi-cloud solutions while providing the business intelligence that IT solution providers need to drive growth. By making cloud-based solutions available through ArrowSphere, suppliers benefit from greater subscription adoption, consumption, and utilization.

Within the global ECS business segment for 2022, net sales of approximately 33% consist of storage, 21% consist of software applications, 19% consist of security, 15% consist of compute, 6% consist of data intelligence, 4% consist of networking, and 2% consist of other products and services.

Customers and Suppliers

The company and its affiliates serve over 210,000 industrial and commercial customers. Industrial customers range from major OEMs and CMs to small engineering firms, while commercial customers primarily include VARs, MSPs, and OEMs. No single customer accounted for more than 2% of the company's 2022 consolidated sales. The company's sales teams focus on an extensive portfolio of products and services to support customers' material management and production needs, including connecting customers to the company's field application engineers that provide technical support and serve as a gateway to the company's supplier partners. The company's sales representatives generally focus on a specific customer segment, particular product lines, or a specific geography, and provide end-to-end product offerings and solutions with an emphasis on helping customers introduce innovative products, reduce their time to market, and enhance their overall competitiveness. Substantially all of the company's sales are made on an order-by-order basis, rather than through long-term sales contracts. As such, the nature of the company's business does not provide visibility of material forward-looking information from its customers and suppliers beyond a few months.

One supplier accounted for approximately 13% of the company's consolidated sales in 2022. No other single supplier accounted for more than 7% of the company's consolidated sales in 2022. The company believes that many of the products it sells are available from other sources at competitive prices. However, certain parts of the company's business, such as the company's global ECS business segment, rely on a limited number of suppliers with the strategy of providing focused support, extensive product knowledge, and customized service to suppliers, MSPs, and VARs. Most of the company's purchases are pursuant to distributor agreements, which are typically non-exclusive and cancellable by either party at any time or on short notice.

Distribution Agreements

Certain agreements with suppliers protect the company against the potential write-down of inventories due to technological change or suppliers' price reductions. These contractual provisions typically provide certain protections to the company for product obsolescence and price erosion in the form of return privileges, scrap allowances, and price protection. Under the terms of the related distributor agreements and assuming the company complies with certain conditions, such suppliers are required to credit the company for reductions in suppliers' list prices. As of December 31, 2022, this type of arrangement covered approximately 54% of the company's consolidated inventories. In addition, under the terms of many such agreements, the company has the right to return to the supplier, for credit, a defined portion of those inventory items purchased within a designated period of time.

A supplier electing to terminate a distribution agreement may be required to purchase from the company the total amount of its products carried in inventory. As of December 31, 2022, this type of repurchase arrangement covered approximately 50% of the company's consolidated inventories.

While these inventory practices do not wholly protect the company from inventory losses, the company believes that they currently provide substantial protection from such losses.

Competition

The company operates in a highly competitive environment, both in the United States and internationally. The company competes with other large multinational and national electronic components and enterprise computing solutions distributors, as well as numerous other smaller, specialized competitors who generally focus on narrower markets, products, or particular sectors. The company also competes for customers with its suppliers. The size of the company's competitors vary across market sectors, as do the resources the company has allocated to the sectors in which it does business. Therefore, some of the company's competitors may have a more extensive customer and/or supplier base than the company in one or more of its market sectors. There is significant competition within each market sector and geography served that creates pricing pressure and the need to continually improve services. Other competitive factors include rapid technological changes, product availability, credit availability, speed of delivery, ability to tailor solutions to customer needs, quality and depth of product lines and training, as well as service and support provided by the distributor to the customer.

The company also faces competition from companies entering or expanding into the logistics and product fulfillment, electronic catalog distribution, and e-commerce supply chain services markets. As the company seeks to expand its business into new areas in order to stay competitive in the market, the company may encounter increased competition from its current and/or new competitors.

The company believes that it is well equipped to compete effectively with its competitors in all of these areas due to its comprehensive product and service offerings, highly-skilled work force, and global distribution network.

Government Regulation

The company is subject to and endeavors to comply with various government regulations in the United States as well as various jurisdictions where it operates. These regulations cover several diverse areas including trade compliance, anti-bribery, anti-corruption, money laundering, securities, environmental, and data and privacy protection. Regulatory or government authorities where the company operates may have enforcement powers that can subject the company to legal penalties or other measures and can impose changes or conditions in the way it conducts business. For example, local authorities may disagree with how the company classifies its products for trade and taxation purposes, and the company may be required to change its classifications, which could increase the company's operating costs or subject it to increased taxes or fines and penalties. Increased government scrutiny of the company's actions or enforcement could materially and adversely affect its business or damage its reputation. In addition, the company may conduct, or it may be required to conduct, internal investigations or face audits or investigations by one or more domestic or foreign government or regulatory agencies, which could be costly and time-consuming, and could divert management and key personnel from the company's business operations. See Risk Factors in Part I, Item 1A.

Human Capital

Arrow's business strategy is to be the premier, technology-centric, go-to-market and supply chain services company on the planet. The company's talent strategy powers that business strategy through its people. The company's talent ecosystem spans 54 countries, with the strategic vision of excelling in the business to drive more scale, extending the company's value, and winning in the market with the diversity of its people and the strength of its culture, to benefit all stakeholders.

The company believes its deep capabilities and broad services are made possible by a broad group of professionals who understand its customer's problems from numerous perspectives and curate forward-looking, comprehensive solutions. The company's employees' diverse backgrounds have melded into rich perspectives that sharpen the company, frame how its global network of engineers, suppliers, and manufacturers work together, and enhance value for customers.

The company's business results depend in part on its ability to successfully manage human capital resources, including attracting, identifying, and retaining key talent. Factors that may affect the company's ability to attract and retain qualified employees include employee morale, its reputation, competition from other employers, and availability of qualified individuals.

The company and its affiliates employed approximately 22,300 employees worldwide as of December 31, 2022. The following table shows the company's approximate headcount by region:

	Americas	**EMEA**	**Asia/Pacific**
Headcount	6,500	7,400	8,400

Gender and Racial/Ethnic Diversity

The company has a long-standing goal for gender representation share growth at all levels of the organization globally, and for race/ethnicity representation share growth at all levels of the organization in the United States. Efforts towards employee diversity share growth are reflected in the company's talent strategy through (a) internal talent development programs that advance career opportunity for women and underrepresented employees, (b) hiring, (c) retention, (d) programs that promote gender and race/ethnicity representation specifically in early career talent, and (e) training programs designed to emphasize and expand diversity and inclusion priorities that align to the company's business strategy.

Demonstrating the company's commitment to employee diversity at all levels of the organization, in 2022, the company established quantitative short-term and multi-year goals to grow representation of women leaders globally and leaders who are of underrepresented race/ethnicity in the United States by 0.5 percentage points each year from 2022 – 2025, in order to achieve growth of two percentage points by 2025. Leaders are considered to include supervisors and above, shown as "Total Leadership" in the table below. Beginning in 2022, compensation plans for the company's executives include goals linked to the achievement of these annual targets.

Below are statistics related to gender and racial/ethnic diversity by employee population:

	Gender Diversity (Global) (% female)			**Underrepresented Race/Ethnicity (United States) (% underrepresented race/ethnicity)**		
	2022	**2021**	**Change**	**2022**	**2021**	**Change**
Executives (a)	27.3%	27.3%	—%	27.3%	18.2%	9.1%
Vice Presidents (a)	22.4%	22.8%	(0.4)%	12.3%	13.8%	(1.5)%
Directors	29.9%	27.6%	2.3%	17.9%	16.4%	1.5%
Managers	30.4%	29.8%	0.6%	30.0%	27.0%	3.0%
Supervisors	50.3%	45.8%	4.5%	40.2%	42.6%	(2.4)%
Total Leadership	**34.1%**	**32.6%**	**1.5%**	**26.5%**	**25.2%**	**1.3%**
Individual Contributors	43.7%	44.7%	(1.0)%	39.2%	37.4%	1.8%
Total Employee Population	**42.0%**	**42.4%**	**(0.4)%**	**36.9%**	**35.1%**	**1.8%**

(a) Executives includes executive officers of the company, and non-executive officers who are members of the executive committee. 2021 results have been adjusted to reflect current year presentation of executives and vice presidents.

Talent Acquisition, Development, and Retention

The company believes in work that elevates career opportunity for all and views its employees as career investors. Employees invest in Arrow by bringing their unique talents, experiences, and perspectives to the organization through their daily work. The company is committed to helping employees receive a return on their investment, in the form of compounding knowledge, skills, abilities, and earnings opportunity as their careers grow within the company. The company supports employees through targeted curriculum and tools focused on building skills and capabilities within each workforce segment. Arrow also offers a suite of enterprise leadership training and development programs. These programs create value by growing employee capability, which in turn facilitates business growth, while also providing career growth opportunities for employees. For example, over 70% of open manager-level and above positions were filled internally during 2022 and 2021.

Attracting and retaining early career talent enables Arrow to grow employee capability from the ground up. Through the company's university intern and graduate programs, apprenticeship programs, and management trainee programs, Arrow builds a diverse talent pipeline.

The company believes in rewards that improve performance outcomes for all and endorses a pay-for-performance philosophy via performance differentiation and rewarding employees through compensation and benefits. Arrow's compensation and benefits programs are aligned with the local external market to attract, grow, and retain talent. Arrow's commitment to rewarding employees fairly based on skills, experience, contribution/performance, internal equity, and the external market enables us to maximize employees' return on their career investment. The company reviews its compensation and benefits programs and practices regularly to ensure they remain competitive and equitable.

Arrow's Response to COVID-19

Arrow has remained resilient in these extraordinary times, in large part, due to the company's focus on serving its customers and the communities where they work and live. The company continued to provide a safe work environment as the COVID-19 pandemic persisted during 2022. It aligned with and followed the guidance of the world's leading health authorities, as well as related local, regional, and national government directives.

Expanded Human Capital Disclosure

Additional human capital information is included in the company's Environmental, Social, and Governance Report ("ESG Report"), which is available on the Arrow.com website. Information contained in the company's ESG Report and website is not deemed part of, or incorporated by reference into, this Annual Report on Form 10-K.

Available Information

The company files its Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, Proxy Statements, and other documents with the U.S. Securities and Exchange Commission ("SEC") under the Securities Exchange Act of 1934 (as amended, the "Exchange Act"). The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The company's SEC filings are available to the public on the SEC's website at www.sec.gov.

A copy of any of the company's filings with the SEC, or any of the agreements or other documents that constitute exhibits to those filings, can be obtained by request directed to the company at the following address and telephone number:

Arrow Electronics, Inc.
9201 East Dry Creek Road
Centennial, Colorado 80112
(303) 824-4000
Attention: Corporate Secretary

The company also makes these filings, and amendments to these filings, available, free of charge, through its Investor Relations website (investor.arrow.com/investors) as soon as reasonably practicable after the company files such materials with the SEC. The company does not intend this internet address to be an active link or to otherwise incorporate the contents of the website into this Annual Report on Form 10-K.

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Information about the Executive Officers

The following table sets forth the names, ages, and the positions held by each of the executive officers of the company as of February 9, 2023:

Name	Age	Position
Sean J. Kerins	60	President, Chief Executive Officer
Michael J. Long	64	Executive Chairman
Rajesh K. Agrawal	57	Senior Vice President, Chief Financial Officer
Carine L. Jean-Claude	55	Senior Vice President, Chief Legal Officer and Secretary
Kristin D. Russell	52	President, Arrow Global Enterprise Computing Solutions
Kirk D. Schell	57	President, Arrow Global Components
Gretchen K. Zech	53	Senior Vice President, Chief Governance, Sustainability, and Human Resources Officer

Set forth below is a brief account of the business experience during the past five years of each executive officer of the company.

Sean J. Kerins was appointed President, Chief Executive Officer in June 2022. Prior thereto, he served as Chief Operating Officer since December 2020. Prior thereto, he served as President of Arrow Global Enterprise Computing Solutions for more than five years.

Michael J. Long was appointed Executive Chairman in June 2022. Prior thereto, he served as President, Chief Executive Officer of the company for more than five years.

Rajesh K. Agrawal was appointed Senior Vice President, Chief Financial Officer in September 2022. Prior thereto, he served as Executive Vice President, Chief Financial Officer for The Western Union Company for more than five years.

Carine L. Jean-Claude was appointed Senior Vice President, Chief Legal Officer and Secretary in June 2021. Prior thereto, she served as Vice President, Interim Chief Legal Officer and Secretary since December 2020. Prior thereto, she served as Vice President, Legal Affairs since 2017.

Kristin D. Russell was appointed President, Arrow Global Enterprise Computing Solutions in December 2020. Prior thereto, she served as President, Arrow Intelligent Systems from May 2016 to December 2020.

Kirk D. Schell was appointed President, Arrow Global Components in May 2022. Prior thereto, he served as Senior Vice President, Client Solutions Group Sales at Dell Technologies for more than five years.

Gretchen K. Zech was appointed Senior Vice President, Chief Governance, Sustainability, and Human Resources Officer in February 2022. Prior thereto, she served as Senior Vice President and Chief Human Resources Officer of the company for more than five years.

Item 1A. Risk Factors.

Described below and in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Quantitative and Qualitative Disclosures about Market Risk” are certain risks that the company’s management believes are applicable to the company’s business and the industries in which it operates. If any of the described events occur, the company’s business, results of operations, financial condition, liquidity, or access to the capital markets could be materially adversely affected. When stated below that a risk may have a material adverse effect on the company’s business, it means that such risk may have one or more of these effects. There may be additional risks that are not presently material or known.

Business Risks

If the company is unable to maintain its relationships with its suppliers, if the suppliers materially change the terms of their existing agreements with the company, if suppliers cease selling their products through distribution generally, or if supply chain shortages and other disruptions occur, the company’s business could be materially adversely affected.

A substantial portion of the company’s inventory is purchased from suppliers with which the company has entered into non-exclusive distribution agreements. These agreements are typically cancellable at any time or on short notice (generally 30 to 90 days). However, the recent global semi-conductor shortages have resulted in some suppliers increasing the amount of non-cancellable orders, which limits the company’s ability to adjust down its inventory levels in the event of market downturns, and could have a negative impact on the financial results of the company, particularly if the company is unable to pass such non-cancellable terms on to customers.

Some of the company’s businesses rely on a limited number of suppliers to provide a high percentage of their revenues. For example, sales of products from one of the company’s suppliers accounted for approximately 13% of the company’s consolidated sales in 2022. To the extent that the company’s significant suppliers reduce the number of products they sell through distribution or cease selling their products through distribution entirely, experience disruptions in their supply chains, cease to continue doing business with the company, or are unable to continue to meet or significantly alter their obligations, the company’s business could be materially adversely affected. In addition, to the extent that the company’s suppliers modify the terms of their contracts to the detriment of the company, limit supplies due to capacity constraints, or other factors, there could be a material adverse effect on the company’s business. Further, the supplier landscape has continued to experience a consolidation, which could negatively impact the company if the surviving, consolidated suppliers decide to exclude the company from their supply chain efforts, and which could expose the company to increased risks, including increased pricing and dependence on a smaller number of suppliers. Increasing consolidation in the industries where the company’s suppliers operate may occur as companies combine to achieve further economies of scale and other synergies, which could result in reduced supplies, as companies seek to eliminate duplicative product lines, and increased prices, which could have a material adverse effect on the company’s business.

The global COVID-19 pandemic continues to impact the company's business, particularly in China and the Asia/Pacific region, through significant shortages, disruptions, constraints, extended lead times, and unpredictability across the global supply chain; which has resulted in rapidly changing market conditions, including frequent, and unpredictable, increases in the price of products and services the company sells. Further disruptions to the supply chain due to the COVID-19 pandemic or other global or domestic events could materially adversely impact the company’s business, and the company may not be able to mitigate or prevent disruptions that may arise from shortages, or the other related impacts discussed above, particularly if the company is unable to pass price increases on to customers, or if the company experiences significant decreases in price, or other pricing pressures caused by disruption of the global markets in which it operates. Refer to "COVID-19 Pandemic Update" in Management's Discussion & Analysis of Financial Condition and Results of Operations for a further discussion about the company's description about the impacts of COVID-19.

The company’s revenues originate primarily from the sales of semiconductor, (passive, electro-mechanical and connector) (PEMCO), and IT hardware and software products, the sales of which are traditionally cyclical and may be impacted by shortages and other disruptions in the global supply chain.

The semiconductor industry historically has experienced fluctuations in product supply and demand, often associated with changes in technology and manufacturing capacity and subject to significant economic market upturns and downturns. Sales of semiconductor products and related services represented approximately 60%, 57%, and 54%, of the company’s consolidated sales in 2022, 2021, and 2020, respectively. The sale of the company’s PEMCO products closely tracks the semiconductor market. Accordingly, the company’s revenues and profitability, particularly in its global components business segment, may be adversely affected by weakness in the semiconductor market. Further, economic weakness could cause a decline in spending in information technology, which could reduce demand for semiconductors and other products and related services and thereby have a negative impact on the company’s ECS business. A cyclical downturn in the technology industry could have a material adverse effect on the company’s business and negatively impact its ability to maintain historical profitability levels.

The competitive pressures the company faces, such as pricing and margin reductions, could have a material adverse effect on the company's business.

The company operates in a highly competitive international environment. The company competes with other large multinational and national electronic components and enterprise computing solutions distributors, as well as numerous other smaller, specialized competitors who generally focus on narrower market sectors, products, or industries. The company also competes for customers with its suppliers. The size of the company's competitors varies across market sectors, as do the resources the company has allocated to the sectors in which it does business. Therefore, some of the company's competitors may have a more extensive customer and/or supplier base than the company in one or more of its market sectors. There is significant competition within each market sector and geography that creates pricing and margin pressure and the need for constant attention to improve service and product offerings and increase market share. Other competitive factors include rapid technological changes, product availability, credit availability, speed of delivery, ability to tailor solutions to changing customer needs, and quality and depth of product lines and training, as well as service and support provided by the distributor to the customer. The company also faces competition from companies in the logistics and product fulfillment, catalog distribution, e-commerce, and supply chain services markets. As the company continues to expand its business into new areas in order to stay competitive in the market, the company may encounter increased competition from its current and/or new competitors, making it difficult to retain its market share. Further, the enterprise computing solutions industry has recently experienced, and continues to experience increased consolidation, resulting in companies with greater scale, market presence, and purchasing power. As a result, competition among enterprise computing distributors has increased.

Declines in value of the company's inventory could materially adversely affect its business.

The market for the company's products and services is subject to rapid technological changes, evolving industry standards, changes in end-market demand, evolving customer expectations, oversupply of product, and regulatory requirements, which can contribute to the decline in value or obsolescence of inventory. Although many of the company's suppliers provide the company with certain protections from the loss in value of inventory (such as price protection and certain rights of return), the company cannot be sure that such protections will fully compensate it for the loss in value, that the suppliers will choose to, or be able to, honor such agreements, or that the company will be able to continue to secure such protections in the future. For example, many of the company's suppliers will not allow products to be returned after they have been held in inventory beyond a certain amount of time, and, in most instances, the return rights are limited to a certain percentage of the amount of products the company purchased in a particular time frame. Therefore, the company is not fully protected from declines in the value of the company's inventory, and such decline could have a material adverse effect on the company's business.

The company's lack of long-term sales contracts may have a material adverse effect on its business.

Most of the company's sales are made on an order-by-order basis, rather than through long-term sales contracts. The company generally works with its customers to develop non-binding forecasts for future orders. Based on such non-binding forecasts, the company makes commitments regarding the level of business that it will seek and accept, the inventory that it purchases, and the levels of utilization of personnel and other resources. A variety of conditions over which the company has little or no control, both specific to each customer or generally affecting each customer's industry or the broader market may cause customers to cancel, reduce, or delay orders that were either previously made or anticipated, file for bankruptcy protection, or default on their payments. Significant or numerous cancellations, reductions, delays in orders by customers, loss of customers, changing in pricing driven by changing environmental laws and regulations, or the effects of climate change on pricing and sourcing, and/or customer defaults on payments could materially adversely affect the company's business.

The company's non-U.S. sales represent a significant portion of its revenues, and consequently, the company is exposed to risks associated with operating internationally.

In 2022, 2021, and 2020, approximately 65%, 66%, and 65%, respectively, of the company's sales came from its operations outside the United States. As a result of the company's international sales and locations, its operations are subject to a variety of risks inherent in international operations, including the following:

- import and export regulations that could erode profit margins or restrict exports;
- the burden and cost of compliance with international laws, regulations, treaties, and technical standards, including with respect to tax;
- potential restrictions on transfers of funds;
- trade protection measures, import and export tariffs and other restrictions, duties and value-added taxes;
- transportation delays and interruptions;
- uncertainties arising from local business practices and cultural considerations;
- foreign laws that potentially discriminate against or disfavor companies headquartered outside the relevant jurisdiction;
- stringent antitrust regulations in local jurisdictions;

- volatility associated with sovereign debt of certain international economies;
- various jurisdictions' environmental protection laws and regulations, including those related to climate change;
- potential social unrest, military conflicts, government shutdowns and disruptions, and other geopolitical risks and uncertainties; and
- currency fluctuations.

Refer to “Impacts of changing foreign currency exchange rates” in Management’s Discussion & Analysis of Financial Condition and Results of Operations and “Foreign Currency Exchange Risk” in Item 7.A Quantitative and Qualitative Disclosures About Market Risk for a further discussion of the company’s description of the impacts of foreign currency exchange rates on the company’s results and projections.

Further, the company’s gross margins in the components business in the Asia/Pacific region tend to be lower than those in other markets in which the company sells products and services. If sales in this market increase as a percentage of overall sales, consolidated gross margins will be lower.

Changes in the company’s global mix of earnings, and changes in tax law and policy, could cause fluctuations in the company's effective tax rate, and could materially adversely impact results.

The company’s effective tax rate may be adversely impacted by, among other things, changes in the geographic mix of earnings that are subject to income taxes both in the U.S. and various foreign jurisdictions. Tax regulations governing each jurisdiction impact statutory tax rates, deferred tax assets and liabilities, valuation allowances on deferred tax assets, and ultimately income taxes payable. Refer to Note 1 of the Notes to the Consolidated Financial Statements for a further discussion of the company’s determination of the value of its deferred tax assets and liabilities and uncertain tax positions.

The estimated effects of applicable tax laws, including current interpretation of the U.S. Tax Cuts and Jobs Act of 2017 and the Inflation Reduction Act of 2022, have been incorporated into the company’s financial results. However, the U.S. Department of Treasury, Internal Revenue Service ("IRS"), and other standard-setting bodies could issue future legislation or guidance that might be different from the company’s interpretation. In addition, many global political leaders have recently committed to adopt fundamental changes to international taxation based on a proposal from the Organization for Economic Cooperation and Development (Base Erosion and Profit Shifting Framework), including the potential for a new global minimum tax regime, amongst other proposals. Such tax developments could further increase uncertainty and have a material adverse impact on the company’s cash flows, effective tax rate and financial results. Additional changes to U.S. or foreign tax laws could have broader implications, including impacts to the economy, currency markets, inflation or competitive dynamics, which are difficult to predict, and may positively or negatively impact the company.

Additionally, the company’s tax returns are subject to periodic audits by U.S. and foreign tax authorities. These audits may result in global reallocation of income and expense that is different from what has been estimated in the company's financial results. The company regularly assesses the likelihood of such adverse outcomes to ensure the adequacy of its tax provision and financial results. Such tax audit developments could have an adverse effect on the company’s tax liability, increase effective tax rates, increase the complexity and cost of tax compliance, all of which could impact the company’s operating results, cash flows, and financial condition.

When the company makes acquisitions, it may take on additional liabilities or may not be able to successfully integrate such acquisitions.

As part of the company’s history and growth strategy, it has acquired other businesses. Acquisitions involve numerous risks, including the following:

- effectively combining the acquired operations, technologies, or products;
- unanticipated costs or assumed liabilities, including those associated with regulatory actions or investigations;
- not realizing the anticipated financial benefit from the acquired companies;
- diversion of management’s attention;
- negative effects on existing customer and supplier relationships; and
- potential loss of key employees of the acquired companies.

Further, the company has made, and may continue to make acquisitions of, or investments in new services, businesses or technologies to expand its current service offerings and product lines. Some of these may involve risks that may differ from those traditionally associated with the company’s core distribution business. In addition, the company's effective tax rate for future periods could be impacted by mergers and acquisitions. If the company is not successful in mitigating or insuring against such risks, it could have a material adverse effect on the company’s business.

If the company is not able to invest successfully in and introduce digital and other technological developments, or its suppliers are not able to continue to offer competitive components and electronic computing solutions, it could materially adversely impact results.

The company's industry is subject to rapid and significant technological changes, and the company's ability to meet its customers' needs and expectations is key to the company's ability to grow sales and earnings. The company expects digital technologies to have a significant impact on distribution of components and electronic computing solutions over time, and its customers increasingly expect the company's platforms to offer a digital customer experience. For example, the ability for customers to access their accounts, place orders, and otherwise interface with the company using digital technology is an important aspect of the distribution industry, and distribution companies are rapidly introducing new digital and other technology-driven products and services that aim to offer a better customer experience and reduce costs.

The company's sales are also partially dependent on continued innovations in components and electronic computing solutions by its suppliers, the competitiveness of its suppliers' offerings, and the company's ability to partner with new and emerging technology providers. See also "*The competitive pressures the company faces, such as pricing and margin reductions, could have a material adverse effect on the company's business*".

Operational Risks

The company's success depends upon its ability to attract, retain, motivate, and develop key executive and employee talent and the strategies they develop and implement.

Any failure to attract, retain, motivate, and develop key executive and employee talent may materially and adversely affect the company's business. The company's success depends, to a significant extent, on the capability, expertise, and continued services of its key executives. The company relies on the expertise and experience of certain key executives in developing business strategies, business operations, and maintaining relationships with customers and suppliers. If the company were to lose any of its key executives, it may not be able to find a suitable replacement with comparable knowledge and experience in a timely manner, or if at all, at a similar level of remuneration and other benefits.

Additionally, management transitions, such as the company's transition to a new Chief Executive Officer and Chief Financial Officer in 2022, may create uncertainty, divert resources and management attention, or impact public or market perception, any of which could negatively impact the company's ability to operate effectively or execute its strategies and result in an adverse impact on its business. Further, these new executives may have different backgrounds, experiences and perspectives from those individuals who previously served in these roles and thus may have different views on the issues that will determine the company's future, potentially resulting in employee, customer, and supplier uncertainty.

The company relies heavily on its internal information systems, which, if not properly functioning, could materially adversely affect the company's business.

The company's current global operations reside on multiple technology platforms. The size and complexity of the company's computer systems make them potentially vulnerable to breakdown, malicious intrusion, and random attack. Failure to properly or adequately address any unaccounted for or unforeseen issues could impact the company's ability to perform necessary business operations, which could materially adversely affect the company's business.

The ongoing conflict between Ukraine and Russia could adversely affect the company's results of operations, consolidated financial condition, and business.

Russia's military actions against Ukraine have led to an unprecedented expansion of export restrictions and sanctions imposed by the United States, the European Union, the United Kingdom, and numerous other countries against Russia and Belarus. In addition, Russian authorities have imposed significant currency control measures, other sanctions and imposed other economic and financial restrictions. The situation is rapidly evolving, and further sanctions and export restrictions could negatively impact the global economy and financial markets and could adversely affect the company's business.

The company cannot predict the progress, outcome, or impact of the conflict in Ukraine, Russia, or Belarus as the conflict, and any resulting government reactions are beyond the company's control. The company is actively monitoring the conflict in Ukraine to assess its impact on its business, as well as on the company's vendors, suppliers, customers, and other parties with whom the company does business.

Cyber Risk

Cyber security and privacy incidents as well as ransomware may hurt the company's business, damage its reputation, increase its costs, and cause losses.

The company's information technology systems could be subject to cyber security and privacy incidents, including, but not limited to, invasion, fraudulent inducement by third parties of sensitive information from employees, customers, or suppliers; cyber-attacks; ransom demands; or data privacy breaches by unauthorized persons as well as employees and others with authorized access. Such attacks could result in disruption to the company's operations and/or loss or compromise of, or damage to, the company's or any of its customers' or suppliers' data, confidential information, or reputation.

Any such incident, whether successful or unsuccessful, could result in, without limitation, significant legal, regulatory, and financial exposure, damage to the company's reputation, significant costs related to rebuilding internal systems, managing company brand and reputation, litigation, damages, responding to regulatory inquiries, and taking other remedial steps; loss of competitive advantage; and a loss of confidence in the security of the company's information technology systems, in each case, that could potentially have an adverse impact on the company's business. Because the techniques used to gain unauthorized access, disable, or sabotage the company's information technology systems and data stored on those systems change frequently and often are not recognized until launched, the company may be unable to anticipate these techniques or to implement adequate preventive or protective measures. Further, third parties, such as hosted solution providers, could be a source of risk in the event of a failure of their own systems and infrastructure or could experience their own privacy or security event which could create risks similar to those described above.

Global privacy legislation, enforcement, and policy activity are also rapidly expanding and creating a complex compliance environment. The company's actual or perceived failure to comply with federal, state, or international privacy related or data protection laws and regulations could result in proceedings against the company by governmental entities or others, which could have a material adverse effect on its business.

Regulatory and Legal Risks

Products sold by the company may be found to be defective and, as a result, warranty and/or product liability claims may be asserted against the company, which may have a material adverse effect on the company.

The company sells its components at prices that are significantly lower than the cost of the equipment or other goods in which they are incorporated. As a result, the company may face claims for damages (such as consequential damages) that are disproportionate to the revenues and profits it receives from the components involved in the claims. Further, the company's ability to avoid such liabilities pursuant to defective product provisions in its supplier agreements may be limited as a result of differing factors, such as the inability to exclude such damages due to the laws of some of the countries where the company does business. The company's business could be materially adversely affected as a result of a significant quality or performance issue in the products sold by the company, if it is required to pay for the associated damages. The company's product liability insurance is limited in coverage and amount and may not be sufficient to cover all possible claims. Further, when relying on contractual liability exclusions, the company could lose customers if their claims are not addressed to their satisfaction.

Tariffs may result in increased prices and could adversely affect the company's business and results of operations.

In recent years, the U.S. government has imposed tariffs on certain products imported into the U.S., and the Chinese government has imposed tariffs on certain products imported into China, which have increased the prices of many of the products that the company purchases from its suppliers. The tariffs, along with any additional tariffs or trade restrictions that may be implemented by the U.S., China, or other countries, could result in further increased prices. While the company may be able to pass any price increases on to its customers, the effect of tariffs on prices may impact sales and results of operations. Retaliatory tariffs imposed by other countries on U.S. goods have not yet had a significant impact, but the company cannot predict further developments. Tariffs and the additional operational costs incurred in minimizing the number of products subject to the tariffs could adversely affect the operating profits for certain of the company's businesses and customer demand for certain products, which could have an adverse effect on its business and results of operations.

In addition, if the company pays tariffs for products it imports from China which are then re-exported to other locations outside of the United States, the company may be eligible for refunds of certain tariffs. To qualify for these tariff drawbacks, the company must provide data and documentation to the U.S. government that it must obtain from third party sources, such as its suppliers, which the company may not be able to source and could result in the U.S. government rejecting the drawback requests. Qualifying for tariff drawbacks also requires administrative cost. Due to the backlog of drawback applications, the U.S. government has been slow in issuing the associated drawback refunds, and the company's inability to obtain the drawback refunds or significant delays in receiving them could result in a material adverse effect on the company's business.

The company is subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws, anti-bribery laws, and anti-money laundering laws and regulations. In the event of non-compliance, the company can face serious consequences, which can harm its business.

The company is subject to export control and import laws and regulations, including the U.S. Export Administration Regulations ("EAR"), U.S. Customs regulations, and various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls ("OFAC"). Products the company sells which are either manufactured in the United States or based on U.S. technology ("U.S. Products") are subject to the EAR when exported and re-exported to and from all international jurisdictions, in addition to the local jurisdiction's export regulations applicable to individual shipments. Licenses or proper license exemptions may be required by local jurisdictions' export regulations, including EAR, for the shipment of certain U.S. Products to certain countries, including China, India, Russia, and other countries in which the company operates. Non-compliance with the EAR, OFAC regulations, or other applicable export regulations can result in a wide range of penalties including the denial of export privileges, fines, criminal penalties, and the seizure of inventories. In the event that any export regulatory body determines that any shipments made by the company violate the applicable export regulations, the company could be fined significant sums and/or its export capabilities could be restricted, which could have a material adverse effect on the company's business. For example, as described in the company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021, filed on February 11, 2022, the company facilitated product shipments to persons covered by the Iran Threat Reduction and Syria Human Rights Act of 2012 or other United States sanctions and export control laws. The company's distribution process also includes the use of third parties that operate outside of the company's direct control. Noncompliance with applicable import, export, and other laws and regulations by these third parties may negatively impact the company.

Further, the company is also subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.S. domestic bribery statute contained in 18 U.S.C. §201, and other national and sub-national anti-bribery and anti-money laundering laws in the countries in which it conducts business. Anti-corruption laws have been enforced aggressively in recent years, are interpreted broadly and prohibit companies and their employees, agents, contractors, and other affiliated parties from authorizing, promising, offering, or providing, directly or indirectly, improper payments or transfers of money or anything else of value to recipients in the public or private sector. The company engages third parties to provide services. The company can be held liable for the corrupt or other illegal activities of its employees, agents, contractors, and counterparties, even if it does not explicitly authorize or have actual knowledge of such activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences.

The company is subject to environmental laws and regulations and sustainability initiatives, and may be impacted by climate change, in ways that could materially adversely affect its business.

A number of jurisdictions in which the company's products are sold have enacted laws addressing environmental and other impacts from product disposal, use of hazardous materials in products, use of chemicals in manufacturing, recycling of products at the end of their useful life, and other related matters. These laws prohibit the use of certain substances in the manufacture of products sold by the company and impose a variety of requirements for modification of manufacturing processes, registration, chemical testing, labeling, and other matters. Failure to comply with these laws or any other applicable environmental regulations could result in fines or suspension of sales. Additionally, these directives and regulations may result in the company having non-compliant inventory that may be less readily salable or have to be written off.

Certain environmental laws impose liability, sometimes without fault, for investigating or cleaning up contamination on or emanating from the company's currently or formerly owned, leased, or operated property, as well as for damages to property or natural resources and for personal injury arising out of such contamination. Under these laws and regulations, the company may be responsible for investigating, removing, or otherwise remediating hazardous substances released at properties or facilities it owns or operates, regardless of when such substances were released. As the distribution business, in general, does not involve the manufacture of products, it is typically not subject to significant liability in this area. However, there may be occasions, including through acquisitions, where environmental liability arises. For example, the company assumed responsibility for environmental remediation on two sites that it acquired as part of the Wyle Electronics ("Wyle") acquisition in August 2000, which such remediation and related assessment remains ongoing. The company was also named as a defendant in a private lawsuit filed in connection with alleged contamination at a small industrial building formerly leased by Wyle Laboratories in El Segundo, California. That lawsuit was ultimately settled, but the possibility remains that government entities or others may attempt to involve the company in further characterization or remediation of groundwater issues in the area. The presence of environmental contamination at any of the company's locations could also interfere with ongoing operations or adversely affect the company's ability to sell or lease its properties. The discovery of contamination for which the company is responsible, the enactment of new laws and regulations, or changes in how existing regulations are enforced, could require the company to incur costs for compliance or subject it to unexpected liabilities.

Additionally, long-term climate change impacts, including the frequency and magnitude of severe weather events, and natural disasters, may significantly impact the company's operations and business, either directly or indirectly, by adversely affecting the price and availability of energy, and the supply of other services or materials throughout the company's supply chain, any of which could have a material adverse effect on the company's business.

Proposed and existing efforts to address concerns over climate change by reducing greenhouse gas emissions could directly or indirectly affect the company's costs of energy and other operating costs. Investors, customers, and other stakeholders are also placing a greater emphasis on environmental, social, and governance factors, and the company may be unable to meet investor expectations in this regard. In the event that the company communicates certain initiatives or goals regarding environmental, social, and governance matters, it could fail, or be perceived to fail, in its achievement of such initiatives or goals, or it could be criticized for the scope of such initiatives or goals. A failure to adequately meet these various stakeholder expectations and standards may result in reputational damage, the loss of business, diluted market valuation, an inability to attract customers or an inability to attract and retain top talent. In addition, a number of the company's customers have adopted, or may adopt, procurement policies that may impose sustainability standards on suppliers. The perceptions held by the company's shareholders, potential investors, suppliers, customers, other stakeholders, or the communities in which the company does business may depend, in part, on whether the company meets on a timely basis or at all the sustainability standards imposed on the company or that the company chooses or aspires to achieve. The subjective nature and wide variety of methods and processes used by various stakeholders, including investors, to assess environmental, social, and governance criteria could result in a negative perception or misrepresentation of the company's sustainability policies and practices. Also, by electing to establish and publicly share the company's sustainability standards, the company's business may face increased scrutiny related to sustainability activities, and the company's reputation could be harmed. In addition, sustainability related laws, regulations, requirements, and initiatives may increase compliance costs. For example, future rules and regulations that provide for enhanced and standardized climate-related disclosures, if adopted, may result in additional legal, accounting, and financial compliances costs; make some activities more difficult, time-consuming and costly; and strain the company's personnel, systems, and resources.

The company may be subject to intellectual property rights claims, which are costly to defend, could require payment of damages or licensing fees and could limit the company's ability to use certain technologies in the future.

Certain of the company's products and services include intellectual property owned primarily by the company's third party suppliers and, to a lesser extent, the company itself. Substantial litigation and threats of litigation regarding intellectual property rights exist in the semiconductor/integrated circuit, software and some service industries. From time to time, third parties (including certain companies in the business of acquiring patents not for the purpose of developing technology but with the intention of aggressively seeking licensing revenue from purported infringers) may assert patent, copyright and/or other intellectual property rights to technologies that are important to the company's business, and the company may not be able to seek indemnification from its suppliers for itself and its customers against such claims. In addition, the company is exposed to potential liability for technology that it develops itself or when it combines multiple technologies of its suppliers for which it may have limited or no indemnification protections. In any dispute involving products or services that incorporate intellectual property from multiple sources or that is developed, licensed by the company, or obtained through acquisition, the company's customers could also become the targets of litigation. The company may be obligated to indemnify and defend its customers if the products or services the company sells are alleged to infringe any third party's intellectual property rights. Any infringement or indemnification claim brought against the company, regardless of the duration, outcome, or size of damage award, could:

- result in substantial cost to the company;
- divert management's attention and resources;
- be time consuming to defend;
- result in substantial damage awards; or
- cause product shipment delays.

Additionally, if an infringement claim against the company or its customers is successful, the company may be required to pay damages or seek royalty or license arrangements, which may not be available on commercially reasonable terms. The payment of any such damages or royalties may significantly increase the company's operating expenses and materially harm the company's operating results and financial condition. Further, royalty or license arrangements may not be available at all, which would then require the company to stop selling certain products or using certain technologies, which could negatively affect the company's ability to compete effectively.

Restrictions on immigration or changes in immigration laws could limit the company's access to qualified and skilled professionals, increase the cost of doing business, or otherwise disrupt operations.

Restrictions on immigration or changes in immigration laws could limit the company's access to qualified and skilled professionals, increase the cost of doing business, or otherwise disrupt operations. The success of portions of the company's business is dependent on its ability to recruit engineers and other professionals. Immigration laws in the United States and other countries in which the company operates are subject to legislative changes, as well as variations in the standards of application and enforcement due to political forces and economic conditions. It is difficult to predict the political and economic events that could affect immigration laws, or the restrictive impact they could have on obtaining or renewing work visas. If immigration laws change or if more restrictive government regulations are enacted, the company's access to qualified and skilled professionals may be limited, the costs of doing business may increase, operations may be disrupted, and the company's business may be materially negatively impacted.

The company may not be able to adequately anticipate, prevent, or mitigate damage resulting from criminal and other illegal or fraudulent activities committed against it or as a result of misconduct or other improper activities by its employees or contractors.

Global businesses are facing increasing risks of criminal, illegal, and other fraudulent acts. Due to the evolving nature of such threats, considering new and sophisticated methods used by criminals, including phishing, misrepresentation, social engineering, and forgery, it is increasingly difficult for the company to anticipate and adequately mitigate these risks. In addition, designing and implementing measures to defend against, prevent, and detect these types of activities are increasingly costly and invasive to the operations of the business. Misconduct or failure of its employees or contractors to adhere to company policy may further heighten such risks. As a result, the company could experience a material loss to the extent that controls and other measures implemented to address these threats fail to prevent or detect such acts.

In addition, misconduct by its employees or contractors may include intentional or negligent failures to comply with the applicable laws and regulations in the United States and abroad, safeguard personally identifiable information, report financial information or data accurately, or disclose unauthorized activities to the company. Such misconduct could result in legal or regulatory sanctions and cause serious harm to the company, including to its reputation.

It is not always possible to identify and deter employee misconduct, and any other precautions the company takes to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses, or in protecting the company from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against the company, and it is not successful in defending itself or asserting its rights, those actions could result in the imposition of significant civil, criminal, and administrative penalties, which could have a significant impact on the company's business. Whether or not the company is successful in defending against such actions or investigations, it could incur substantial costs, including legal fees, and divert the attention of management in defending itself against any of these claims or investigations.

Financial Risks

The company may not have adequate or cost-effective liquidity or capital resources.

The company requires cash or committed liquidity facilities for general corporate purposes, such as funding its ongoing working capital, acquisitions, and capital expenditure needs, as well as to refinance indebtedness. At December 31, 2022, the company had cash and cash equivalents of $176.9 million. In addition, the company currently has access to a committed revolving credit line of $2.0 billion and a committed North American asset securitization program of $1.5 billion, of which the company had $1.2 billion in outstanding borrowings at December 31, 2022. The company's ability to satisfy its cash needs depends on its ability to generate cash from operations and to access the financial markets, both of which are subject to general economic, financial, competitive, legislative, regulatory, and other factors that are beyond its control.

The company may, in the future, need to access the financial markets to satisfy its cash needs. The company's ability to obtain external financing is affected by various factors, including general financial market conditions and the company's debt ratings. For example, economic uncertainty or adverse economic conditions resulting from the impacts of and responses to pandemics and other public health issues (including the COVID-19 pandemic), natural disasters, changes in global, national, or regional economies, inflation, governmental policies, political unrest, military action and armed conflicts (such as the 2022 Russian invasion of Ukraine), terrorist activities, political and social turmoil, civil unrest, and other crises could result in significant or sustained disruption of global financial markets, thereby reducing the company's access to capital.

Further, any increase in the company's level of debt or deterioration of its operating results may cause a reduction in its current debt ratings. Any downgrade in the company's current debt rating or tightening of credit availability could impair the company's ability to obtain additional financing, redeem existing indebtedness, or renew existing credit facilities on acceptable terms, if at all, negatively impact the price of the company's common stock, increase its interest payments under existing debt agreements and have other negative implications on its business, many of which are beyond the company's control. Under the terms of any additional external financing, the company may incur higher financing expenses and become subject to additional restrictions and covenants. For example, the company's existing debt agreements contain restrictive covenants, including covenants requiring compliance with specified financial ratios, and a failure to comply with these or any other covenants may result in an event of default. An increase in the company's financing costs or loss of access to cost-effective capital resources could have a material adverse effect on the company's business.

The agreements governing some of the company's financing arrangements contain various covenants and restrictions that limit some of management's discretion in operating the business and could prevent the company from engaging in some activities that may be beneficial to its business.

The agreements governing some of the company's financings contain various covenants and restrictions that, in certain circumstances, could limit its ability to:

- grant liens on assets;
- make investments or certain acquisitions;
- merge, consolidate, or transfer all or substantially all of its assets;
- incur additional debt; or
- engage in certain transactions with affiliates.

As a result of these covenants and restrictions, the company may be limited in how it conducts its business and may be unable to raise additional debt, compete effectively, or make investments.

Further, if an event of default under any of the company's existing debt agreements occurred or became imminent, alternative sources of capital may be more expensive than the costs incurred under the company's existing credit facilities. Further, the company may be unable to borrow additional amounts under the existing credit facility, and as a result may be unable to make acquisitions, fund share repurchases, or meet other financial obligations, and the lenders thereunder may be able to accelerate the company's obligations under the credit facility. This circumstance would have a material adverse effect on the company's financial position and results of operations.

The company's goodwill and identifiable intangible assets could become impaired, which could reduce the value of its assets and reduce its net income in the year in which the write-off occurs.

The company may incur impairment charges on goodwill or identifiable intangible assets if it determines that the fair values of the goodwill or identifiable intangible assets are less than their current carrying values. If events or circumstances occur that indicate all, or a portion, of the carrying amount of goodwill or identifiable intangible assets is or may no longer be recoverable, an impairment charge to earnings may become necessary.

A decline in general economic conditions, a substantial increase in market interest rates, and increase in income tax rates, or the company's inability to meet long-term working capital or operating income projections could impact future valuations of the company's reporting units, and the company could be required to record an impairment charge in the future, which could impact the company's consolidated balance sheets, as well as the company's consolidated statements of operations. If the company were required to recognize an impairment charge in the future, the charge would not impact the company's consolidated cash flows, current liquidity, capital resources, and covenants under its existing revolving credit facility, North American asset securitization program, and other outstanding borrowings.

General Risks

If the company fails to maintain an effective system of internal controls or discovers material weaknesses in its internal controls over financial reporting, it may not be able to report its financial results accurately or timely or detect fraud, which could have a material adverse effect on its business.

An effective internal control environment is necessary for the company to produce reliable financial reports, safeguard assets, and is an important part of its effort to prevent financial fraud. There are inherent limitations on the effectiveness of internal controls, including collusion, management override, and failure in human judgment. In addition, control procedures are designed to reduce rather than eliminate financial statement risk. If the company fails to maintain an effective system of internal controls, or if management or the company's independent registered public accounting firm discovers material weaknesses in the company's internal controls, it may be unable to produce reliable financial reports or prevent fraud, which could have a material adverse effect on the company's business. In addition, the company may be subject to sanctions or investigation by regulatory authorities, such as the SEC or the NYSE. Any such actions could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of the company's consolidated financial statements, which could cause the market price of its common stock to decline or limit the company's access to capital.

General business conditions are vulnerable to the effects of epidemics and pandemics, such as the COVID-19 pandemic, which could materially disrupt the company's business and have a negative impact on the company's financial results and financial condition.

The company is vulnerable to the general economic effects of epidemics, pandemics, and other public health crises, such as the COVID-19 pandemic. The global COVID-19 pandemic continues to create macroeconomic uncertainty, volatility, and disruption, including supply constraints, extended lead times, and unpredictability across many markets. Supply chain logistical issues due to shutdowns in response to the COVID-19 pandemic, primarily in China, are resulting in extended lead times and unpredictability. The extent to which COVID-19 and ensuing challenges such as supply chain constraints will continue to impact the company's results remains uncertain considering the rapidly evolving environment, duration, and severity of the spread of COVID-19, emerging variants, and vaccine booster effectiveness, among others. In addition, a U.S. or global recession or a banking crisis triggered by a pandemic, including the COVID-19 pandemic, could have a material adverse effect on the company's business, financial results and financial condition, including by reducing the demand for its products and services, reducing the access to its supplies, increasing customer defaults, reducing its access to capital, and reducing the value of its common stock. Refer to "COVID-19 Pandemic Update" in Management's Discussion & Analysis of Financial Condition and Results of Operations for a further discussion about the company's description about the impacts of COVID-19.

Global, regional and local economic weakness and uncertainty could have a material adverse effect on the company's financial performance.

The company's business and financial performance depend on worldwide economic conditions and the demand for technology products and services in the markets in which the company competes. Ongoing economic weakness, uncertainty in markets throughout the world, and other adverse economic conditions may result in decreased net revenue, gross margin, earnings, growth rates or cash flows, and in increased expenses and difficulty in managing inventory levels, collecting customer receivables, and accurately forecasting revenue, gross margin, cash flows and expenses. Political developments impacting international trade, trade disputes and increased tariffs, particularly between the United States and China, may negatively impact markets and cause weaker macroeconomic conditions, weakening demand for the company's products and services.

Poor financial performance of asset markets combined with lower interest rates and the adverse effects of fluctuating currency exchange rates could lead to higher pension and post-retirement benefit expenses. Economic downturns also may lead to future restructuring actions and associated expenses, any of which could have a material adverse effect on the company's business.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

The company has executive offices located in Centennial, Colorado under a long-term lease expiring in 2033. The company leases six major warehouses and logistics centers with approximately 2.5 million square feet of space located in Reno, Nevada, Phoenix, Arizona, Hong Kong, Shenzhen, China, Johor Bahru, Malaysia, and Venlo, Netherlands. The company has 37 smaller distribution centers with approximately 1.2 million square feet of space located throughout the Americas, EMEA, and Asia/Pacific regions. The company believes its facilities are well maintained and suitable for company operations, and does not anticipate significant difficulty in renewing its leases as they expire or securing replacement facilities.

Item 3. Legal Proceedings.

See Note 14, Contingencies, to the consolidated financial statements included in Part II, Item 8 of this 10-K for information regarding certain legal proceedings in which the company is involved.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Market Information

The company's common stock is listed on the NYSE (trading symbol: “ARW”).

Record Holders

On February 2, 2023, there were approximately 1,282 shareholders of record of the company's common stock.

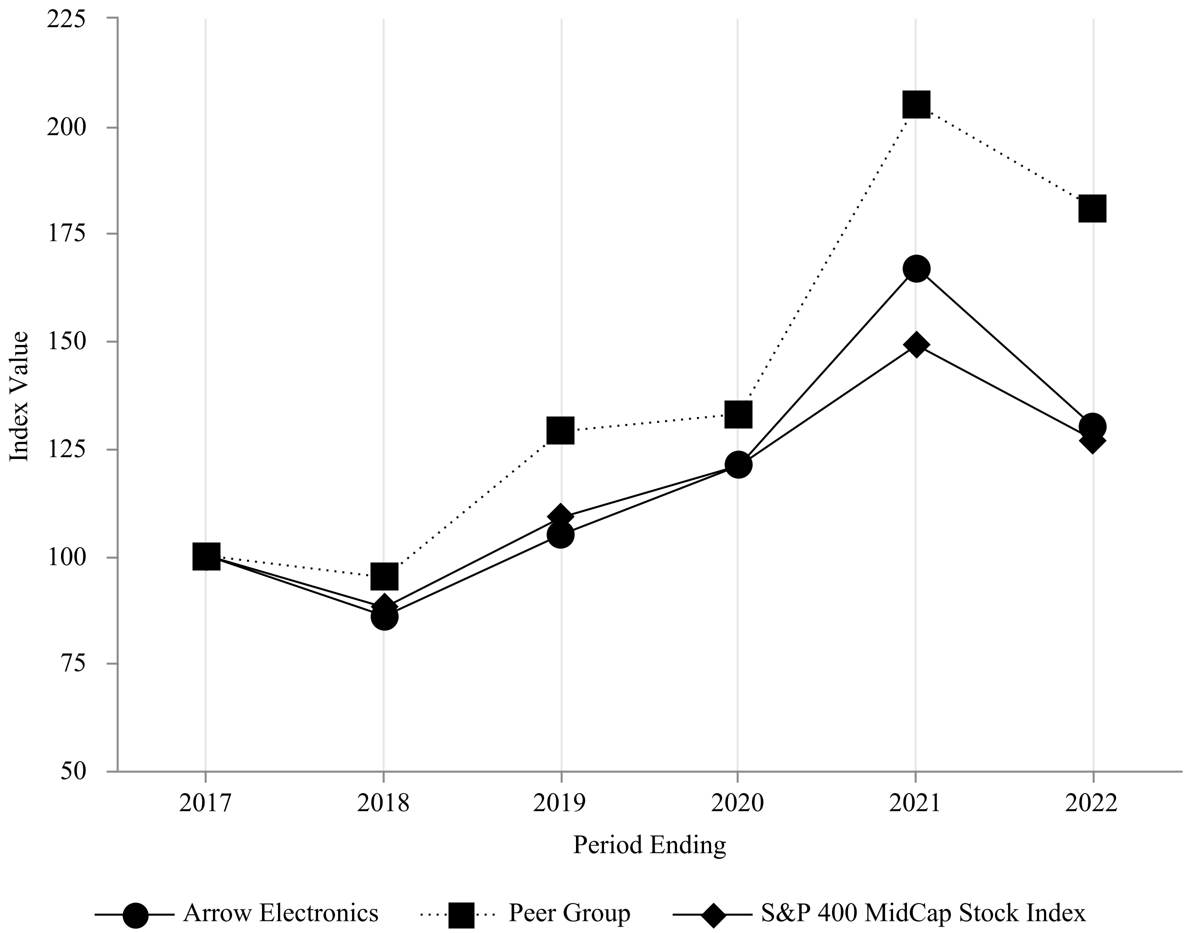
Equity Compensation Plan Information

The following table summarizes information, as of December 31, 2022, relating to the Omnibus Incentive Plan, which was approved by the company's shareholders and under which cash-based awards, non-qualified stock options, incentive stock options, stock appreciation rights, restricted stock, restricted stock units, performance shares, performance share units, covered employee annual incentive awards, and other stock-based awards may be granted.

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance
Equity compensation plans approved by security holders	1,757,856	$ 88.66	5,632,472
Total	1,757,856	$ 88.66	5,632,472

Performance Graph

The following graph compares the performance of the company's common stock for the periods indicated with the performance of the Standard & Poor's MidCap 400 Index ("S&P 400 MidCap Stock Index") and the average performance of a group consisting of the company's peer companies ("Peer Group") on a line-of-business basis. During 2022, the companies included in the Peer Group are Avnet, Inc., CDW Corp., Celestica Inc., Flex Ltd., HP Enterprise Co., HP Inc., Jabil Inc., TD Synnex, and WESCO International, Inc. The graph assumes $100 invested on December 31, 2017 in the company, the S&P 400 MidCap Stock Index, and the Peer Group. Total return indices reflect reinvestment of dividends and are weighted on the basis of market capitalization at the time of each reported data point.



	2017	2018	2019	2020	2021	2022
Arrow Electronics	100	86	105	121	167	130
Peer Group	100	95	129	133	205	181
S&P 400 MidCap Stock Index	100	88	109	121	149	127

Issuer Purchases of Equity Securities

The following table shows the share-repurchase activity for the quarter ended December 31, 2022:

(thousands except share and per share data)	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Approximate Dollar Value of Shares that May Yet be Purchased Under the Program (a)
October 2 through October 29, 2022	621,824	$ 96.72	621,824	$ 568,838
October 30 through November 26, 2022	1,066,980	107.87	1,066,980	453,745
November 27 through December 31, 2022	1,180,668	105.87	1,180,668	328,745
Total	2,869,472		2,869,472	

(a) During 2021, the company was authorized to purchase up to $1.2 billion of its common stock under the share-repurchase program. On September 14, 2022, the company's Board of Directors approved an additional share-repurchase program of $600.0 million. As of December 31, 2022, the total authorized dollar value of shares available for repurchase was $2.4 billion of which $2.1 billion has been utilized, while the $328.7 million in the table represents the remaining amount available for repurchase under the program. On January 31, 2023, the company's Board of Directors approved a $1.0 billion increase to the company's share-repurchase program. The company's share-repurchase programs do not have expiration dates.

Item 6. [Reserved].

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

This section of the Form 10-K generally discusses 2022 and 2021 items and year-to-year comparisons between 2022 and 2021. Discussions of 2020 items and year-to-year comparisons between 2021 and 2020 that are not included in this Form 10-K can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021.

Information Relating to Forward-Looking Statements

This report includes "forward-looking statements," as the term is defined under the federal securities laws. Forward-looking statements are those statements which are not statements of historical fact. These forward-looking statements can be identified by forward-looking words such as "expects," "anticipates," "intends," "plans," "may," "will," "believes," "seeks," "estimates," and similar expressions. These forward-looking statements are subject to numerous assumptions, risks, and uncertainties, which could cause actual results or facts to differ materially from such statements for a variety of reasons, including, but not limited to: unfavorable economic conditions; disruptions or inefficiencies in the supply chain, including any potential adverse effects of the ongoing global COVID-19 pandemic; political instability; impacts of military conflict, including the conflict in Ukraine; industry conditions; changes in product supply, pricing and customer demand; competition; other vagaries in the global components and the global enterprise computing solutions ("ECS") markets; deteriorating economic conditions, including economic recession, inflation, tax rates, foreign currency exchange rates, or the availability of capital; the effects of natural or man-made catastrophic events; changes in relationships with key suppliers; increased profit margin pressure; changes in legal and regulatory matters; non-compliance with certain regulations, such as export, antitrust, and anti-corruption laws; foreign tax and other loss contingencies; and the company's ability to generate cash flow. For a further discussion of these and other factors that could cause the company's future results to differ materially from any forward-looking statements, see the section entitled "Risk Factors" in this Annual Report on Form 10-K, as well as in other filings the company makes with the Securities and Exchange Commission. Shareholders and other readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date on which they are made. The company undertakes no obligation to update publicly or revise any of the forward-looking statements.

Certain Non-GAAP Financial Information

In addition to disclosing financial results that are determined in accordance with accounting principles generally accepted in the United States ("GAAP"), the company also discloses certain non-GAAP financial information, including:

- Non-GAAP sales and non-GAAP gross profit (referred to as "sales on a constant currency basis" and "gross profit on a constant currency basis") excludes the impact of changes in foreign currencies by re-translating prior period results at current period foreign exchange rates.
- Non-GAAP operating expenses excludes restructuring, integration, and other charges, identifiable intangible asset amortization and the impact of changes in foreign currencies.
- Non-GAAP operating income excludes identifiable intangible asset amortization, and restructuring, integration, and other charges.
- Non-GAAP effective tax rate and non-GAAP net income attributable to shareholders exclude identifiable intangible asset amortization, restructuring, integration, and other charges, pension settlement loss, and net gains and losses on investments.

Management believes that providing this additional information is useful to the reader to better assess and understand the company's operating performance and future prospects in the same manner as management, especially when comparing results with previous periods. Management typically monitors the business as adjusted for these items, in addition to GAAP results, to understand and compare operating results across accounting periods, for internal budgeting purposes, for short-term and long-term operating plans, and to evaluate the company's financial performance. However, analysis of results on a non-GAAP basis should be used as a complement to, and in conjunction with, data presented in accordance with GAAP. Reconciliations of non-GAAP financial measures to the most directly comparable reported GAAP financial measures are included within this MD&A.

Overview

The company is a global provider of products, services, and solutions to industrial and commercial users of electronic components and enterprise computing solutions. The company has one of the world's broadest portfolios of product offerings available from leading electronic components and enterprise computing solutions suppliers, coupled with a range of services, solutions and tools that help industrial and commercial customers introduce innovative products, reduce their time to market, and enhance their overall competitiveness. The company has two business segments, the global components business segment and the global enterprise computing solutions ("ECS") business segment. The company's global components business segment markets and distributes electronic components enabled by a comprehensive range of value-added capabilities and services. The company's global ECS business segment is a leading value-added provider of comprehensive computing solutions and services. Global ECS' portfolio of computing solutions includes datacenter, cloud, security, and analytics solutions. Global ECS brings broad market access, extensive supplier relationships, scale, and resources to help its value-added resellers ("VARs") and managed service providers ("MSPs") meet the needs of their end-users. The company distributes electronic components to original equipment manufacturers ("OEMs") and contract manufacturers ("CMs") through its global components business segment and provides enterprise computing solutions to VARs and MSPs through its global ECS business segment. For 2022, approximately 78% and 22% of the company's sales were from the global components business and the global ECS business, respectively.

The company's strategic initiatives include the following:

- Offering a variety of value-added demand creation services in the global components business, including design, engineering, global marketing and integration services to promote the future sale of suppliers' products, which generally lead to longer and more profitable relationships with its suppliers and customers.
- Continuing to develop global supply chain service offerings such as procurement, logistics, warehousing, and insights from data analytics.
- Enabling customer cloud solutions through the global ECS business' cloud marketplace and management platform, ArrowSphere, which helps VARs and MSPs to manage, differentiate, and scale their cloud businesses while providing the business intelligence that IT solution providers need to drive growth.

The company's financial objectives are to grow sales faster than the market, increase the markets served, grow profits faster than sales, generate earnings per share growth in excess of competitors' earnings per share growth and market expectations, grow earnings per share at a rate that provides the capital necessary to support the company's business strategy, allocate and deploy capital effectively so that return on invested capital exceeds the company's cost of capital, and increase return on invested capital. To achieve its objectives, the company seeks to capture significant opportunities to grow across products, markets, and geographies. To supplement its organic growth strategy, the company continually evaluates strategic acquisitions to broaden its product and value-added service offerings, increase its market penetration, and expand its geographic reach.

Executive Summary

Consolidated sales for 2022 increased by 7.7% compared with the year-earlier period. The increase for 2022 was driven by a 9.2% increase in the global components business segment sales and a 2.7% increase in global ECS business segment sales. Consolidated sales on a constant currency basis increased 11.5% in 2022 compared with the year-earlier period.

The company reported net income attributable to shareholders of $1.4 billion in 2022 compared with a net income of $1.1 billion in the year-earlier period. Non-GAAP net income attributable to shareholders for 2022 was $1.5 billion compared with $1.1 billion in the year-earlier period. Non-GAAP net income attributable to shareholders is adjusted for the following items:

- restructuring, integration, and other charges of $13.7 million in 2022 and $15.4 million in 2021;
- identifiable intangible asset amortization of $34.7 million in 2022 and $36.9 million in 2021;
- net gain (loss) on investments of $(2.9) million in 2022 and $13.0 million in 2021.

During 2022, changes in foreign currencies reduced growth by approximately $1.2 billion on sales, $58.8 million on operating income and $0.53 on earnings per share on a diluted basis compared to the year-earlier period.

Significant trends impacting the business:

Below is a discussion of significant trends impacting the business. See discussion regarding the impacts of these and other risks included in Item 1A, Risk Factors within this Form 10-K.

Supply chain constraints and components shortages

Supply chain constraints are being caused by shortages in electronics components markets and supply chain logistical issues resulting in extended lead times and unpredictability, which has impacted the company's global operations. Despite these challenges, the company believes it has efficiently managed the global supply chain requirements of customers and suppliers to date.

The global components business has benefited from rising demand and higher prices for certain products leading to higher sales revenues and improved profit margins globally. Accordingly, current results and financial condition discussed herein may not be indicative of future operating results and trends. See further discussion below under the caption "Gross Profit".

Management is actively monitoring the impact of changes in supply and demand, as well as supply chain logistical issues, on its financial condition, liquidity, operations, suppliers, customer, industry, and workforce. Prices remained elevated during 2022 as supply constraints continued. Gross profit margins in the global components business expanded in 2022, relative to the year-earlier period. In addition, while prices remain elevated, the company has experienced improved supply in certain products, causing higher levels of inventory on the company's consolidated balance sheet, which increased by $1.1 billion as of December 31, 2022, relative to December 31, 2021. The extent to which these issues will continue to impact the company's results will depend primarily on future developments, including the severity and duration of the current conditions, and the impact of actions taken and that will be taken to address supply chain constraints and continued customer demand, among others. These future developments are highly uncertain and cannot be predicted with confidence.

Impacts of changing foreign currency exchange rates

As a large global organization, the company's consolidated results of operations and financial position are impacted by changes in foreign currency exchange rates through the translation of the company's international financial statements into U.S. dollars. The company's non-U.S. dollar results of operations are negatively impacted during periods when the U.S. dollar strengthens and positively impacted during periods when the U.S. dollar weakens. During 2022, the U.S. dollar strengthened substantially against most other currencies, and as a result, during 2022, changes in foreign currencies reduced earnings per share growth by $0.53 on a diluted basis compared to the year-earlier period. During 2022, the impact of changes in foreign currencies related mainly to the Euro. These exposures may change over time and changes in foreign currency exchange rates could materially impact the company's financial results in the future.

COVID-19 Pandemic Update

As the ongoing COVID-19 pandemic has evolved, the company continues to monitor and evaluate the impact on its business operations on a regional, national and global basis. The COVID-19 pandemic continues to create macroeconomic uncertainty, volatility and disruption, including supply constraints, extended lead times, and unpredictability across many markets.

During 2022, certain of its distribution centers and customers' facilities located in the Asia/Pacific region experienced COVID-19 related lockdowns. As a result, the global components business in the Asia/Pacific region experienced some delays in fulfilling orders, receiving inventory and exacerbated supply chain constraints. Similar disruptions could occur in the future.

Sales

Substantially all of the company's sales are made on an order-by-order basis, rather than through long-term sales contracts. As such, the nature of the company's business does not provide for the visibility of material forward-looking information from its customers and suppliers beyond a few months.

Following is an analysis of net sales by reportable segment for the years ended December 31:

(millions)	**2022**	**2021**	**Change**
Consolidated sales, as reported	$ 37,124	$ 34,477	7.7 %
Impact of changes in foreign currencies	—	(1,178)	
Consolidated sales, constant currency	$ 37,124	$ 33,299	11.5 %
Global components sales, as reported	$ 28,788	$ 26,358	9.2 %
Impact of changes in foreign currencies	—	(812)	
Global components sales, constant currency	$ 28,788	$ 25,546	12.7 %
Global ECS sales, as reported	$ 8,336	$ 8,120	2.7 %
Impact of changes in foreign currencies	—	(366)	
Global ECS sales, constant currency	$ 8,336	$ 7,753	7.5 %

The sum of the components for sales, as reported, and on a constant currency basis may not agree to totals, as presented, due to rounding.

Consolidated sales in 2022 increased by 7.7% due to an increase in global components business segment sales of $2.4 billion, or 9.2%, and an increase in global ECS business segment sales of $216.9 million, or 2.7%, compared with the year-earlier period. Consolidated sales on a constant currency basis in 2022 increased by 11.5%.

Global components sales growth in 2022, compared to the year-earlier period was primarily due to a mix of stronger demand and improved supply, driving greater than 20% sales growth in both the Americas and EMEA regions, with increases in most major verticals. Sales growth was partially offset by a 6% decrease in Asia/Pacific sales due to slowing market conditions and the impact of changes in foreign exchange rates primarily in the EMEA region.

Sales from the global ECS business benefited from a healthy IT demand environment in 2022 relative to the year-earlier period. The EMEA region saw strength across the region in all technologies; however, sales were reduced by changes in foreign exchange rates. Sales in the Americas region declined slightly due to a decline in storage and networking partially offset by growth in software applications, compute, and data intelligence.

Gross Profit

Following is an analysis of gross profit for the years ended December 31:

(millions)	2022	2021	Change
Consolidated gross profit, as reported	$ 4,837	$ 4,202	15.1 %
Impact of changes in foreign currencies	—	(161)	
Consolidated gross profit, constant currency	$ 4,837	$ 4,041	19.7 %
Consolidated gross profit as a percentage of sales, as reported	13.0 %	12.2 %	80 bps
Consolidated gross profit as a percentage of sales, constant currency	13.0 %	12.1 %	90 bps

The sum of the components for gross profit on a constant currency basis may not agree to totals, as presented, due to rounding.

The increase in gross profit margins during 2022 related primarily to improvements in margins in the Asia/Pacific and Americas regions of the global components business, due to product mix shifting towards higher margin products, and increased prices and other global supply chain impacts discussed above. Margins in the EMEA region somewhat softened due to product mix shifting towards lower margin products. Global supply chain services offerings continued to have a positive impact on gross margins. Gross profit margins from the global ECS business also increased compared to the year-earlier period primarily due to strong growth in demand in the EMEA region as well as beneficial product mix, partially offset by the impact of changes in foreign currency.

During 2022, the company experienced benefits to gross margins in the global components business due to the factors discussed above related to supply chain shortages, which may not be representative of future trends or conditions. As such, the current gross margins may not be sustainable. During the fourth quarter of 2022, the company's gross margins declined 40 basis points compared to the fourth quarter of 2021, driven mostly by the normalization of shortage market conditions within our global components business. This normalization began during the third quarter of 2022. The company's gross margins improved 10 basis points in the fourth quarter of 2022 compared to the third quarter of 2022, due to favorable product mix in the global ECS business.

Operating Expenses

Following is an analysis of operating expenses for the years ended December 31:

(millions)	2022	2021	Change
Operating expenses, as reported	$ 2,768	$ 2,646	4.6 %
Identifiable intangible asset amortization	(35)	(37)	
Restructuring, integration, and other charges	(14)	(15)	
Impact of changes in foreign currencies	—	(101)	
Non-GAAP operating expenses	$ 2,720	$ 2,492	9.1%
Operating expenses as a percentage of sales	7.5 %	7.7 %	(20) bps
Non-GAAP operating expenses as a percentage of non-GAAP sales	7.3 %	7.5 %	(20) bps

The sum of the components for non-GAAP operating expenses may not agree to totals, as presented, due to rounding.

The decrease in operating expense as a percentage of sales in 2022 relates primarily to operating leverage the company generates when sales are growing. The decreases were also related to certain investments to grow the company's sales during the third quarter of 2021, partially offset by $12.5 million in settlement funds received in 2021 in connection with certain class action claims (Refer to Note 14), which were recorded as a reduction of selling, general, and administrative expenses.

Restructuring initiatives and integration costs are due to the company's continued efforts to lower costs, drive operational efficiency, integrate acquired businesses, and the consolidation of certain operations, as necessary. The company recorded restructuring, integration, and other charges of $13.7 million and $15.4 million for 2022 and 2021, respectively. The other charges include $4.5 million in impairment charge related to various long lived assets recorded in 2021. As of December 31, 2022, the company does not anticipate there will be any material adjustments relating to the aforementioned restructuring and integration plans. Refer to Note 8, "Restructuring, Integration, and Other Charges" of the Notes to the Consolidated Financial Statements for further discussion of the company's restructuring and integration activities.

Operating Income

Following is an analysis of operating income for the years ended December 31:

(millions)	2022	2021	Change
Consolidated operating income, as reported	$ 2,068	$ 1,557	32.9 %
Identifiable intangible asset amortization	35	37	
Restructuring, integration, and other charges	14	15	
Non-GAAP consolidated operating income	$ 2,117	$ 1,609	31.6 %
Consolidated operating income as a percentage of sales, as reported	5.6 %	4.5 %	110 bps
Non-GAAP consolidated operating income, as a percentage of sales	5.7 %	4.7 %	100 bps

The sum of the components for non-GAAP consolidated operating income may not agree to totals, as presented, due to rounding.

The increase in operating income as a percentage of sales in 2022 relates primarily to increases in gross profit margins and operating leverage the company generates when sales are growing, in addition to the other factors discussed above. During 2022, changes in foreign currencies reduced operating income growth by $58.8 million when compared to the year-earlier period.

Gain (Loss) on Investments, Net

During 2022 and 2021, the company recorded a gain (loss) of $(2.9) million and $13.0 million respectively, which are primarily related to changes in fair value of assets related to the Arrow SERP pension plan, which consist primarily of life insurance policies and mutual fund assets.

Interest and Other Financing Expense, Net

The company recorded net interest and other financing expense of $185.6 million for 2022, compared with $131.7 million in the year-earlier period. The increase in 2022 primarily relates to higher interest rates on credit facilities and higher borrowings.

Income Tax

The company records a provision for income taxes for the anticipated tax consequences of the reported financial results of operations using the asset and liability method. The following table presents the company's effective income tax rate deviation from the non-GAAP effective tax rate for the years ended December 31:

	2022	2021
Effective income tax rate	23.8 %	22.7 %
Identifiable intangible asset amortization	0.1 %	0.1 %
Non-GAAP effective income tax rate	23.8 %	22.7 %

The sum of the components for non-GAAP effective income tax rate may not agree to totals, as presented, due to rounding.

The change in the effective tax rate to 23.8% for 2022 from 22.7% for 2021 was primarily driven by the mix of income in jurisdictions with higher tax.

Net Income Attributable to Shareholders

Following is an analysis of net income attributable to shareholders for the years ended December 31:

(millions)	2022	2021
Net income attributable to shareholders, as reported	$ 1,427	$ 1,108
Identifiable intangible asset amortization*	34	36
Restructuring, integration, and other charges	14	15
(Gain) loss on investments, net	3	(13)
Tax effect of adjustments above	(13)	(10)
Non-GAAP net income attributable to shareholders	$ 1,465	$ 1,137

* Identifiable intangible asset amortization also excludes amortization related to the noncontrolling interest.

The sum of the components for non-GAAP net income attributable to shareholders may not agree to totals, as presented, due to rounding.

The increase in net income attributable to shareholders in 2022 relates primarily to increased sales and other factors discussed above. During 2022, changes in foreign currencies reduced net income growth by approximately $38.9 million when compared to the year-earlier period.

Liquidity and Capital Resources

Management believes that the company’s current cash availability, its current borrowing capacity under its revolving credit facility and asset securitization programs, and its expected ability to generate future operating cash flows are sufficient to meet its projected cash flow needs for the next 12 months and the foreseeable future. The company's current committed and undrawn liquidity stands at over $2.1 billion in addition to $176.9 million of cash on hand at December 31, 2022. The company also may issue debt or equity securities in the future and management believes the company will have adequate access to the capital markets, if needed. The company continually evaluates its liquidity requirements and would seek to amend its existing borrowing capacity or access the financial markets as deemed necessary.

The company’s principal sources of liquidity are existing cash and cash equivalents, cash generated from operations and cash provided by its revolving credit facilities and debt. The company's principal uses of liquidity include cash used in operations, investments to grow working capital, scheduled interest and principal payments on its borrowings, and the return of cash to shareholders through share repurchases.

The following table presents selected financial information related to liquidity at December 31:

(millions)	2022	2021	Change
Working capital	$ 7,182	$ 5,709	$ 1,473
Cash and cash equivalents	177	222	(45)
Short-term debt	590	383	207
Long-term debt	3,183	2,244	939

Working Capital

The company maintains a significant investment in working capital which the company defines as accounts receivable, net, plus inventories less accounts payable. The change in working capital during 2022, compared to the year-earlier period was primarily attributable to higher sales and increases in inventories. The company continues to invest in inventories to help mitigate the impact of supply shortages and support growth. Inflationary pressures along with improved supply, have contributed to higher inventory levels on the company’s consolidated balance sheet, which increased by $1.1 billion as of December 31, 2022, relative to December 31, 2021.

Working capital, as a percentage of sales, which is defined as working capital divided by annualized quarterly sales, increased to 19.3% at December 31, 2022 compared to 15.8% at December 31, 2021. The increase was primarily due to higher inventory related to the factors discussed above. Sales for the fourth quarter of 2022 and 2021 were $9.3 billion and $9.0 billion, respectively.

Cash and Cash Equivalents

Cash equivalents consist of highly liquid investments, which are readily convertible into cash, with original maturities of three months or less. At December 31, 2022 and 2021, the company had cash and cash equivalents of $176.9 million and $222.2 million, respectively, of which $160.8 million and $211.6 million, respectively, were held outside the United States. Liquidity is affected by many factors, some of which are based on normal ongoing operations of the company's business and some of which arise from fluctuations related to global economics and markets.

The company has $3.3 billion of undistributed earnings of its foreign subsidiaries which it deems indefinitely reinvested, and recognizes that it may be subject to additional foreign taxes and U.S. state income taxes, if it reverses its indefinite reinvestment assertion on these foreign earnings. The company has $2.1 billion of foreign earnings that are not deemed permanently reinvested and are available for distribution in future periods as of December 31, 2022.

Revolving Credit Facilities and Debt

The following table summarizes the company’s credit facilities by category at December 31:

(millions)	Borrowing capacity	Outstanding borrowings		Average daily balance outstanding	
		2022	2021	2022	2021
North American asset securitization program	$ 1,500	$ 1,235	$ —	$ 1,004	$ 516
Revolving credit facility	2,000	—	—	182	10
Commercial paper program (a)	1,200	173	—	498	316
Uncommitted lines of credit	200	78	—	7	—

(a) Amounts outstanding under the commercial paper program are backstopped by available commitments under the company’s revolving credit facility.

The company also has an EMEA asset securitization program under which it continuously sells its interest in designated pools of trade accounts receivables of certain of its subsidiaries in the EMEA region. Receivables sold under the program are excluded from “Accounts receivable, net” and no corresponding liability is recorded on the company’s consolidated balance sheets. During 2022 and 2021, the average daily balance outstanding under the EMEA asset securitization program was $472.7 million and $458.5 million, respectively. Refer to Note 4 “Accounts Receivables” of the Notes to the Consolidated Financial Statements for further discussion.

The following table summarizes recent events impacting the company's capital resources:

(millions)	Activity	Date	Notional amount
3.50% notes, due April 2022	Repaid	February 2022	$ 350
2.95% notes, due February 2032	Issued	December 2021	$ 500
5.125% notes, due March 2021	Repaid	March 2021	$ 131
North American asset securitization program	Increase in Capacity	September 2022	$ 250
EMEA asset securitization program	Increase in Capacity	September 2022	€ 200

Refer to Note 5, “Debt” of the Notes to the Consolidated Financial Statements for further discussion of the company's short-term and long-term debt and available financing.

Cash Flows

The following table summarizes the company’s cash flows by category for the periods presented:

(millions)	2022	2021	Change
Net cash provided by (used for) operating activities	$ (33)	$ 419	$ (452)
Net cash used for investing activities	(58)	(60)	2
Net cash provided by (used for) financing activities	110	(463)	573

Cash Flows from Operating Activities

The net amount of cash used for the company's operating activities during 2022 was $33.1 million and the net amount of cash provided by the company's operating activities during 2021 was $419.0 million. The change in cash used for operating activities during 2022, compared to the year-earlier period, related primarily to increases in inventories and the timing of payments received from customers, offset partially by increased sales and net income and the initial sales of accounts receivables under the increased capacity of the EMEA asset securitization program (see Note 4), which increased operating cash flows by approximately $175.6 million in 2022.

Cash Flows from Investing Activities

The net amount of cash used for investing activities during 2022 and 2021 was $57.7 million and $60.1 million, respectively. The change in cash used for investing activities related primarily to proceeds from the sale of property plant and equipment during 2021, offset largely by proceeds from collection of notes receivable during 2022.

Cash Flows from Financing Activities

The net amount of cash provided by financing activities during 2022 was $109.8 million and the net amount of cash used for the company's financing activities during 2021 was $463.3 million. The change in cash provided by financing activities related primarily to a $1.0 billion overall increase in borrowings during 2022 relative to 2021. The increases were partially offset by increased share repurchases and redemption of notes outstanding.

Capital Expenditures

Capital expenditures were $78.8 million and $83.1 million in 2022 and 2021, respectively. The company expects capital expenditures to be approximately $80.0 million for fiscal year 2023.

Share-Repurchase Program

The company repurchased 9.3 million shares of common stock for $1.0 billion and 7.7 million shares of common stock for $900.0 million in 2022 and 2021, respectively. On September 14, 2022, the company's Board of Directors approved a $600.0 million increase to the company's share-repurchase program. As of December 31, 2022, approximately $328.7 million remained available for repurchase. On January 31, 2023, the company's Board of Directors approved a $1.0 billion increase to the company's share-repurchase program. The stock-repurchase authorization does not have an expiration date and the pace of the repurchase activity will depend on factors such as the company’s working capital needs, cash requirements for acquisitions, debt repayment obligations or repurchases of debt, stock price, and economic and market conditions. The stock-repurchase program may be accelerated, suspended, delayed or discontinued at any time subject to the approval by the company’s Board of Directors.

Contractual Obligations

The company has contractual obligations for short-term and long-term debt, interest on short-term and long-term debt, purchase obligations, and operating leases.

- At December 31, 2022, the company had $3.8 billion of total debt outstanding, $589.9 million of which matures in the next twelve months. The remaining debt has maturity dates in 2024 through 2032. During February 2022, the company repaid $350.0 million principal amount of its 3.50% notes due April 2022. Refer to Note 5.
- Amounts related to total interest on long-term debt at December 31, 2022 totaled $346.9 million, with $84.4 million expected to be paid within the next 12 months. Refer to Note 5.
- Purchase obligations of $13.4 billion represent an estimate of non-cancellable inventory purchase orders and other contractual obligations related to information technology and facilities as of December 31, 2022 with $11.0 billion expected to be paid within the next 12 months and $2.0 billion in 2024.
- Non-cancellable inventory purchase orders were in line with the year-earlier period, and remain elevated above historic levels, primarily due to significant increases in prices and lead times for orders during both 2021 and 2022. Additionally, many vendors continue to limit cancellations, although many of the company's non-cancellable purchase orders are backed by customer purchase orders with Arrow, that are also non-cancellable. Some of the inventory purchases above relate to sales where the company assumes an agency relationship in the transaction. Refer to discussion of the company's revenue recognition policy in Note 1.
- Amounts related to future lease payments for operating lease obligations at December 31, 2022 totaled $348.5 million, with $80.3 million expected to be paid within the next 12 months. Refer to Note 13.

Additional Capital Requirements and Sources

Recent and expected other capital requirements and sources, in addition to the above matters, also include the items described below:

- Employee Benefit Plans: The company maintains an unfunded executive pension plan under which the company will pay supplemental pension benefits to certain employees upon retirement. As of December 31, 2022, the company had designated $108.6 million in assets to cover the ongoing costs of SERP payouts for both current and former executives. The projected benefit obligation at December 31, 2022 and 2021, was $84.1 million and $105.5 million, respectively. Refer to Note 12.
- Environmental liabilities: The company is involved in certain ongoing environmental cleanup activities and legal proceedings, which are inherently uncertain with respect to outcomes, estimates and assumptions that it makes as of each reporting period, are inherently unpredictable. Refer to Note 14.
- Hedging activities: The company has entered into certain forward-starting interest rate swaps derivatives which are designated hedges of future debt issuances as well as certain foreign exchange forward contracts designated as net investment hedges. As of December 31, 2022 and 2021, all such contracts were in an asset position in the amount of $116.9 million and $62.4 million, respectively. Refer to Note 6.
- Sales of trade receivables: In the normal course of business, certain of the company’s subsidiaries have agreements to sell, without recourse, selected trade receivables to financial institutions. The company does not retain financial or legal interests in these receivables, and, accordingly, they are accounted for as sales of the related receivables and the receivables are removed from the company’s consolidated balance sheets.

Critical Accounting Estimates

The company's consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States. The preparation of these consolidated financial statements requires the company to make significant estimates and judgments that affect the reported amounts of assets, liabilities, revenues, and expenses and related disclosure of contingent assets and liabilities. The company evaluates its estimates on an ongoing basis. The company bases its estimates on historical experience and on various other assumptions that are believed reasonable under the circumstances; the results of which 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 under different assumptions or conditions.

The company believes the following critical accounting policies involve the more significant judgments and estimates used in the preparation of its consolidated financial statements:

Revenue Recognition

The company recognizes revenue as control of products is transferred to customers, which generally happens at the point of shipment. Sales are recorded net of discounts, rebates, and returns, which historically have not been material. The company allows its customers to return product for exchange or credit in limited circumstances. A liability is recorded at the time of sale for estimated product returns based upon historical experience. The company also provides volume rebates and other discounts to certain customers which are considered a variable consideration. A provision for customer rebates and other discounts is recorded as a reduction of revenue at the time of sale based on an evaluation of the contract terms and historical experience. Tariffs are included in sales as the company has enforceable rights to additional consideration to cover the cost of tariffs. Other taxes imposed by governmental authorities on the company's revenue producing activities with customers, such as sales taxes and value-added taxes, are excluded from net sales.

Products sold by the company are generally delivered via shipment from the company's facilities, drop shipment directly from the vendor, or by electronic delivery of keys for software products. A portion of the company's business involves shipments directly from its suppliers to its customers, in these transactions, the company is generally responsible for negotiating price both with the supplier and customer, payment to the supplier, establishing payment terms with the customer, product returns, and has risk of loss if the customer does not make payment. As the principal with the customer, the company recognizes revenue upon receiving notification from the supplier that the product was shipped.

The company has contracts with certain customers where the company's performance obligation is to arrange for the products or services to be provided by another party. In these arrangements, as the company assumes an agency relationship in the transaction, revenue is recognized in the amount of the net fee associated with serving as an agent. These arrangements relate to the sale of supplier service contracts to customers where the company has no future obligation to perform under these contracts or the rendering of logistic services for the delivery of inventory for which the company does not assume the risks and rewards of ownership.

No single customer accounted for more than 2% of the company's 2022 consolidated sales. One supplier accounted for approximately 13% of the company's consolidated sales in 2022. No other single supplier accounted for more than 7% of the company's consolidated sales in 2022. The company believes that many of the products it sells are available from other sources at competitive prices. However, certain parts of the company's business, such as the company's global ECS business segment, rely on a limited number of suppliers with the strategy of providing focused support, extensive product knowledge, and customized service to suppliers, MSPs, and VARs. Most of the company's purchases are pursuant to distributor agreements, which are typically non-exclusive and cancellable by either party at any time or on short notice.

Trade Accounts and Notes Receivable

Trade accounts and notes receivable are reported at amortized cost, net of the allowance for credit losses in the consolidated balance sheets. The allowance for credit losses is a valuation account that is deducted from the receivables' amortized cost basis to present the net amount expected to be collected. Receivables are written off against the allowance when management believes the receivable balance is confirmed to be uncollectible. Refer to Notes 1 and 4.

Management estimates the allowance for credit losses using relevant available information about expected credit losses and an age-based reserve model. Inputs to the model include information about historical credit losses, customer credit ratings, past events, current conditions, and reasonable and supportable forecasts. Adjustments to historical loss information are made for differences in current receivable-specific risk characteristics such as changes in the economic and industry environment, or other relevant factors.

Expected credit losses are estimated on a collective (pool) basis, when similar risk characteristics exist, based on customer credit ratings, which include both externally acquired as well as internally determined credit ratings. Receivables that do not share risk characteristics are evaluated on an individual basis.

Inventories

Inventories are stated at the lower of cost or net realizable value. Write-downs of inventories to market value are based upon contractual provisions governing price protection, stock rotation rights, and obsolescence, as well as assumptions about future demand and market conditions. If assumptions about future demand change and/or actual market conditions are less favorable than those projected by the company, additional write-downs of inventories may be required. Due to the large number of transactions and the complexity of managing the process around price protections and stock rotations, estimates are made regarding adjustments to the book cost of inventories. Actual amounts could be different from those estimated.

Income Taxes

Income taxes are accounted for under the liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of differences between the tax bases of assets and liabilities and their financial reporting amounts using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

The carrying value of the company's deferred tax assets is dependent upon the company's ability to generate sufficient future taxable income in certain tax jurisdictions. Should the company determine that it is more likely than not that some portion or all of its deferred tax assets will not be realized, a valuation allowance to reduce the deferred tax assets is established in the period such determination is made. The assessment of the need for a valuation allowance requires considerable judgment on the part of management with respect to the benefits that could be realized from future taxable income, as well as other positive and negative factors.

It is also the company's policy to provide for uncertain tax positions and the related interest and penalties based upon management's assessment of whether a tax benefit is more likely than not to be sustained upon examination by tax authorities. To the extent the company prevails in matters for which a liability for an unrecognized tax benefit is established, or is required to pay amounts in excess of the liability, or when other facts and circumstances change, the company's effective tax rate in a given financial statement period may be materially affected.

Contingencies and Litigation

From time to time, the company is subject to proceedings, lawsuits, and other claims related to environmental, regulatory, labor, product, tax, and other matters and assesses the likelihood of an adverse judgment or outcome for these matters, as well as the range of potential losses. A determination of the reserves required, if any, is made after careful analysis. The reserves may change in the future due to new developments impacting the probability of a loss, the estimate of such loss, and the probability of recovery of such loss from third parties.

Goodwill

Goodwill represents the excess of the cost of an acquisition over the fair value of the net assets acquired. The company tests goodwill for impairment annually as of the first day of the fourth quarter and/or when an event occurs or circumstances change such that it is more likely than not that an impairment may exist. Examples of such events and circumstances that the company would consider include the following:

- macroeconomic conditions such as deterioration in general economic conditions, limitations on accessing capital, fluctuations in foreign exchange rates, or other developments in equity and credit markets;
- industry and market considerations such as a deterioration in the environment in which the company operates, an increased competitive environment, a decline in market-dependent multiples or metrics (considered in both absolute terms and relative to peers), a change in the market for the company's products or services, or a regulatory or political development;
- cost factors such as increases in inventory, labor, or other costs that have a negative effect on earnings and cash flows;
- overall financial performance such as negative or declining cash flows or a decline in actual or planned revenue or earnings compared with actual and projected results of relevant prior periods;
- other relevant entity-specific events such as changes in management, key personnel, strategy, or customers, contemplation of bankruptcy, or litigation;
- events affecting a reporting unit such as a change in the composition or carrying amount of its net assets, a more likely than not expectation of selling or disposing all, or a portion, of a reporting unit, the testing for recoverability of a significant asset group within a reporting unit, or recognition of a goodwill impairment loss in the financial statements of a subsidiary that is a component of a reporting unit; and
- a sustained decrease in share price (considered in both absolute terms and relative to peers).

Goodwill is tested at a level of reporting referred to as "the reporting unit." The company's reporting units are defined as:
- each of the three regional businesses within the global components business segment:
    - Americas Components;
    - Europe, the Middle East, and Africa ("EMEA") Components;
    - Asia/Pacific Components;

- eInfochips, which is part of the global components business segment. and;
- each of the two regional businesses within the global ECS business segment:
    - ECS Americas;
    - ECS EMEA

Within the global components business segment, the Asia/Pacific reporting unit's goodwill was previously fully impaired. An entity has the option to first assess qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not (that is, a likelihood of more than 50%) that the fair value of a reporting unit is less than its carrying amount. If, after assessing the totality of events or circumstances, an entity determines it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, then the quantitative goodwill impairment test is unnecessary. The company elected not to perform the qualitative assessment and performed the quantitative goodwill impairment test. The quantitative goodwill impairment test, used to identify both the existence of impairment and the amount of impairment loss, compares the fair value of a reporting unit with its carrying amount, including goodwill. If the carrying amount of the reporting unit is less than its fair value, no impairment exists. If the carrying amount of a reporting unit exceeds its fair value, an impairment loss shall be recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit.

The company estimates the fair value of a reporting unit using the income approach. For the purposes of the income approach, fair value is determined based on the present value of estimated future cash flows, discounted at an appropriate risk-adjusted rate. The assumptions included in the income approach include forecasted revenues, gross profit margins, operating income margins, working capital cash flow, perpetual growth rates, income tax rates, and long-term discount rates, among others, all of which require significant judgments by management. Actual results may differ from those assumed in the company's forecasts. The company also reconciles its discounted cash flow analysis to its current market capitalization allowing for a reasonable control premium. As of the first day of the fourth quarters of 2022, 2021, and 2020, the company's annual impairment testing did not indicate impairment at any of the company's reporting units.

As of the date of the company's 2022 annual impairment test, the fair value of all reporting units exceeded their carrying values by more than 20%. (See Note 2). Discount rates are one of the more significant assumptions used in the income approach, and given the rise in interest rates during 2022, the company increased its risk-adjusted discount rates for all reporting units. If the company increased the discount rates used by 100 basis points, the fair value of all reporting units would still exceeded their carrying values by more than 10%.

A decline in general economic conditions or global equity valuations could impact the judgments and assumptions about the fair value of the company's businesses, and the company could be required to record an impairment charge in the future, which could impact the company's consolidated balance sheets, as well as the company's consolidated statements of operations. If the company was required to recognize an impairment charge in the future, the charge would not impact the company's consolidated cash flows, current liquidity, capital resources, and covenants under its existing revolving credit facility, North American asset securitization program, other outstanding borrowings, and EMEA asset securitization program.

As of December 31, 2022, the company has $2.0 billion of goodwill, of which approximately $569.0 million and $107.0 million was allocated to the Americas and EMEA reporting units within the global components business segment, respectively, $782.2 million and $372.4 million was allocated to the North America and EMEA reporting units within the global ECS business segment, respectively, and $197.0 million was allocated to the eInfochips reporting unit.

Impact of Recently Issued Accounting Standards

In September 2022, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2022-04, *Liabilities—Supplier Finance Programs (Subtopic 405-50) Disclosure of Supplier Finance Program Obligations* ("ASU No. 2022-04"). ASU No. 2022-04 requires that a buyer in a supplier finance program disclose sufficient information about the program to allow a user of financial statements to understand the program's nature, activity during the period, and potential magnitude. The amendments in this ASU will be applied retrospectively to each period in which a balance sheet is presented, with the exception of a new requirement to disclose a rollforward of program activity, which will be applied prospectively. The amendments in the ASU are effective for fiscal years beginning after December 15, 2022, with early adoption permitted. The disclosures required by this ASU would be required in the company's consolidated financial statements beginning in the first quarter of 2023. The company is currently evaluating the potential effects of adopting the provisions of ASU No. 2022-04.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

The company is exposed to market risk from changes in foreign currency exchange rates and interest rates.

Foreign Currency Exchange Rate Risk

The company, as a large global organization, faces exposure to adverse movements in foreign currency exchange rates. These exposures may change over time as business practices evolve and could materially impact the company's financial results in the future. The company's primary exposure relates to transactions in which the currency collected from customers is different from the currency utilized to purchase the product sold in Europe, the Asia/Pacific region, Canada, and Latin America. The company's policy is to hedge substantially all such currency exposures for which natural hedges do not exist. Natural hedges exist when purchases and sales within a specific country are both denominated in the same currency and, therefore, no exposure exists to hedge with foreign exchange forward, option, or swap contracts (collectively, the "foreign exchange contracts"). In many regions in Asia, for example, sales and purchases are primarily denominated in U.S. dollars, resulting in a "natural hedge." Natural hedges exist in most countries in which the company operates, although the percentage of natural offsets, as compared with offsets that need to be hedged by foreign exchange contracts, will vary from country to country. The company does not enter into foreign exchange contracts for trading purposes. The risk of loss on a foreign exchange contract is the risk of nonperformance by the counterparties, which the company minimizes by limiting its counterparties to major financial institutions. The fair value of the foreign exchange contracts are estimated using foreign currency spot rates and forward rates quoted by third party financial institutions. The notional amount of the foreign exchange contracts inclusive of foreign exchange contracts designated as a net investment hedge at December 31, 2022 and 2021, was $1.3 billion and $1.1 billion, respectively.

As a large global organization, the company's consolidated results of operations and financial position are impacted by changes in foreign currency exchange rates through the translation of the company's international financial statements into U.S. dollar. The company's non-U.S. dollar results of operations are negatively impacted during periods when the U.S. dollar strengthens and positively impacted during periods when the U.S. dollar weakens. During 2022, the U.S dollar strengthened substantially against most other currencies. This resulted in decreased growth in sales and operating income of $1.2 billion and $58.8 million, respectively, for 2022, compared with the year-earlier period, based on 2021 sales and operating income re-translated at average foreign currency exchange rates for 2022. These exposures may change over time and changes in foreign currency exchange rates could materially impact the company's financial results in the future. For example, sales and operating income would decrease by approximately $810.0 million and $42.7 million, respectively, if the U.S dollar strengthened by another 10% against the Euro. These amounts were determined by considering the impact of a hypothetical foreign exchange rate on the sales and operating income of the company's international operations.

Interest Rate Risk

The company's interest expense, in part, is sensitive to the general level of interest rates in North America, Europe, and the Asia/Pacific region. The company historically has managed its exposure to interest rate risk through the proportion of fixed-rate and floating-rate debt in its total debt portfolio. Additionally, the company may, at times, utilize interest rate swaps in order to manage its targeted mix of fixed- and floating-rate debt.

At December 31, 2022, 60% of the company's debt was subject to fixed rates and 40% was subject to floating rates. During 2022, the average outstanding balance on the company's floating rate debt was $1.7 billion, and a one percentage point change in average interest rates would have caused net interest and other financing expense during 2022 to increase by $16.9 million. This was determined by considering the impact of a hypothetical interest rate on the company's average outstanding balance of floating rate debt during 2022. This analysis does not consider the effect of the level of overall economic activity that could exist. In the event of a change in the level of economic activity, which may adversely impact interest rates, the company could likely take actions to further mitigate any potential negative exposure to the change. However, due to the uncertainty of the specific actions that might be taken and their possible effects, the sensitivity analysis assumes no changes in the company's financial structure.

As a result of recent regulatory guidance and proposals for reform, the ICE Benchmark Administration Limited, the administrator of LIBOR, ceased publication for the one-week and two-month USD LIBOR settings on December 31, 2021 and is expected to phase out the remaining USD LIBOR settings on July 1, 2023. The Alternative Reference Rate Committee ("ARRC") has proposed that the Secured Overnight Financing Rate ("SOFR") is the rate that represents best practice as the alternative to USD-LIBOR for use in derivatives and other financial contracts that are currently indexed to USD-LIBOR. The company has a revolving credit facility, certain lines of credit, and interest rate swaps that are indexed to USD-LIBOR. At the time LIBOR is discontinued, the interest rates in these contracts will be based on a fallback reference rate specified in the applicable documentation governing such debt or swaps or as otherwise agreed upon. Such an event would not affect the company's ability to borrow or maintain already outstanding borrowings or swaps, but the alternative reference rate could be higher and more volatile than LIBOR. The company continues to monitor developments by the ARRC and the potential impact of LIBOR changes on its business.

Item 8. Financial Statements and Supplementary Data.

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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Arrow Electronics, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Arrow Electronics, Inc. (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income (loss), equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes and financial statement schedule listed in the Index at Item 15(a) (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 9, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

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

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

Critical Audit Matters

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

	Evaluation of net realizable value adjustments to inventories for excess or obsolescence
Description of the Matter	At December 31, 2022, the Company's inventories were $5.3 billion. As discussed in Note 1 to the consolidated financial statements, inventories are stated at the lower of cost or net realizable value. Write-downs of inventories to net realizable value for excess or obsolete inventories are based upon forecasted sales, contractual supplier protection and stock rotation privileges, and the age of inventories. Auditing management's lower of cost or net realizable value determination for excess or obsolete inventories was especially challenging and highly judgmental because of the estimation uncertainty in determining demand for aging inventory and future market conditions, after considering supplier protection provisions. Inventories not supported by forecasted sales orders or stock rotation privileges are written down to lower of cost or net realizable value based on the age of the inventories and inventory turnover.

How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's determination of the lower of cost or net realizable value for excess and obsolete inventories. For example, we tested controls over management's review of excess and obsolete inventories which includes their review of the assumptions supporting current product demand, supplier protections, evaluation of aging of inventories and consideration of inventory turnover. Our audit procedures to test the net realizable value adjustments to inventories for excess or obsolescence included, among others, testing the completeness and accuracy of the underlying data used in management's assessment. We evaluated the reasonableness of management's assumptions by performing a retrospective review of the prior year assumptions to actual activity, including write-off history. We evaluated the appropriateness and consistency of management's methods and assumptions used in developing their estimates around forecasted sales and expected stock rotation privileges. We tested the aging of inventories. We held discussions with senior financial and operating management to determine whether any strategic or operational changes in the business would impact expected demand or related carrying value of inventory. We assessed the reasonableness of management's excess and obsolescence assumptions by comparing those assumptions to historical data and trends, as well as reviewing such assumptions for management bias. We considered macroeconomic trends within the industry, including trends that could impact the movement of the products provided by the Company. We performed procedures to compare recent sales transactions or market data to cost of inventories to assess that the carrying value of inventories was the lower of cost or net realizable value.

Evaluation of Americas Components and eInfochips Goodwill for Impairment

Description of the Matter	At December 31, 2022, the Company's consolidated goodwill was $2.0 billion. As discussed in Note 3 to the consolidated financial statements, goodwill is tested for impairment annually as of the first day of the fourth quarter, or more frequently if indicators of potential impairment exist. As of the first day of the fourth quarter, the Company performed its annual impairment test which did not result in any impairment of goodwill. Auditing management's annual impairment tests related to the Americas Components and eInfochips reporting units was especially challenging due to the complexity of forecasting the long-term cash flows of these businesses and the significant estimation uncertainty of the assumptions included within such forecasts. The significant estimation uncertainty was primarily due to the sensitivity of the reporting units' fair value to changes in the underlying assumptions used in the income approach which include, among others, forecasted revenue, gross profit margins, operating income margins, forecasted working capital levels, and long-term growth and discount rates. These significant assumptions are inherently uncertain and require a high degree of estimation and judgment based on an evaluation of historical performance, current industry and global economic and geo-political conditions, and the timing and success of the Company's ability to implement strategic initiatives.

How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's goodwill impairment review process, including controls over management's review of the significant assumptions described above and controls over management's review of its annual financial forecasts. To test the estimated fair value of the Americas Components and eInfochips reporting units, we performed audit procedures that included, among others, involving a specialist to assist in assessing the Company's fair value methodologies and its development and calculation of the long-term growth and discount rates. We assessed the reasonableness of the Company's assumptions around forecasted revenue, gross profit margins, operating income margins, forecasted working capital levels, long-term growth and discount rates, and tax rates by comparing those assumptions to recent historical performance, current economic and industry trends, and annual financial forecasts presented to the Board of Directors and communicated to external analysts. We also assessed the reasonableness of estimates included in the Company's annual financial forecast by evaluating how such assumptions compared to economic, industry, and peer expectations. We evaluated management's historical accuracy in forecasting revenues, gross profit margin, operating income margins, and capital expenditures by comparing past forecasts to subsequent actual activity. We performed various sensitivity analyses around these significant assumptions to understand the impact on the fair value calculation and focused our testing accordingly. We evaluated the Company's determination of its reporting units and tested the allocation of net assets to each of its reporting units. We also tested the Company's reconciliation of the fair value of its reporting units to the Company's market value as of the impairment test date.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 1975.
Denver, Colorado
February 9, 2023

ARROW ELECTRONICS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands except per share data)

	Years Ended December 31,		
	2022	2021	2020
Sales	$ 37,124,422	$ 34,477,018	$ 28,673,363
Cost of sales	32,287,797	30,274,653	25,482,233
Gross profit	4,836,625	4,202,365	3,191,130
Operating expenses:			
Selling, general, and administrative expenses	2,567,008	2,435,030	2,087,050
Depreciation and amortization	187,382	195,120	189,058
Restructuring, integration, and other charges	13,741	15,393	20,511
	2,768,131	2,645,543	2,296,619
Operating income	2,068,494	1,556,822	894,511
Equity in earnings (losses) of affiliated companies	7,664	3,508	(531)
Gain (loss) on investments, net	(2,857)	12,951	5,348
Employee benefit plan expense, net	(3,503)	(5,180)	(2,859)
Interest and other financing expense, net	(185,648)	(131,727)	(137,210)
Income before income taxes	1,884,150	1,436,374	759,259
Provision for income taxes	448,992	325,906	172,795
Consolidated net income	1,435,158	1,110,468	586,464
Noncontrolling interests	8,274	2,271	2,026
Net income attributable to shareholders	$ 1,426,884	$ 1,108,197	$ 584,438
Net income per share:			
Basic	$ 22.01	$ 15.29	$ 7.49
Diluted	$ 21.80	$ 15.10	$ 7.43
Weighted-average shares outstanding:			
Basic	64,838	72,472	77,992
Diluted	65,453	73,385	78,635

See accompanying notes.

ARROW ELECTRONICS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(In thousands)

	Years Ended December 31,		
	2022	**2021**	**2020**
Consolidated net income (loss)	$ 1,435,158	$ 1,110,468	$ 586,464
Other comprehensive income (loss):			
Foreign currency translation adjustment and other, net of taxes	(231,464)	(133,106)	185,952
Unrealized gain (loss) on foreign exchange contracts designated as net investment hedges, net of taxes	8,779	14,452	(13,488)
Unrealized gain (loss) on interest rate swaps designated as cash flow hedges, net of taxes	28,664	21,538	(9,000)
Employee benefit plan items, net of taxes	18,724	7,150	(2,864)
Other comprehensive income (loss)	(175,297)	(89,966)	160,600
Comprehensive income	1,259,861	1,020,502	747,064
Less: Comprehensive income (loss) attributable to noncontrolling interests	6,582	(923)	5,300
Comprehensive income attributable to shareholders	$ 1,253,279	$ 1,021,425	$ 741,764

See accompanying notes.

ARROW ELECTRONICS, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands except par value)

	December 31, 2022	December 31, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 176,915	$ 222,194
Accounts receivable, net	12,322,717	11,123,946
Inventories	5,319,369	4,201,965
Other current assets	521,339	345,218
Total current assets	18,340,340	15,893,323
Property, plant, and equipment, at cost:		
Land	5,691	5,736
Buildings and improvements	184,211	186,097
Machinery and equipment	1,583,661	1,523,919
	1,773,563	1,715,752
Less: Accumulated depreciation and amortization	(1,177,107)	(1,032,941)
Property, plant, and equipment, net	596,456	682,811
Investments in affiliated companies	65,112	63,695
Intangible assets, net	159,137	195,029
Goodwill	2,027,626	2,080,371
Other assets	574,511	620,311
Total assets	$ 21,763,182	$ 19,535,540
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 10,460,419	$ 9,617,084
Accrued expenses	1,339,302	1,326,386
Short-term borrowings, including current portion of long-term debt	589,883	382,619
Total current liabilities	12,389,604	11,326,089
Long-term debt	3,182,964	2,244,443
Other liabilities	579,261	624,162
Equity:		
Shareholders' equity:		
Common stock, par value $1:		
Authorized - 160,000 shares in both 2022 and 2021		
Issued - 125,424 shares in both 2022 and 2021	125,424	125,424
Capital in excess of par value	1,208,708	1,189,845
Treasury stock (66,175 and 57,358 shares in 2022 and 2021, respectively), at cost	(4,637,345)	(3,629,265)
Retained earnings	9,214,832	7,787,948
Accumulated other comprehensive loss	(365,262)	(191,657)
Total shareholders' equity	5,546,357	5,282,295
Noncontrolling interests	64,996	58,551
Total equity	5,611,353	5,340,846
Total liabilities and equity	$ 21,763,182	$ 19,535,540

See accompanying notes.

ARROW ELECTRONICS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Years Ended December 31,		
	2022	**2021**	**2020**
Cash flows from operating activities:			
Consolidated net income	$ 1,435,158	$ 1,110,468	$ 586,464
Adjustments to reconcile consolidated net income to net cash provided by (used for) operations:			
Depreciation and amortization	187,382	195,120	189,058
Amortization of stock-based compensation	42,930	36,117	35,288
Equity in (earnings) losses of affiliated companies	(7,664)	(3,508)	531
Deferred income taxes	(13,050)	24,749	29,713
Loss (gain) on investments, net	2,857	(12,833)	(5,333)
Other	3,612	8,429	12,282
Change in assets and liabilities:			
Accounts receivable, net	(1,430,400)	(2,109,159)	(541,427)
Inventories	(1,165,785)	(960,605)	244,325
Accounts payable	945,819	1,766,912	760,883
Accrued expenses	102,193	391,941	86,484
Other assets and liabilities	(136,129)	(28,648)	(38,425)
Net cash provided by (used for) operating activities	(33,077)	418,983	1,359,843
Cash flows from investing activities:			
Acquisition of property, plant, and equipment	(78,836)	(83,051)	(123,585)
Proceeds from sale of property, plant, and equipment	—	22,171	—
Cash paid for customer relationship intangible asset	—	—	(713)
Proceeds from collections of notes receivable	21,125	762	—
Payments from issuance of notes receivable	—	—	(14,496)
Net cash used for investing activities	(57,711)	(60,118)	(138,794)
Cash flows from financing activities:			
Change in short-term and other borrowings	258,816	12,938	(95,017)
Proceeds from (repayments of) long-term bank borrowings, net	1,233,250	(687)	(411,497)
Redemption of notes	(350,000)	(130,860)	(209,366)
Net proceeds from note offering	—	495,134	—
Proceeds from exercise of stock options	17,340	46,982	21,037
Repurchases of common stock	(1,049,487)	(911,548)	(483,735)
Settlement of forward-starting interest rate swap	—	24,896	(48,378)
Other	(137)	(159)	(141)
Net cash provided by (used for) financing activities	109,782	(463,304)	(1,227,097)
Effect of exchange rate changes on cash	(64,273)	(46,982)	79,560
Net increase (decrease) in cash and cash equivalents	(45,279)	(151,421)	73,512
Cash and cash equivalents at beginning of year	222,194	373,615	300,103
Cash and cash equivalents at end of year	$ 176,915	$ 222,194	$ 373,615

See accompanying notes.

ARROW ELECTRONICS, INC.
CONSOLIDATED STATEMENTS OF EQUITY
(In thousands)

	Common Stock at Par Value	Capital in Excess of Par Value	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Noncontrolling Interests	Total
Balance at December 31, 2019	$ 125,424	$ 1,150,006	$ (2,332,548)	$ 6,131,248	$ (262,211)	$ 54,474	$ 4,866,393
Effect of new accounting principles	—	—	—	(35,935)	—	—	(35,935)
Consolidated net income	—	—	—	584,438	—	2,026	586,464
Other comprehensive income	—	—	—	—	157,326	3,274	160,600
Amortization of stock-based compensation	—	35,288	—	—	—	—	35,288
Shares issued for stock-based compensation awards	—	(19,444)	40,481	—	—	—	21,037
Repurchases of common stock	—	—	(484,754)	—	—	—	(484,754)
Distributions	—	—	—	—	—	(141)	(141)
Balance at December 31, 2020	125,424	1,165,850	(2,776,821)	6,679,751	(104,885)	59,633	5,148,952
Consolidated net income	—	—	—	1,108,197	—	2,271	1,110,468
Other comprehensive loss	—	—	—	—	(86,772)	(3,194)	(89,966)
Amortization of stock-based compensation	—	36,117	—	—	—	—	36,117
Shares issued for stock-based compensation awards	—	(12,122)	59,104	—	—	—	46,982
Repurchases of common stock	—	—	(911,548)	—	—	—	(911,548)
Distributions	—	—	—	—	—	(159)	(159)
Balance at December 31, 2021	125,424	1,189,845	(3,629,265)	7,787,948	(191,657)	58,551	5,340,846
Consolidated net income	—	—	—	1,426,884	—	8,274	1,435,158
Other comprehensive loss	—	—	—	—	(173,605)	(1,692)	(175,297)
Amortization of stock-based compensation	—	42,930	—	—	—	—	42,930
Shares issued for stock-based compensation awards	—	(24,067)	41,407	—	—	—	17,340
Repurchases of common stock	—	—	(1,049,487)	—	—	—	(1,049,487)
Distributions	—	—	—	—	—	(137)	(137)
Balance at December 31, 2022	$ 125,424	$ 1,208,708	$ (4,637,345)	$ 9,214,832	$ (365,262)	$ 64,996	$ 5,611,353

See accompanying notes.

ARROW ELECTRONICS, INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. Summary of Significant Accounting Policies

Principles of Consolidation

The consolidated financial statements of Arrow Electronics, Inc. (the “company” or “Arrow”) include the accounts of the company, its majority-owned subsidiaries, and Arrow EMEA Funding Corp B.V. (see Note 4). All significant intercompany transactions are eliminated.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States (“GAAP”) requires the company to make significant estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Actual results could differ from those estimates.

Cash and Cash Equivalents

Cash equivalents consist of highly liquid investments, which are readily convertible into cash, with original maturities of three months or less.

Trade Accounts and Notes Receivable

Trade accounts and notes receivable are reported at amortized cost, net of the allowance for credit losses in the consolidated balance sheets. The allowance for credit losses is a valuation account that is deducted from the receivables' amortized cost basis to present the net amount expected to be collected. Receivables are written off against the allowance when management believes the receivable balance is confirmed to be uncollectible.

Management estimates the allowance for credit losses using relevant available information about expected credit losses and an age-based reserve model. Inputs to the model include information about historical credit losses, customer credit ratings, past events, current conditions, and reasonable and supportable forecasts. Adjustments to historical loss information are made for differences in current receivable-specific risk characteristics such as changes in the economic and industry environment, or other relevant factors.

Expected credit losses are estimated on a collective (pool) basis, when similar risk characteristics exist, based on customer credit ratings, which include both externally acquired as well as internally determined credit ratings. Receivables that do not share risk characteristics are evaluated on an individual basis.

Inventories

Inventories are stated at the lower of cost or net realizable value. Cost is determined on a moving average cost basis, which approximates the first-in, first-out method. Substantially all inventories represent finished goods held for sale.

Property, Plant, and Equipment

Property, plant, and equipment are stated at cost. Depreciation is computed on the straight-line method over the estimated useful lives of the assets. The estimated useful lives for depreciation of buildings is generally 20 to 30 years, and the estimated useful lives of machinery and equipment is generally three to ten years. Leasehold improvements are amortized over the shorter of the term of the related lease or the life of the improvement. Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate the carrying value of a specific asset or asset group may not be recoverable. We assess the recoverability of long-lived assets with definite lives at the asset group level. Asset groups are determined based upon the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. If the carrying value of an asset group cannot be recovered from estimated future cash flows, undiscounted and without interest, the fair value of the asset is calculated using the present value of estimated net future cash flows. If the fair value is less than the carrying amount of the asset, a loss is recognized for the difference, subject to the limitation of individual asset fair values within the group.

Software Development Costs

The company capitalizes certain internal and external costs incurred to acquire or create internal-use software. Capitalized software costs are amortized on a straight-line basis over the estimated useful life of the software, which is generally three to twelve years. At December 31, 2022 and 2021, the company had unamortized software development costs of $313.6 million and $382.4 million, respectively, which are included in “Machinery and equipment” in the company’s consolidated balance sheets.

Identifiable Intangible Assets

Amortization of definite-lived intangible assets is computed using the straight-line method over the estimated useful lives of the assets. Identifiable intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amounts may not be recoverable.

Investments

Investments are accounted for using the equity method if the investment provides the company the ability to exercise significant influence, but not control, over an investee. Significant influence is generally deemed to exist if the company has an ownership interest in the voting stock of the investee between 20% and 50%, although other factors, such as representation on the investee's Board of Directors, are considered in determining whether the equity method is appropriate. The company records its investments in equity method investees meeting these characteristics as “Investments in affiliated companies” in the company's consolidated balance sheets.

Equity investments for which the company does not possess the ability to exercise significant influence, are measured at fair value, using quoted market prices, and are included in “Other assets” in the company’s consolidated balance sheets. Changes in fair value are recorded in “Gain (loss) on investments, net” in the company’s consolidated statements of operations. During the year ended December 31, 2022, the company recorded a net loss on investments of $2.9 million.

The company records equity investments that do not have readily determinable fair values at cost minus impairment, if any, plus or minus changes resulting from observable price changes.

Goodwill

Goodwill represents the excess of the cost of an acquisition over the fair value of the net assets acquired. The company tests goodwill for impairment annually as of the first day of the fourth quarter and/or when an event occurs or circumstances change such that it is more likely than not that an impairment may exist. Examples of such events and circumstances that the company would consider include the following:

- macroeconomic conditions such as deterioration in general economic conditions, limitations on accessing capital, fluctuations in foreign exchange rates, or other developments in equity and credit markets;
- industry and market considerations such as a deterioration in the environment in which the company operates, an increased competitive environment, a decline in market-dependent multiples or metrics (considered in both absolute terms and relative to peers), a change in the market for the company's products or services, or a regulatory or political development;
- cost factors such as increases in inventory, labor, or other costs that have a negative effect on earnings and cash flows;
- overall financial performance such as negative or declining cash flows or a decline in actual or planned revenue or earnings compared with actual and projected results of relevant prior periods;
- other relevant entity-specific events such as changes in management, key personnel, strategy, or customers, contemplation of bankruptcy, or litigation;
- events affecting a reporting unit such as a change in the composition or carrying amount of its net assets, a more likely than not expectation of selling or disposing all, or a portion, of a reporting unit, the testing for recoverability of a significant asset group within a reporting unit, or recognition of a goodwill impairment loss in the financial statements of a subsidiary that is a component of a reporting unit; and
- a sustained decrease in share price (considered in both absolute terms and relative to peers).

Goodwill is tested at a level of reporting referred to as “the reporting unit.” The company's reporting units are defined as:

- each of the three regional businesses within the global components business segment:
    - Americas Components;
    - Europe, the Middle East, and Africa (“EMEA”) Components;

    - Asia/Pacific Components;
- eInfochips, which is part of the global components business segment. and;
- each of the two regional businesses within the global ECS business segment:
    - ECS Americas;
    - ECS EMEA

Within the global components business segment, the Asia/Pacific reporting unit's goodwill was previously fully impaired.

An entity has the option to first assess qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not (that is, a likelihood of more than 50%) that the fair value of a reporting unit is less than its carrying amount. If, after assessing the totality of events or circumstances, an entity determines it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, then the quantitative goodwill impairment test is unnecessary. The company elected not to perform the qualitative assessment and performed the quantitative goodwill impairment test. The quantitative goodwill impairment test, used to identify both the existence of impairment and the amount of impairment loss, compares the fair value of a reporting unit with its carrying amount, including goodwill. If the carrying amount of the reporting unit is less than its fair value, no impairment exists. If the carrying amount of a reporting unit exceeds its fair value, an impairment loss shall be recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit.

The company estimates the fair value of a reporting unit using the income approach. For the purposes of the income approach, fair value is determined based on the present value of estimated future cash flows, discounted at an appropriate risk-adjusted rate. The assumptions included in the income approach include forecasted revenues, gross profit margins, operating income margins, working capital, cash flow, perpetual growth rates, income tax rates, and long-term discount rates, among others, all of which require significant judgments by management. Actual results may differ from those assumed in the company's forecasts. The company also reconciles its discounted cash flow analysis to its current market capitalization allowing for a reasonable control premium. As of the first day of the fourth quarters of 2022, 2021, and 2020, the company's annual impairment testing did not indicate impairment at any of the company's reporting units.

As of the date of the company's 2022 annual impairment test, the fair value of all reporting units exceeded their carrying values by more than 20%. Discount rates are one of the more significant assumptions used in the income approach, and given the rise in interest rates during 2022, the company increased its risk-adjusted discount rates for all reporting units. If the company increased the discount rates used by 100 basis points, the fair value of all reporting units would still exceeded their carrying values by more than 10%.

A decline in general economic conditions or global equity valuations could impact the judgments and assumptions about the fair value of the company's businesses, and the company could be required to record an impairment charge in the future, which could impact the company's consolidated balance sheets, as well as the company's consolidated statements of operations. If the company was required to recognize an impairment charge in the future, the charge would not impact the company's consolidated cash flows, current liquidity, capital resources, and covenants under its existing revolving credit facility, North American asset securitization program, other outstanding borrowings, and EMEA asset securitization program.

As of December 31, 2022, the company has $2.0 billion of goodwill, of which approximately $569.0 million and $107.0 million was allocated to the Americas and EMEA reporting units within the global components business segment, respectively, $782.2 million and $372.4 million was allocated to the North America and EMEA reporting units within the global ECS business segment, respectively, and $197.0 million was allocated to the eInfochips reporting unit. (See Note 2).

Leases

The company determines if a contract contains a lease at inception based on whether it conveys the right to control the use of an identified asset. Substantially all of the company's leases are classified as operating leases. The company records operating lease right-of-use assets within “Other assets” and lease liabilities are recorded within “Other liabilities” and “Accrued expenses” in the consolidated balance sheets. Lease expenses are recorded within “Selling, general, and administrative expenses” in the consolidated statements of operations. Operating lease payments are presented within “Operating cash flows” in the consolidated statements of cash flows.

Operating lease right-of-use assets and lease liabilities are recognized based on the net present value of future minimum lease payments over the lease term starting on the commencement date. The company generally is not able to determine the rate implicit in its leases and, as such, applies an incremental borrowing rate based on the company's cost of borrowing for the relevant terms of each lease. Lease expense for minimum lease payments is recognized on a straight-line basis over the lease term. Lease terms may include an option to extend or terminate a lease if it is reasonably certain that the company will exercise such options. The company does not separate lease components from non-lease components, and also has elected not to record a right-of-use asset or lease liability for leases which, at inception, have a term of twelve months or less. Variable lease payments are recognized in the period in which the obligation for those payments is incurred.

Foreign Currency Translation and Remeasurement

The assets and liabilities of international operations are translated at the exchange rates in effect at the balance sheet date. Revenue and expense accounts are translated at the monthly average exchange rates. Adjustments arising from the translation of the foreign currency financial statements of the company's international operations are reported as a component of "Accumulated other comprehensive loss" in the company's consolidated balance sheets.

For foreign currency remeasurement from each local currency into the appropriate functional currency, monetary assets and liabilities are remeasured to functional currencies using current exchange rates in effect at the balance sheet date. Gains or losses from these remeasurements were not significant and have been included in the company's consolidated statements of operations. Non-monetary assets and liabilities are recorded at historical exchange rates. Transactions denominated in currencies other than the applicable functional currency are converted to the functional currency at the exchange rate on the transaction date.

Income Taxes

Income taxes are accounted for under the liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of differences between the tax bases of assets and liabilities and their financial reporting amounts using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

The carrying value of the company's deferred tax assets is dependent upon the company's ability to generate sufficient future taxable income in certain tax jurisdictions. Should the company determine that it is more likely than not that some portion or all of its deferred tax assets will not be realized, a valuation allowance to reduce the deferred tax assets is established in the period such determination is made. The assessment of the need for a valuation allowance requires considerable judgment on the part of management with respect to the benefits that could be realized from future taxable income, as well as other positive and negative factors.

It is also the company's policy to provide for uncertain tax positions and the related interest and penalties based upon management's assessment of whether a tax benefit is more likely than not to be sustained upon examination by tax authorities. To the extent the company prevails in matters for which a liability for an unrecognized tax benefit is established, or is required to pay amounts in excess of the liability, or when other facts and circumstances change, the company's effective tax rate in a given financial statement period may be materially affected.

Net Income Per Share

Basic net income per share is computed by dividing net income attributable to shareholders by the weighted-average number of common shares outstanding for the period. Diluted net income per share reflects the potential dilution that would occur if securities or other contracts to issue common stock were exercised or converted into common stock.

Comprehensive Income

Comprehensive income consists of consolidated net income, foreign currency translation adjustment, unrealized gains or losses on post-retirement benefit plans, unrealized gains or losses on foreign exchange contracts designated as net investment hedges, and unrealized gains and losses on interest rate swaps designated as cash flow hedges. Unrealized gains or losses on interest rate swaps, and foreign exchange contracts are net of any reclassification adjustments for realized gains or losses included in consolidated net income. Amounts related to net investment hedges that are excluded from the assessment of hedge effectiveness are amortized to "interest and other financing expenses, net" on a straight-line basis over the life of the hedging instrument. Foreign currency translation adjustments included in comprehensive income which are deemed permanent investments in international affiliates were not tax effected. All other comprehensive income items are net of related income taxes.

Stock-Based Compensation

The company records share-based payment awards exchanged for employee services at fair value on the date of grant and expenses the awards in the consolidated statements of operations over the requisite employee service period. Stock-based compensation expense includes an estimate for forfeitures. Stock-based compensation expense related to awards with a market or performance condition which cliff vest, are recognized over the vesting period on a straight-line basis. Stock-based compensation awards with service conditions only are also recognized on a straight-line basis. Stock-based compensation expense related to awards with graded vesting and performance conditions is recognized using the graded vesting method.

Segment Reporting

Operating segments are defined as components of an enterprise for which separate financial information is available that is evaluated regularly by the chief operating decision maker in deciding how to allocate resources and in assessing performance. The company's operations are classified into two reportable business segments: global components and global ECS (see Note 15).

Revenue Recognition

The company recognizes revenue as control of products is transferred to customers, which generally happens at the point of shipment. Sales are recorded net of discounts, rebates, and returns, which historically have not been material. The company allows its customers to return product for exchange or credit in limited circumstances. A liability is recorded at the time of sale for estimated product returns based upon historical experience. The company also provides volume rebates and other discounts to certain customers which are considered a variable consideration. A provision for customer rebates and other discounts is recorded as a reduction of revenue at the time of sale based on an evaluation of the contract terms and historical experience. Tariffs are included in sales as the company has enforceable rights to additional consideration to cover the cost of tariffs. Other taxes imposed by governmental authorities on the company's revenue producing activities with customers, such as sales taxes and value-added taxes, are excluded from net sales.

Products sold by the company are generally delivered via shipment from the company's facilities, drop shipment directly from the vendor, or by electronic delivery of keys for software products. A portion of the company's business involves shipments directly from its suppliers to its customers, in these transactions, the company is generally responsible for negotiating price both with the supplier and customer, payment to the supplier, establishing payment terms with the customer, product returns, and has risk of loss if the customer does not make payment. As the principal with the customer, the company recognizes revenue upon receiving notification from the supplier that the product was shipped.

The company has contracts with certain customers where the company's performance obligation is to arrange for the products or services to be provided by another party. In these arrangements, as the company assumes an agency relationship in the transaction, revenue is recognized in the amount of the net fee associated with serving as an agent. These arrangements relate to the sale of supplier service contracts to customers where the company has no future obligation to perform under these contracts or the rendering of logistics services for the delivery of inventory for which the company does not assume the risks and rewards of ownership.

No single customer accounted for more than 2% of the company's 2022 consolidated sales. One supplier accounted for approximately 13% of the company's consolidated sales in 2022. No other single supplier accounted for more than 7% of the company's consolidated sales in 2022. The company believes that many of the products it sells are available from other sources at competitive prices. However, certain parts of the company's business, such as the company's global ECS business segment, rely on a limited number of suppliers with the strategy of providing focused support, extensive product knowledge, and customized service to suppliers, value-added resellers ("VARs"), and managed service providers ("MSPs"). Most of the company's purchases are pursuant to distributor agreements, which are typically non-exclusive and cancelable by either party at any time or on short notice.

Shipping and Handling Costs

The company reports shipping and handling costs, primarily related to outbound freight, in the consolidated statements of operations as a component of "Selling, general, and administrative expenses" or "Cost of sales", depending on the nature of the transaction.

Vendor Programs

The company participates in supplier programs that provide for price protection, product rebates, marketing/promotional allowances, and other incentives. The consideration received under these programs is recorded in the consolidated statements of operations as an adjustment to cost of goods sold or selling, general, and administrative expenses, according to the nature of the activity and terms of the vendor program. Incentives are accrued as they are earned based on sales of qualifying products or as services are provided in accordance with the terms of the related program.

Impact of Recently Issued Accounting Standards

In September 2022, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2022-04, *Liabilities—Supplier Finance Programs (Subtopic 405-50) Disclosure of Supplier Finance Program Obligations* ("ASU No. 2022-04"). ASU No. 2022-04 requires that a buyer in a supplier finance program disclose sufficient information about the program to allow a user of financial statements to understand the program's nature, activity during the period, and potential magnitude. The amendments in this ASU will be applied retrospectively to each period in which a balance sheet is presented, with the exception of a new requirement to disclose a rollforward of program activity, which will be applied prospectively. The amendments in the ASU are effective for fiscal years beginning after December 15, 2022, with early adoption permitted. The disclosures required by this ASU would be required in the company's consolidated financial statements beginning in the first quarter of 2023. The company is currently evaluating the potential effects of adopting the provisions of ASU No. 2022-04.

Reclassification

Certain prior period amounts were reclassified to conform to the current period presentation. These reclassifications did not have a material impact on previously reported amounts.

2. Goodwill and Intangible Assets

Goodwill represents the excess of the cost of an acquisition over the fair value of the net assets acquired. The company tests goodwill and other indefinite-lived intangible assets for impairment annually as of the first day of the fourth quarter, or more frequently if indicators of potential impairment exist. As of the first day of the fourth quarters of 2022, 2021, and 2020, the company's annual impairment testing did not result in any additional impairment of goodwill of companies acquired.

Goodwill of companies acquired, allocated to the company's business segments, is as follows:

(thousands)	**Global Components**	**Global ECS**	**Total**
Balance as of December 31, 2020 (a)	$ 894,975	$ 1,220,494	$ 2,115,469
Foreign currency translation adjustment	(12,027)	(23,071)	(35,098)
Balance as of December 31, 2021 (a)	$ 882,948	$ 1,197,423	$ 2,080,371
Foreign currency translation adjustment	(9,945)	(42,800)	(52,745)
Balance as of December 31, 2022 (a)	$ 873,003	$ 1,154,623	$ 2,027,626

(a) The total carrying value of goodwill as of December 31, 2022, 2021, and 2020 in the table above is reflected net of $1.6 billion of accumulated impairment charges, of which $1.3 billion was recorded in the global components business segment and $301.9 million was recorded in the global ECS business segment.

Intangible assets, net, are comprised of the following as of December 31, 2022:

(thousands)	**Gross Carrying Amount**	**Accumulated Amortization**	**Net**
Customer relationships	$ 268,180	$ (144,655)	$ 123,525
Amortizable trade name	74,011	(38,399)	35,612
	$ 342,191	$ (183,054)	$ 159,137

Intangible assets, net, are comprised of the following as of December 31, 2021:

(thousands)	Gross Carrying Amount	Accumulated Amortization	Net
Customer relationships	$ 322,335	$ (173,123)	$ 149,212
Amortizable trade name	74,049	(28,232)	45,817
	$ 396,384	$ (201,355)	$ 195,029

Amortization expense related to identifiable intangible assets was $34.7 million, $36.9 million, and $38.4 million for the years ended December 31, 2022, 2021, and 2020, respectively. Amortization expense for each of the years 2023 through 2027 is estimated to be approximately $31.2 million, $29.5 million, $20.3 million, $19.5 million, and $18.9 million, respectively.

3. Investments in Affiliated Companies

The company owns a 50% interest in two joint ventures with Marubun Corporation (collectively "Marubun/Arrow") and a 50% interest in one other joint venture. These investments are accounted for using the equity method.

The following table presents the company's investment in affiliated companies:

(thousands)	2022	2021
Marubun/Arrow	$ 54,292	$ 53,415
Other	10,820	10,280
	$ 65,112	$ 63,695

The equity in earnings (losses) of affiliated companies consists of the following:

(thousands)	2022	2021	2020
Marubun/Arrow	$ 6,289	$ 2,684	$ (726)
Other	1,375	824	195
	$ 7,664	$ 3,508	$ (531)

Under the terms of various joint venture agreements, the company is required to pay its pro-rata share of the third party debt of the joint ventures in the event that the joint ventures are unable to meet their obligations. There were no outstanding borrowings under the third party debt agreements of the joint ventures as of December 31, 2022 and 2021.

4. Accounts Receivable

Accounts receivable, net, consists of the following at December 31:

(thousands)	2022	2021
Accounts receivable	$ 12,416,114	$ 11,199,847
Allowances for doubtful accounts	(93,397)	(75,901)
Accounts receivable, net	$ 12,322,717	$ 11,123,946

Allowances for doubtful accounts consists of the following at December 31:

(thousands)	2022	2021
Balance at beginning of period	$ 75,901	$ 92,792
Charged to income	34,590	7,039
Translation Adjustments	(1,476)	(1,963)
Write-offs	(15,618)	(21,967)
Balance at end of period	$ 93,397	$ 75,901

The company monitors the current credit condition of its customers in estimating the expected credit losses and has not experienced significant changes in customers' payment trends or significant deterioration in customers' credit risk as of December 31, 2022.

The company has an EMEA asset securitization program under which it continuously sells its interest in designated pools of trade accounts receivables of certain of its subsidiaries in EMEA, at a discount, to a special purpose entity, which in turn sells certain of the receivables to unaffiliated financial institutions and conduits administered by such unaffiliated financial institutions ("unaffiliated financial institutions") on a monthly basis. In September 2022, the company amended its EMEA asset securitization program to increase its borrowing capacity from €400.0 million to €600.0 million and extend its maturity to December 2025, among other things. In January 2023, the company amended a provision in the EMEA asset securitization program to update certain financial ratios. The program is conducted through Arrow EMEA Funding Corp B.V., an entity structured to be bankruptcy remote. The company is deemed the primary beneficiary of Arrow EMEA Funding Corp B.V. as the company has both the power to direct the activities that most significantly impact the entity's economic performance and the obligation to absorb losses or the right to receive the benefits that could potentially be significant to the entity from the transfer of the trade accounts receivables into the special purpose entity. Accordingly, Arrow EMEA Funding Corp B.V. is included in the company's consolidated financial statements.

Sales of accounts receivables to unaffiliated financial institutions under the EMEA asset securitization program for the years ended December 31:

(thousands)	**2022**	**2021**
EMEA asset securitization, sales of accounts receivables	$ 2,524,276	$ 2,193,983

Receivables sold to unaffiliated financial institutions under the program are excluded from "Accounts receivable, net" on the company's consolidated balance sheets and cash receipts are reflected as cash provided by operating activities on the consolidated statements of cash flows. The purchase price is paid in cash when the receivables are sold. Certain unsold receivables held on Arrow EMEA Funding Corp B.V. are pledged as collateral to unaffiliated financial institutions. These unsold receivables are included in "Accounts receivable, net" in the company's consolidated balance sheets.

The company continues servicing the receivables which were sold and in exchange receives a servicing fee under the program. The company does not record a servicing asset or liability on the company's consolidated balance sheets as the company estimates that the fee it receives to service these receivables approximates the fair market compensation to provide the servicing activities.

Other amounts related to the EMEA asset securitization program as of December 31:

(thousands)	**2022**	**2021**
Receivables sold to unaffiliated financial institutions that were uncollected	$ 628,930	$ 453,292
Collateralized accounts receivable held by Arrow EMEA funding Corp B.V.	932,243	745,965

Any accounts receivables held by Arrow EMEA Funding Corp B.V. would likely not be available to other creditors of the company in the event of bankruptcy or insolvency proceedings if there are outstanding balances under the EMEA asset securitization program. The assets of the special purpose entity cannot be used by the company for general corporate purposes. Additionally, the financial obligations of Arrow EMEA Funding Corp B.V. to the unaffiliated financial institutions under the program are limited to the assets it owns and there is no recourse to Arrow Electronics, Inc. for receivables that are uncollectible as a result of the insolvency or inability to pay of the account debtors.

The EMEA asset securitization program includes terms and conditions that limit the incurrence of additional borrowings and require that certain financial ratios be maintained at designated levels. As of December 31, 2022, the company was in compliance with all such financial covenants.

5. Debt

Short-term borrowings, including the current portion of long-term debt, consists of the following at December 31:

(thousands)	2022	2021
3.50% notes, due April 2022	$ —	$ 349,779
4.50% notes, due March 2023	299,895	—
Commercial paper	173,407	—
Uncommitted lines of credit	78,000	—
Other short-term borrowings	38,581	32,840
	$ 589,883	$ 382,619

Other short-term borrowings are primarily utilized to support working capital requirements. The weighted-average interest rate on these borrowings was 1.98% and 1.41% at December 31, 2022 and 2021, respectively.

The company has $200.0 million in uncommitted lines of credit. There were $78.0 million in outstanding borrowings under the uncommitted lines of credit at December 31, 2022. The company had no outstanding borrowings under the uncommitted lines of credit at December 31, 2021. These borrowings were provided on a short-term basis and the maturity is agreed upon between the company and the lender. The uncommitted lines of credit had an effective interest rate of 5.22% and 1.50% at December 31, 2022 and 2021, respectively.

The company has a commercial paper program and the maximum aggregate balance of commercial paper outstanding may not exceed the borrowing capacity of $1.2 billion. Amounts outstanding under the commercial paper program are backstopped by available commitments under the company's revolving credit facility. There were $173.4 million in outstanding borrowings under the commercial paper program at December 31, 2022. The company had no outstanding borrowings under this program as of December 31, 2021. The commercial paper program had an effective interest rate of 5.15% and 0.29% at December 31, 2022 and 2021, respectively.

Long-term debt consists of the following at December 31:

(thousands)	2022	2021
North American asset securitization program	$ 1,235,000	$ —
4.50% notes, due 2023	—	299,283
3.25% notes, due 2024	498,122	497,060
4.00% notes, due 2025	348,344	347,657
7.50% senior debentures, due 2027	110,103	110,021
3.875% notes, due 2028	496,448	495,823
2.95% notes, due 2032	494,522	494,022
Other obligations with various interest rates and due dates	425	577
	$ 3,182,964	$ 2,244,443

The 7.50% senior debentures are not redeemable prior to their maturity. All other notes may be called at the option of the company subject to "make whole" clauses.

The estimated fair market value of long-term debt at December 31, using quoted market prices, is as follows:

(thousands)	2022	2021
4.50% notes, due 2023	$ —	$ 309,000
3.25% notes, due 2024	481,500	522,000
4.00% notes, due 2025	338,000	374,000
7.50% senior debentures, due 2027	116,500	136,000
3.875% notes, due 2028	456,000	542,500
2.95% notes, due 2032	395,500	504,500

The carrying amount of the company’s other short-term borrowings, 4.50% notes due in 2023, North American asset securitization program, commercial paper, uncommitted lines of credit, and other obligations approximate their fair value.

The company has a $2.0 billion revolving credit facility maturing in September 2026. The facility may be used by the company for general corporate purposes including working capital in the ordinary course of business, letters of credit, repayment, prepayment or purchase of long-term indebtedness, acquisitions, and as support for the company's commercial paper program, as applicable. Interest on borrowings under the revolving credit facility is calculated using a base rate or a Eurocurrency rate plus a spread (1.08% at December 31, 2022), which is based on the company's credit ratings, or a weighted-average effective interest rate of 4.79% at December 31, 2022. The facility fee, which is based on the company's credit ratings, was 0.175% of the total borrowing capacity at December 31, 2022. The company had no outstanding borrowings under the revolving credit facility at December 31, 2022 and 2021.

The company has a North American asset securitization program collateralized by accounts receivable of certain of its subsidiaries. In September 2022, the company amended its asset securitization program to increase its borrowing capacity from $1.25 billion to $1.5 billion and extended its maturity to September 2025, among other things. The program is conducted through Arrow Electronics Funding Corporation (“AFC”), a wholly-owned, bankruptcy remote subsidiary. The North American asset securitization program does not qualify for sale treatment. Accordingly, the accounts receivable and related debt obligation remain on the company's consolidated balance sheets. Interest on borrowings is calculated using a base rate plus a spread (0.40% at December 31, 2022), plus a credit spread adjustment of 0.10% or an effective interest rate of 4.86% at December 31, 2022. The facility fee is 0.40% of the total borrowing capacity.

The company had $1.2 billion in outstanding borrowings under the North American asset securitization program at December 31, 2022, which was included in "Long-term debt" in the company's consolidated balance sheets. There were no outstanding borrowings under the North American asset securitization program at December 31, 2021. Total collateralized accounts receivable of approximately $3.1 billion and $2.7 billion were held by AFC and were included in “Accounts receivable, net” in the company's consolidated balance sheets at December 31, 2022 and 2021, respectively. Any accounts receivable held by AFC would likely not be available to other creditors of the company in the event of bankruptcy or insolvency proceedings of the company before repayment of any outstanding borrowings under the North American asset securitization program.

Both the revolving credit facility and North American asset securitization program include terms and conditions that limit the incurrence of additional borrowings and require that certain financial ratios be maintained at designated levels. As of December 31, 2022, the company was in compliance with all such financial covenants.

During February 2022, the company repaid $350.0 million principal amount of its 3.50% notes due April 2022.

During December 2021, the company completed the sale of $500.0 million principal amount of 2.95% notes due in February 2032. The net proceeds of the offering of $495.1 million were used to repay the $350.0 million principal amount of its 3.50% notes due April 2022 and for general corporate purposes.

During March 2021, the company repaid $130.9 million principal amount of its 5.125% notes due March 2021.

In the normal course of business, certain of the company’s subsidiaries have agreements to sell, without recourse, selected trade receivables to financial institutions. The company does not retain financial or legal interests in these receivables, and, accordingly they are accounted for as sales of the related receivables, and the receivables are removed from the company’s consolidated balance sheets.

Annual payments of borrowings during each of the years 2023 through 2027 are $589.9 million, $498.4 million, $1.6 billion, $0.0 million, and $110.1 million, respectively, and $991.0 million for all years thereafter.

Interest and other financing expense, net, includes interest and dividend income of $33.7 million, $14.7 million, and $22.6 million in 2022, 2021, and 2020, respectively. Interest paid, net of interest and dividend income, amounted to $175.6 million, $113.1 million, and $138.3 million in 2022, 2021, and 2020, respectively.

6. Financial Instruments Measured at Fair Value

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The company utilizes a fair value hierarchy, which maximizes the use of observable inputs and minimizes the use of unobservable inputs when measuring fair value. The fair value hierarchy has three levels of inputs that may be used to measure fair value:

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

Level 2 Quoted prices in markets that are not active; or other inputs that are observable, either directly or indirectly, for substantially the full term of the asset or liability.

Level 3 Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable.

The following table presents assets (liabilities) measured at fair value on a recurring basis at December 31, 2022:

(thousands)	Balance Sheet Location	Level 1	Level 2	Level 3	Total
Cash equivalents (a)	Cash and cash equivalents/ Other assets	$ 6,596	$ —	$ —	$ 6,596
Equity investments (b)	Other assets	50,614	—	—	50,614
Interest rate swaps designated as cash flow hedges	Other assets	—	55,942	—	55,942
Foreign exchange contracts designated as net investment hedges	Other assets	—	60,962	—	60,962
		$ 57,210	$ 116,904	$ —	$ 174,114

The following table presents assets (liabilities) measured at fair value on a recurring basis at December 31, 2021:

(thousands)	Balance Sheet Location	Level 1	Level 2	Level 3	Total
Cash equivalents (a)	Cash and cash equivalents/ Other assets	$ 4,812	$ —	$ —	$ 4,812
Equity investments (b)	Other assets	56,985	—	—	56,985
Interest rate swaps designated as cash flow hedges	Other assets	—	21,831	—	21,831
Foreign exchange contracts designated as net investment hedges	Other assets	—	40,612	—	40,612
		$ 61,797	$ 62,443	$ —	$ 124,240

(a) Cash equivalents include highly liquid investments with an original maturity of less than three months.

(b) The company has an 8.4% equity ownership interest in Marubun Corporation and a portfolio of mutual funds with quoted market prices. During 2022, 2021, and 2020 the company recorded unrealized gains (losses) of $(5.8) million, $7.8 million, and $(0.2) million, respectively, on equity securities held at the end of each year.

Assets and liabilities that are measured at fair value on a nonrecurring basis relate primarily to goodwill, and identifiable intangible assets (see Note 2). The company tests these assets for impairment if indicators of potential impairment exist or at least annually if indefinite lived.

Derivative Instruments

The company uses various financial instruments, including derivative instruments, for purposes other than trading. Certain derivative instruments are designated at inception as hedges and measured for effectiveness both at inception and on an ongoing basis. Derivative instruments not designated as hedges are marked-to-market each reporting period with any unrealized gains or losses recognized in earnings.

Interest Rate Swaps

The company manages the risk of variability in interest rates of future expected debt issuances by entering into various forward starting interest rate swaps, designated as cash flow hedges. Changes in fair value of interest rate swaps are recorded in the shareholders' equity section in the company's consolidated balance sheets in "Accumulated other comprehensive loss" and will be reclassified into income over the life of the anticipated debt issuance or in the period the hedged forecasted cash flows are deemed no longer probable to occur. Gains and losses on interest rate swaps are recorded within the line item "Interest and other financing expense, net" in the consolidated statements of operations. The fair value of interest rate swaps are estimated using a discounted cash flow analysis on the expected cash flows of each derivative using observable inputs including interest rate curves and credit spreads.

At December 31, 2022 and 2021, the company had the following outstanding interest rate swaps designated as cash flow hedges:

Trade Date	Maturity Date	Notional Amount (thousands)	Weighted-Average Interest Rate	Date Range of Forecasted Transaction
April 2020	December 2024	$300,000	0.97%	Jan 2023 - Dec 2025

Foreign Exchange Contracts

The company's foreign currency exposure relates primarily to international transactions where the currency collected from customers can be different from the currency used to purchase the product. The company's exposures to such transactions are denominated primarily in the following currencies: Euro, Indian Rupee, and Chinese Renminbi. The company enters into foreign exchange forward, option, or swap contracts (collectively, the "foreign exchange contracts") to facilitate the hedging of foreign currency exposures resulting from inventory purchases and sales and mitigate the impact of changes in foreign currency exchange rates related to these transactions. Foreign exchange contracts generally have terms of no more than six months. The company does not enter into foreign exchange contracts for trading purposes. The fair value of the foreign exchange contracts is estimated using foreign currency spot rates and forward rates quotes by third party financial institutions. The notional amount of the foreign exchange contracts inclusive of foreign exchange contracts designated as a net investment hedge at December 31, 2022 and 2021 was $1.3 billion and $1.1 billion, respectively.

Gains and losses related to non-designated foreign currency exchange contracts are recorded in "Cost of sales" in the company's consolidated statements of operations. Gains and losses related to foreign currency exchange contracts designated as cash flow hedges are recorded in "Cost of sales," "Selling, general, and administrative expenses," and "Interest and other financing expense, net" based upon the nature of the underlying hedged transaction, in the company's consolidated statements of operations. Gains or losses on these contracts are deferred and recognized when the underlying future purchase or sale is recognized or when the corresponding asset or liability is revalued, and were not material to the financial statements for the periods presented.

At December 31, 2022, and 2021, the following foreign exchange contracts were designated as net investment hedges:

Maturity Date	Notional Amount (thousands)	
March 2023	EUR	50,000
September 2024	EUR	50,000
April 2025	EUR	100,000
January 2028	EUR	100,000
Total	EUR	300,000

The contracts above have been designated as a net investment hedge which is in place to hedge a portion of the company's net investment in subsidiaries with euro-denominated net assets. The change in the fair value of derivatives designated as net investment hedges are recorded in "foreign currency translation adjustment" ("CTA") within "Accumulated other comprehensive loss" in the company's consolidated balance sheets. Amounts excluded from the assessment of hedge effectiveness are included in "Interest and other financing expense, net" in the company's consolidated statements of operations.

The effects of derivative instruments on the company's consolidated statements of operations and other comprehensive income are as follows for the years ended December 31:

(thousands)	Income Statement Line	2022	2021	2020
Gain (Loss) Recognized in Income (Loss)				
Foreign exchange contracts, net investment hedge (a)	Interest Expense	$ 8,805	$ 8,805	$ 8,805
Interest rate swaps, cash flow hedge	Interest Expense	(3,586)	(3,087)	(3,979)
Total		$ 5,219	$ 5,718	$ 4,826
Gain (Loss) Recognized in Other Comprehensive Income (Loss) before reclassifications, net of tax				
Foreign exchange contracts, net investment hedge (b)		$ 15,474	$ 21,133	$ (6,802)
Interest rate swaps, cash flow hedge		25,937	19,232	(12,023)
Total		$ 41,411	$ 40,365	$ (18,825)

(a) Represents derivative amounts excluded from the assessment of effectiveness for the net investment hedges reclassified from CTA to Interest and other financing expenses, net.

(b) Includes derivative gains (losses) excluded from the assessment of effectiveness for the net investment hedges and recognized in other comprehensive income (net of tax) of $1.8 million, $(0.6) million, and $18.0 million for 2022, 2021, and 2020, respectively.

Other

The carrying amount of cash and cash equivalents, accounts receivable, net, and accounts payable approximate their fair value due to the short maturities of these financial instruments.

7. Income Taxes

The provision for income taxes for the years ended December 31 consists of the following:

(thousands)	2022	2021	2020
Current:			
Federal	$ 139,730	$ 68,555	$ 5,085
State	29,117	18,418	7,114
International	293,195	214,184	130,883
	$ 462,042	$ 301,157	$ 143,082
Deferred:			
Federal	$ (39,658)	$ (347)	$ 13,496
State	(5,613)	(388)	4,603
International	32,221	25,484	11,614
	(13,050)	24,749	29,713
	$ 448,992	$ 325,906	$ 172,795

The principal causes of the difference between the U.S. federal statutory tax rate of 21% and effective income tax rates for the years ended December 31 are as follows:

(thousands)	2022	2021	2020
United States	$ 517,642	$ 339,499	$ 104,637
International	1,366,508	1,096,875	654,622
Income before income taxes	$ 1,884,150	$ 1,436,374	$ 759,259
Provision at statutory tax rate	$ 395,672	$ 301,638	$ 159,444
State taxes, net of federal benefit	18,675	14,162	10,218
International effective tax rate differential	26,210	(5,402)	3,112
U.S. tax on foreign earnings	3,879	10,289	5,316
Tax expense on wind down of business (a)	—	—	1,937
Change in valuation allowance	(6,378)	(1,723)	2,906
Other non-deductible expenses	7,441	9,058	2,600
Changes in tax accruals	5,993	9,937	3,089
Tax credits	980	(17,555)	(16,075)
Other	(3,480)	5,502	248
Provision for income taxes	$ 448,992	$ 325,906	$ 172,795

(a) The wind down of the company’s personal computer and mobility asset disposition business resulted in net tax expense of $1.9 million during 2020.

The company is subject to taxation of global intangible low-taxed income (“GILTI”) on foreign subsidiaries and a tax provision to deduct a portion of foreign-derived intangible income (“FDII”) of U.S. corporations. GILTI tax expense, accounted for as a current period cost, net of FDII benefit, resulted in a net tax expense (benefit) of $(7.4) million, $(12.3) million, and $0.2 million during 2022, 2021, and 2020, respectively.

As of December 31, 2022, a long-term tax payable of $24.2 million was recorded in “Other liabilities” in the consolidated balance sheets for a one-time transition tax on the foreign subsidiaries' accumulated unremitted earnings related to the 2017 U.S. Tax Cuts and Jobs Act.

At December 31, 2022, the company had a liability for unrecognized tax position of $75.7 million. The timing of the resolution of these uncertain tax positions is dependent on the tax authorities' income tax examination processes. Material changes are not expected; however, it is possible that the amount of unrecognized tax benefits with respect to uncertain tax positions could increase or decrease during 2023. Currently, the company is unable to make a reasonable estimate of when tax cash settlement would occur and how it would impact the effective tax rate.

A reconciliation of the beginning and ending amount of unrecognized tax benefits for the years ended December 31 is as follows:

(thousands)	2022	2021	2020
Balance at beginning of year	$ 71,422	$ 62,203	$ 52,986
Additions based on tax positions taken during a prior period	6,760	2,528	8,574
Reductions based on tax positions taken during a prior period	(3,007)	(1,542)	(1,749)
Additions based on tax positions taken during the current period	3,526	9,326	5,174
Reductions based on tax positions taken during the current period	—	(370)	(831)
Reductions related to settlement of tax matters	(2,271)	(692)	(538)
Reductions related to a lapse of applicable statute of limitations	(764)	(31)	(1,413)
Balance at end of year	$ 75,666	$ 71,422	$ 62,203

Interest costs related to unrecognized tax benefits are classified as a component of "Interest and other financing expense, net" in the company's consolidated statements of operations. In 2022, 2021, and 2020, the company recognized $4.4 million, $1.3 million, and $1.9 million, respectively, of interest expense related to unrecognized tax benefits. At December 31, 2022 and 2021, the company had accrued a liability of $13.5 million and $9.1 million, respectively, for interest related to unrecognized tax benefits.

In many cases the company's uncertain tax positions are related to tax years that remain subject to examination by tax authorities. The following describes the open tax years, by major tax jurisdiction, as of December 31, 2022:

United States - Federal	2016 - present
United States - States	2015 - present
Germany (a)	2015 - present
China and Hong Kong	2015 - present
Italy (a)	2013 - present
Netherlands	2017 - present
Sweden	2015 - present
Taiwan	2017 - present
United Kingdom	2018 - present

(a) Includes federal as well as local jurisdictions.

Deferred income taxes are provided for the effects of temporary differences between the tax basis of an asset or liability and its reported amount in the consolidated balance sheets. These temporary differences result in taxable or deductible amounts in future years.

Deferred tax assets and liabilities consist of the following at December 31:

(thousands)	2022	2021
Deferred tax assets:		
Net operating loss carryforwards	$ 18,409	$ 50,015
Capital loss carryforwards	56,618	57,102
Inventory adjustments	46,188	55,755
Allowance for doubtful accounts	25,779	21,382
Accrued expenses	35,940	43,995
Interest carryforward	4,014	11,160
Stock-based compensation awards	7,559	6,981
Lease liability	71,415	69,856
Research and experimentation costs (a)	33,426	—
Other	—	6,291
	299,348	322,537
Valuation allowance	(75,842)	(82,220)
Total deferred tax assets	$ 223,506	$ 240,317
Deferred tax liabilities:		
Goodwill	$ (144,287)	$ (135,285)
Depreciation	(76,527)	(96,097)
Intangible assets	(3,042)	(8,429)
Lease right-of-use assets	(66,775)	(64,902)
Other comprehensive income items	(9,842)	—
Other	(3,002)	—
Total deferred tax liabilities	$ (303,475)	$ (304,713)
Total net deferred tax assets (liabilities)	$ (79,969)	$ (64,396)

(a) At December 31, 2022, the company recorded deferred tax asset of $33.4 million related to capitalized U.S. based research and experimental (“R&E”) costs, pursuant to the U.S. Internal Revenue Code Section 174, as amended by the 2017 U.S. Tax Cuts and Jobs Act.

At December 31, 2022, the company had international tax loss carryforwards of approximately $37.1 million, of which $3.8 million have expiration dates ranging from 2023 to 2042, and the remaining $33.3 million have no expiration date. Deferred tax assets related to these international tax loss carryforwards were $9.8 million with a corresponding valuation allowance of $2.5 million. At December 31, 2022, the company had a valuation allowance of $3.6 million related to other deferred tax assets.

At December 31, 2022, the company also had deferred tax assets of $0.1 million related to U.S. Federal net operating loss carryforwards from acquired subsidiaries. These U.S. Federal net operating losses expire in various years beginning after 2028. Additionally, as of December 31, 2022, the company had deferred tax assets of approximately $8.5 million with a corresponding valuation allowance of $7.9 million, related to U.S. state net operating loss carryforwards. Valuation allowances are needed when deferred tax assets may not be realized due to the uncertainty of the timing and the ability of the company to generate sufficient future taxable income in certain tax jurisdictions.

The company has $3.3 billion of undistributed earnings of its foreign subsidiaries which it deems indefinitely reinvested, and recognizes that it may be subject to additional foreign taxes and U.S. state income taxes, if it reverses its indefinite reinvestment assertion on these foreign earnings. The company has $2.1 billion of foreign earnings that are not deemed permanently reinvested and are available for distribution in future periods as of December 31, 2022, after distributions of $53.6 million and $349.0 million during 2021 and 2020, respectively.

Income taxes paid, net of income taxes refunded, amounted to $384.4 million, $221.1 million, and $160.1 million in 2022, 2021, and 2020, respectively.

8. Restructuring, Integration, and Other Charges

Restructuring initiatives and integration costs are due to the company's continued efforts to lower costs, drive operational efficiency, integrate acquired businesses, and the consolidation of certain operations, as necessary. The following table presents the components of the restructuring, integration, and other charges for the years ended December 31:

(thousands)	2022	2021	2020
Restructuring and integration charges - current period actions	$ 6,899	$ 15,126	$ 13,389
Restructuring and integration (credits) charges - actions taken in prior periods	95	1,547	(633)
Other charges (credits)	6,747	(1,280)	7,755
	$ 13,741	$ 15,393	$ 20,511

Restructuring and Integration Accrual Summary

The restructuring and integration accrual was $6.9 million and $11.2 million at December 31, 2022 and 2021, respectively. During the year ended December 31, 2022, the company made $8.3 million of payments related to restructuring and integration accruals, and recorded $7.0 million in restructuring and integration charges. The remaining changes to the accrual related to changes in foreign exchange rates during the year. Substantially all amounts accrued at December 31, 2022, and all restructuring and integration charges for the year ending December 31, 2022 relate to the termination of personnel and are expected to be spent in cash within one year.

Other Charges (Credits)

Other charges (credits) for 2022, 2021 and 2020 include $1.2 million, $4.5 million and $7.2 million in impairment related to various long lived assets, respectively.

9. Shareholders' Equity

Accumulated Other Comprehensive Loss

The following table presents the changes in Accumulated other comprehensive loss, excluding noncontrolling interests:

(thousands)	Foreign Currency Translation Adjustment and Other, Net	Unrealized Gain (Loss) on Foreign Exchange Contracts Designated as Net Investment Hedges, Net	Unrealized Gain (Loss) on Interest Rate Swaps Designated as Cash Flow Hedges, Net	Employee Benefit Plan Items, Net	Total
Balance as of December 31, 2020	$ (63,027)	$ (3,120)	$ (22,347)	$ (16,391)	$ (104,885)
Other comprehensive income (loss) before reclassifications (a)	(127,931)	21,133	19,232	4,223	(83,343)
Amounts reclassified into income	(1,981)	(6,681)	2,306	2,927	(3,429)
Net change in accumulated other comprehensive income (loss) for the year ended December 31, 2021	(129,912)	14,452	21,538	7,150	(86,772)
Balance as of December 31, 2021	(192,939)	11,332	(809)	(9,241)	(191,657)
Other comprehensive income (loss) before reclassifications (a)	(228,303)	15,474	25,937	17,245	(169,647)
Amounts reclassified into income	(1,469)	(6,695)	2,727	1,479	(3,958)
Net change in accumulated other comprehensive income (loss) for the year ended December 31, 2022	(229,772)	8,779	28,664	18,724	(173,605)
Balance as of December 31, 2022	$ (422,711)	$ 20,111	$ 27,855	$ 9,483	$ (365,262)

(a) Foreign currency translation adjustment includes intra-entity foreign currency transactions that are of a long-term investment nature of $(21.6) million and $(10.0) million for 2022 and 2021, respectively.

Common Stock Outstanding Activity

The following table sets forth the activity in the number of shares outstanding:

(thousands)	Common Stock Issued	Treasury Stock	Common Stock Outstanding
Common stock outstanding at December 31, 2019	125,424	44,804	80,620
Shares issued for stock-based compensation awards	—	(764)	764
Repurchases of common stock	—	6,541	(6,541)
Common stock outstanding at December 31, 2020	125,424	50,581	74,843
Shares issued for stock-based compensation awards	—	(945)	945
Repurchases of common stock	—	7,722	(7,722)
Common stock outstanding at December 31, 2021	125,424	57,358	68,066
Shares issued for stock-based compensation awards	—	(525)	525
Repurchases of common stock	—	9,342	(9,342)
Common stock outstanding at December 31, 2022	125,424	66,175	59,249

The company has 2.0 billion authorized shares of serial preferred stock with a par value of one dollar. There were no shares of serial preferred stock outstanding at December 31, 2022 and 2021.

Share-Repurchase Programs

The following table shows the company's Board of Directors (the "Board") approved share-repurchase programs as of December 31, 2022:

Month of Board Approval (thousands)	Dollar Value Approved for Repurchase	Dollar Value of Shares Repurchased	Approximate Dollar Value of Shares that May Yet be Purchased Under the Program
July 2020	$ 600,000	$ 600,000	$ —
July 2021	600,000	600,000	—
December 2021	600,000	600,000	—
September 2022	600,000	271,255	328,745
Total	$ 2,400,000	$ 2,071,255	$ 328,745

Under the share-repurchase program, the company repurchased 9.3 million shares and 7.7 million shares of common stock for $1.0 billion and $900.0 million, in 2022 and 2021, respectively. On September 14, 2022, the company's Board of Directors approved a $600.0 million increase to the company's share-repurchase program. As of December 31, 2022, $328.7 million remained available for repurchase under the program. On January 31, 2023, the company's Board of Directors approved a $1.0 billion increase to the company's share-repurchase program. The company's share repurchase programs do not have expiration dates.

10. Net Income Per Share

The following table presents the computation of net income per share on a basic and diluted basis for the years ended December 31:

(thousands except per share data)	2022	2021	2020
Net income attributable to shareholders	$ 1,426,884	$ 1,108,197	$ 584,438
Weighted-average shares outstanding - basic	64,838	72,472	77,992
Net effect of various dilutive stock-based compensation awards	615	913	643
Weighted-average shares outstanding - diluted	65,453	73,385	78,635
Net income per share:			
Basic	$ 22.01	$ 15.29	$ 7.49
Diluted (a)	$ 21.80	$ 15.10	$ 7.43

(a) Stock-based compensation awards for the issuance of 52.6 thousand shares and 1.1 million shares for the years ended December 31, 2022 and 2020, respectively, were excluded from the computation of net income per share on a diluted basis as their effect was anti-dilutive. There were no shares excluded from the computation of net income per share on a diluted basis in 2021.

11. Employee Stock Plans

Omnibus Plan

The company maintains the Arrow Electronics, Inc. 2004 Omnibus Incentive Plan (the "Omnibus Plan"), which provides an array of equity alternatives available to the company when designing compensation incentives. The Omnibus Plan permits the grant of cash-based awards, non-qualified stock options, incentive stock options ("ISOs"), stock appreciation rights, restricted stock, restricted stock units, performance shares, performance units, covered employee annual incentive awards, and other stock-based awards. The Compensation Committee of the company's Board of Directors (the "Compensation Committee") determines the vesting requirements, termination provision, and the terms of the award for any awards under the Omnibus Plan when such awards are issued. The company did not grant non-qualified stock options or ISOs in 2022 and 2021 and does not intend to grant them in the future.

Under the terms of the Omnibus Plan, a maximum of 24.0 million shares of common stock may be awarded. There were 5.6 million shares and 6.2 million shares available for grant under the Omnibus Plan as of December 31, 2022 and 2021, respectively. Generally, shares are counted against the authorization only to the extent that they are issued. Restricted stock, restricted stock units, performance shares, and performance units count against the authorization at a rate of 1.69 to 1.

The company records share-based payment awards exchanged for employee services at fair value on the date of grant and expenses the awards in the consolidated statements of operations on a straight-line basis over the requisite employee service period. Stock-based compensation expense includes an estimate for forfeitures. The company recorded, as a component of "Selling, general, and administrative expenses," amortization of stock-based compensation of $42.9 million, $36.1 million, and $35.3 million in 2022, 2021, and 2020, respectively. The actual tax benefit realized from share-based payment awards during 2022, 2021, and 2020 was $5.9 million, $8.6 million, and $5.3 million, respectively.

Stock Options

Under the Omnibus Plan, the company may grant both ISOs and non-qualified stock options. ISOs may only be granted to employees of the company, its subsidiaries, and its affiliates. The exercise price for options cannot be less than the fair market value of Arrow's common stock on the date of grant. Options generally vest in equal installments over a four-year period. Options currently outstanding have contractual terms of ten years.

The following information relates to the stock option activity for the year ended December 31, 2022:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life	Aggregate Intrinsic Value (thousands)
Outstanding at December 31, 2021	827,045	$ 76.66		
Exercised	(225,112)	77.03		
Forfeited	(33,614)	74.32		
Outstanding at December 31, 2022	568,319	76.65	62 months	$ 16,260
Exercisable at December 31, 2022	380,326	$ 74.01	56 months	$ 11,621

The aggregate intrinsic value in the table above represents the total pre-tax intrinsic value (the difference between the company's closing stock price on the last trading day of 2022 and the exercise price, multiplied by the number of in-the-money options) received by the option holders had all option holders exercised their options on December 31, 2022. This amount changes based on the market value of the company's stock.

The total intrinsic value of options exercised during 2022, 2021, and 2020 was $10.0 million, $26.6 million, and $8.2 million, respectively.

Cash received from option exercises during 2022, 2021, and 2020 was $17.3 million, $47.0 million, and $21.0 million, respectively, and is included within the financing activities section in the company's consolidated statements of cash flows.

The grant date fair value of stock options was estimated using the Black-Scholes valuation model with the following weighted-average assumptions for the years ended December 31:

	2020
Volatility (percent) (a)	24
Expected term (in years) (b)	5.6
Risk-free interest rate (percent) (c)	1.4

(a) Volatility is measured using historical daily price changes of the company's common stock over the expected term of the option.

(b) The expected term represents the weighted-average period the option is expected to be outstanding and is based primarily on the historical exercise behavior of employees.

(c) The risk-free interest rate is based on the U.S. Treasury zero-coupon yield with a maturity that approximates the expected term of the option.

There is no expected dividend yield.

No stock options were granted in 2022 and 2021. The weighted-average fair value per option granted was $20.59 during 2020.

Performance Awards

The Compensation Committee, subject to the terms and conditions of the Omnibus Plan, may grant performance share and/or performance unit awards (collectively "performance awards"). The grant date fair value of a performance award is the fair market value of the company's common stock on the date of grant. Such awards will be earned only if performance goals over performance periods established by or under the direction of the Compensation Committee are met. The performance goals and periods may vary from participant-to-participant, group-to-group, and time-to-time. The performance awards will be delivered in common stock at the end of the service period based on the company's actual performance compared to the target metric and may be from 0% to 185% of the initial award. Compensation expense is recognized using the graded vesting method over the three-year service period and is adjusted each period based on the current estimate of performance compared to the target metric.

Restricted Stock

Subject to the terms and conditions of the Omnibus Plan, the Compensation Committee may grant shares of restricted stock and/or restricted stock units. The grant date fair value of a restricted stock unit is the fair market value of the company's common stock on the date of grant. Restricted stock units are similar to restricted stock except that no shares are actually awarded to the participant on the date of grant. Shares of restricted stock and/or restricted stock units awarded under the Omnibus Plan may not be sold, transferred, pledged, assigned, or otherwise alienated or hypothecated until the end of the applicable period of restriction established by the Compensation Committee and specified in the award agreement (and in the case of restricted stock units until the date of delivery or other payment). Compensation expense is recognized on a straight-line basis as shares become free of forfeiture restrictions (i.e. vest) generally over a four-year period.

Non-Employee Director Awards

The company's Board shall set the amounts and types of equity awards that shall be granted to all non-employee directors on a periodic, nondiscriminatory basis pursuant to the Omnibus Plan, as well as any additional amounts, if any, to be awarded, also on a periodic, nondiscriminatory basis, based on each of the following: the number of committees of the Board on which a non-employee director serves, service of a non-employee director as the chair of a Committee of the Board, service of a non-employee director as Chairman of the Board or Lead Director, or the first selection or appointment of an individual to the Board as a non-employee director. Non-employee directors currently receive annual awards of restricted stock units valued at $175 thousand. Starting in 2022, the restricted stock units have a vesting period of one-year. All restricted stock units are settled in common stock following the director's separation from the Board.

Unless a non-employee director gives notice setting forth a different percentage, 50% of each director's annual retainer fee is deferred and converted into units based on the fair market value of the company's stock as of the date it was payable. A non-employee director can choose between one-year cliff vesting or keep the deferral until separation from the Board. After separation from the Board, the deferral will be converted into a share of company stock and distributed to the non-employee director as soon as practicable following such date.

Summary of Non-Vested Shares

The following information summarizes the changes in non-vested performance shares, performance units, restricted stock, and restricted stock units for 2022:

	Shares	Weighted-Average Grant Date Fair Value
Non-vested shares at December 31, 2021	949,875	$ 88.93
Granted	444,794	118.22
Vested	(383,820)	85.01
Forfeited	(83,187)	99.96
Non-vested shares at December 31, 2022	927,662	$ 103.61

The total fair value of shares vested during 2022, 2021, and 2020 was $47.3 million, $37.3 million, and $31.9 million, respectively.

As of December 31, 2022, there was $34.9 million of total unrecognized compensation cost related to non-vested shares and stock options which is expected to be recognized over a weighted-average period of 2.3 years.

12. Employee Benefit Plans

The company maintains an unfunded Arrow supplemental executive retirement plan ("SERP") under which the company will pay supplemental pension benefits to certain employees upon retirement. As of December 31, 2022, there were 11 current and 23 former corporate officers participating in this plan. The Board determines those employees who are eligible to participate in the Arrow SERP.

The Arrow SERP, as amended, provides for the pension benefits to be based on a percentage of average final compensation, based on years of participation in the Arrow SERP. The Arrow SERP permits early retirement, with payments at a reduced rate, based on age and years of service subject to a minimum retirement age of 55. Participants whose accrued rights under the Arrow SERP, prior to the 2002 amendment, which were adversely affected by the amendment, will continue to be entitled to such greater rights.

The company uses a December 31 measurement date for the Arrow SERP benefit plan. Pension information for the years ended December 31 is as follows:

	Arrow SERP	
(thousands)	**2022**	**2021**
Accumulated benefit obligation	$ 74,438	$ 97,568
Changes in projected benefit obligation:		
Projected benefit obligation at beginning of year	105,474	109,556
Service cost	3,296	3,514
Interest cost	2,782	2,575
Actuarial gain	(25,709)	(5,569)
Benefits paid	(4,724)	(4,602)
Plan amendments	3,029	—
Projected benefit obligation at end of year	84,148	105,474
Funded status	$ (84,148)	$ (105,474)
Amounts recognized in the company's consolidated balance sheets:		
Current liabilities	$ (5,084)	$ (4,927)
Noncurrent liabilities	(79,064)	(100,547)
Net liability at end of year	$ (84,148)	$ (105,474)
Components of net periodic pension cost:		
Service cost	$ 3,296	$ 3,514
Interest cost	2,782	2,575
Amortization of net loss	776	2,449
Net periodic pension cost	$ 6,854	$ 8,538
Weighted-average assumptions used to determine benefit obligation:		
Discount rate	5.00 %	2.70 %
Rate of compensation increase	5.00 %	5.00 %
Expected return on plan assets	N/A	N/A
Weighted-average assumptions used to determine net periodic pension cost:		
Discount rate	2.70 %	2.40 %
Rate of compensation increase	5.00 %	5.00 %
Expected return on plan assets	N/A	N/A

The amounts reported for net periodic pension cost and the respective benefit obligation amounts are dependent upon the actuarial assumptions used. The company reviews historical trends, future expectations, current market conditions, and external data to determine the assumptions. The discount rate represents the market rate for a high-quality corporate bond. The rate of compensation increase is determined by the company, based upon its long-term plans for such increases. The actuarial assumptions used to determine the net periodic pension cost are based upon the prior year's assumptions used to determine the benefit obligation.

Benefit payments are expected to be paid as follows:

(thousands)	Arrow SERP
2023	$ 5,084
2024	6,207
2025	6,116
2026	6,379
2027	6,268
2028-2032	34,856

As of December 31, 2022, the company had designated $108.6 million in assets to cover the ongoing costs of SERP payouts for both current and former executives. These assets were comprised primarily of life insurance policies and mutual fund investments, and $105.3 million of these investments were held in a rabbi trust. Contributions to the rabbi trust are irrevocable by the company. In the event of bankruptcy by the company, the assets held by the rabbi trust are subject to claims made by the company's creditors.

Other Comprehensive Income Items

In 2022, 2021, and 2020, actuarial gains (losses) of $19.5 million, $4.2 million, and $(4.3) million, respectively, were recognized in other comprehensive income, net of related taxes, related to the company's defined benefit plans. In 2022, prior service (costs) of $(2.3) million were recognized in other comprehensive income, net of taxes. In 2022, 2021, and 2020, a reclassification adjustment of comprehensive income was recognized, net of related taxes, as a result of being recognized in net periodic pension cost for an actuarial loss of $0.6 million, $1.9 million, and $1.2 million, respectively.

Accumulated other comprehensive income (loss) at December 31, 2022 and 2021 includes unrecognized actuarial gains (losses), net of related taxes, of $8.8 million and $(11.3) million, respectively, that have not yet been recognized in net periodic pension cost. Accumulated other comprehensive income (loss) at December 31, 2022 includes prior service (costs), net of related taxes, of $(2.3) million that have not yet been recognized in net periodic pension cost.

Defined Contribution Plans

The company has defined contribution plans for eligible employees, which qualify under Section 401(k) of the Internal Revenue Code. The company's contribution to the plans, which are based on a specified percentage of employee contributions, amounted to $20.3 million, $19.1 million, and $18.0 million in 2022, 2021, and 2020, respectively. Certain international subsidiaries maintain separate defined contribution plans for their employees and made contributions thereunder, which amounted to $22.1 million, $23.0 million, and $21.8 million in 2022, 2021, and 2020, respectively.

13. Lease Commitments

The company leases certain offices, distribution centers, and other property under non-cancellable operating leases expiring at various dates through 2033. Substantially all leases are classified as operating leases. The company recorded operating lease costs of $92.0 million, $97.4 million, and $89.1 million in 2022, 2021, and 2020, respectively.

The following amounts were recorded in the consolidated balance sheets at December 31:

(thousands)	2022	2021
Operating Leases		
Right-of-use asset	$ 277,554	$ 268,003
Lease liability - current	69,469	66,979
Lease liability - non-current	227,044	221,755
Total operating lease liabilities	$ 296,513	$ 288,734

Maturities of operating lease liabilities at December 31 were as follows:

(thousands)	2022
2023	$ 80,266
2024	63,484
2025	48,865
2026	38,577
2027	31,587
Thereafter	85,769
Total lease payments	348,548
Less: imputed interest	(52,035)
Total	$ 296,513

Other information pertaining to leases consists of the following for the year ended December 31:

(thousands)	2022	2021
Supplemental Cash Flow Information		
Cash paid for amounts included in the measurement of operating lease liabilities	$ 88,235	$ 90,968
Right-of-use assets obtained in exchange for operating lease obligations	104,210	57,175
Operating Lease Term and Discount Rate		
Weighted-average remaining lease term in years	6 years	6 years
Weighted-average discount rate	4.3 %	4.4 %

14. Contingencies

Environmental Matters

In connection with the purchase of Wyle Electronics ("Wyle") in August 2000, the company acquired certain of the then outstanding obligations of Wyle, including Wyle's indemnification obligations to the purchasers of its Wyle Laboratories division for environmental clean-up costs associated with any then existing contamination or violation of environmental regulations. Under the terms of the company's purchase of Wyle from the sellers, the sellers agreed to indemnify the company for certain costs associated with the Wyle environmental obligations, among other things. In 2012, the company entered into a settlement agreement with the sellers, pursuant to which the sellers paid $110.0 million and the company released the sellers from their indemnification obligation. As part of the settlement agreement the company accepted responsibility for any potential subsequent costs incurred related to the Wyle matters. The company is aware of two Wyle Laboratories facilities (in Huntsville, Alabama (the "Huntsville Site") and Norco, California (the "Norco Site")) at which contaminated soil and groundwater was identified and will require environmental remediation.

The company expects the liabilities associated with such ongoing remediation to be resolved over an extended period of time. Costs are recorded for environmental matters when it is probable that a liability has been incurred and the amount of the liability can be reasonably estimated. Accruals for environmental liabilities are adjusted periodically as facts and circumstances change, assessment and remediation efforts progress, or as additional technical or legal information becomes available. Environmental liabilities are difficult to assess and estimate due to various unknown factors such as the timing and extent of remediation, improvements in remediation technologies, and the extent to which environmental laws and regulations may change in the future. Accordingly, the company cannot presently estimate the ultimate potential costs related to these sites until such time as a substantial portion of the investigation at the sites is completed and remedial action plans are developed and, in some instances, implemented. To the extent that future environmental costs exceed amounts currently accrued by the company, net income would be adversely impacted and such impact could be material.

Accruals for environmental liabilities are included in “Accrued expenses” and “Other liabilities” in the company’s consolidated balance sheets. The company has determined that there is no amount within the environmental liability range that is a better estimate than any other amount, and therefore has recorded the accruals at the minimum amount of the ranges.

As successor-in-interest to Wyle, the company is the beneficiary of various Wyle insurance policies that covered liabilities arising out of operations at Norco and Huntsville. To date, the company has recovered approximately $47.0 million from certain insurance carriers relating to environmental clean-up matters at the Norco and Huntsville sites. The company filed suit against two insurers regarding liabilities arising out of operations at Huntsville and reached a confidential settlement with one of the insurers in 2020. The resolution of this matter against the remaining insurer will likely take several years. The company has not recorded a receivable for any potential future insurance recoveries related to the Norco and Huntsville environmental matters, as the realization of the claims for recovery are not deemed probable at this time.

Environmental Matters - Huntsville

In February 2015, the company and the Alabama Department of Environmental Management ("ADEM") finalized and executed a consent decree in connection with the Huntsville Site. Characterization of the extent of contaminated soil and groundwater is complete and has been approved by ADEM. Health-risk evaluations and a Corrective Action Development Plan were approved by ADEM in 2018, opening the way for pilot testing of on-site remediation in late 2019. Pilot testing is currently underway with annual application of bioremediation reagents, semi-annual groundwater monitoring, as well as data collection to direct future bioremediation injections. Approximately $8.2 million has been spent to date, and the company currently anticipates no additional investigative-related expenditures. The cost of subsequent remediation at the site is estimated to be between $2.3 million and $10.0 million.

Despite the amount of work undertaken and planned to date, the company is unable to estimate any potential costs in addition to those discussed above, because the complete scope of the work is not yet known, and, accordingly, the associated costs have yet to be determined.

Environmental Matters - Norco

In October 2003, the company entered into a consent decree with Wyle Laboratories and the California Department of Toxic Substance Control ("DTSC") in connection with the Norco Site. Subsequent to the decree, a Remedial Investigation Work Plan was approved by DTSC in April 2005, the required investigations were performed, and a final Remedial Investigation Report was submitted early in 2008. In 2008, a hydraulic containment system ("HCS") was installed as an interim remedial measure to capture and treat groundwater before it moves into the adjacent off-site area. In September 2013, the DTSC approved the final Remedial Action Plan ("RAP") for actions in five on-site areas and one off-site area. As of 2018, the remediation measures described in the RAP had been implemented and were being monitored. A Five Year Review ("FYR") of the HCS submitted to DTSC in December 2016 found that while significant progress was made in on-site and off-site groundwater remediation, contaminants were not sufficiently reduced in a key off-site area identified in the RAP. This exception triggered the need for additional off-site remediation that began in 2018 and was completed in mid-2019. Routine progress monitoring of groundwater and soil gas continue on-site and off-site.

Approximately $81.0 million was spent to date on remediation, project management, regulatory oversight, and investigative and feasibility study activities. The company currently estimates that remediation, project management, regulatory oversight, and investigative activities will continue and give rise to an additional $5.0 million to $17.0 million in costs. Project management and regulatory oversight include costs incurred by project consultants for project management and costs billed by DTSC to provide regulatory oversight.

Despite the amount of work undertaken and planned to date, the company is unable to estimate any potential costs in addition to those discussed above because the complete scope of the work under the RAP is not yet known, and, accordingly, the associated costs have yet to be determined.

Other

During 2021 and 2020, the company received $12.5 million and $2.4 million, respectively, in settlement funds in connection with claims filed against certain manufacturers of aluminum, tantalum, and film capacitors who allegedly colluded to fix the price of capacitors from 2001 through 2014. These amounts were recorded as a reduction to "Selling, general, and administrative expenses" in the company's consolidated statements of operations. The company has related ongoing disputes with other manufacturers and may receive additional funds in the future. The company is unable to estimate additional amounts that may be received in the future and as such has not recorded a receivable at this time.

From time to time, in the normal course of business, the company may become liable with respect to other pending and threatened litigation, environmental, regulatory, labor, product, and tax matters. While such matters are subject to inherent uncertainties, it is not currently anticipated that any such matters will materially impact the company's consolidated financial position, liquidity, or results of operations.

15. Segment and Geographic Information

The company is a global provider of products, services, and solutions to industrial and commercial users of electronic components and enterprise computing solutions. The company distributes electronic components to original equipment manufacturers and contract manufacturers through its global components business segment and provides enterprise computing solutions to VARs and MSPs through its global ECS business segment. As a result of the company's philosophy of maximizing operating efficiencies through the centralization of certain functions, selected fixed assets and related depreciation, as well as borrowings, are not directly attributable to the individual operating segments and are included in the corporate business segment.

Sales, by segment by geographic area, are as follows:

(thousands)	**2022**	**2021**	**2020**
Sales:			
Components:			
Americas	$ 9,592,547	$ 7,827,866	$ 6,183,119
EMEA	7,627,974	6,248,846	4,987,534
Asia/Pacific	11,567,482	12,280,805	9,332,034
Global components	$ 28,788,003	$ 26,357,517	$ 20,502,687
ECS:			
Americas	$ 4,847,027	$ 4,878,954	$ 5,109,372
EMEA	3,489,392	3,240,547	3,061,304
Global ECS	$ 8,336,419	$ 8,119,501	$ 8,170,676
Consolidated	$ 37,124,422	$ 34,477,018	$ 28,673,363

The company operates in more than 90 countries worldwide. The following tables set forth sales information where individual countries represent a material portion of the total. Sales to unaffiliated customers are based on the company location that maintains the customer relationship and transacts the external sale:

(thousands)	**2022**	**2021**	**2020**
Sales:			
China and Hong Kong	$ 6,339,883	$ 7,249,611	$ 5,846,907
Germany	4,715,806	4,007,381	4,390,782
Other	12,901,063	11,603,832	8,272,685
Total foreign	$ 23,956,752	$ 22,860,824	$ 18,510,374
United States	13,167,670	11,616,194	10,162,989
Total	$ 37,124,422	$ 34,477,018	$ 28,673,363

Operating income (loss), by segment, are as follows:

(thousands)	**2022**	**2021**	**2020**
Operating income (loss):			
Global components (a)	$ 1,961,125	$ 1,432,187	$ 780,333
Global ECS (b)	408,519	390,103	353,763
Corporate (c)	(301,150)	(265,468)	(239,585)
Consolidated	$ 2,068,494	$ 1,556,822	$ 894,511

(a) Global components operating income includes $12.5 million and $2.4 million related to proceeds from legal settlements for 2021 and 2020, respectively, (refer to Note 14) and $4.5 million in restructuring, integration, and other charges for 2021.

(b) Global ECS operating income for 2020 includes reserves and other adjustments of approximately $29.9 million primarily related to foreign tax and other loss contingencies. These reserves are principally associated with transactional taxes on activity from several prior years, not significant to any one year. Global ECS operating income for 2020 also includes $4.9 million in restructuring, integration, and other charges.

(c) Corporate operating income for the years 2022, 2021, and 2020 includes restructuring, integration, and other charges (credits) of $13.7 million, $10.9 million, and $15.6 million, respectively.

Total assets, by segment, at December 31 are as follows:

(thousands)	**2022**	**2021**
Total assets:		
Global components	$ 15,001,624	$ 12,953,154
Global ECS	6,124,184	5,953,525
Corporate	637,374	628,861
Consolidated	$ 21,763,182	$ 19,535,540

The following tables set forth long-lived asset information where individual countries represent a material portion of the total:

(thousands)	**2022**	**2021**
Long-lived assets:		
Netherlands	$ 93,390	$ 99,752
Other	315,871	294,287
Total foreign	$ 409,261	$ 394,039
United States	464,749	556,775
Total	$ 874,010	$ 950,814

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

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

The company's management, under the supervision and with the participation of the company's Chief Executive Officer and Chief Financial Officer, carried out an evaluation of the effectiveness of the design and operation of the company's disclosure controls and procedures as of December 31, 2022 (the "Evaluation"). Based upon the Evaluation, the company's Chief Executive Officer and Chief Financial Officer concluded that the company's disclosure controls and procedures (as defined in Rule 13a-15(e) of the Securities Exchange Act of 1934) are effective.

Management's Report on Internal Control Over Financial Reporting

The company's management is responsible for establishing and maintaining adequate "internal control over financial reporting" (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)). Management evaluates the effectiveness of the company's internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Management, under the supervision and with the participation of the company's Chief Executive Officer and Chief Financial Officer, assessed the effectiveness of the company's internal control over financial reporting as of December 31, 2022, and concluded that it is effective.

The company's independent registered public accounting firm, Ernst & Young LLP, has audited the effectiveness of the company's internal control over financial reporting as of December 31, 2022, as stated in their report, which is included herein.

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Arrow Electronics, Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Arrow Electronics, Inc.'s internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Arrow Electronics, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income (loss), equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes and schedule and our report dated February 9, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ Ernst & Young LLP

Denver, Colorado
February 9, 2023

Item 9B. Other Information.

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

See “Executive Officers” in Part I of this Annual Report on Form 10-K. In addition, the information set forth under the heading “Election of Directors” in the company's Proxy Statement, filed in connection with the 2023 Annual Meeting of Shareholders ("Proxy Statement"), is incorporated herein by reference. The company will provide disclosure of delinquent Section 16(a) reports, if any, in its Proxy Statement under a section titled "Delinquent Section 16(a) Reports", and such disclosure, if any, is incorporated herein by reference.

Information about the company's audit committee is set forth under the heading “The Board and its Committees” in the company's Proxy Statement, and is incorporated herein by reference.

Information about the company's code of ethics governing the Chief Executive Officer, Chief Financial Officer, and Principal Accounting Officer, known as the “Finance Code of Ethics,” as well as a code of ethics governing all employees, known as the “Worldwide Code of Business Conduct and Ethics,” is available free of charge on the company's website at investor.arrow.com in the Leadership and Governance section and is available in print to any shareholder upon request.

Information about the company's “Corporate Governance Guidelines” and written committee charters for the company's Audit Committee, Compensation Committee, and Corporate Governance Committee is available free of charge on the company's website at investor.arrow.com in the Leadership and Governance section and is available in print to any shareholder upon request.

Item 11. Executive Compensation.

The information required by this item concerning director and executive compensation is incorporated herein by reference to the sections entitled "Director Compensation", "Compensation Discussion and Analysis", "Compensation Risk Analysis", "Compensation of the Named Executive Officers", "Agreements and Potential Payouts Upon Termination or Change in Control", "CEO Pay Ratio", and "Pay Versus Performance" in the company's Proxy Statement.

The information required by this item pursuant to Item 407(e)(4) of Regulation S-K is incorporated herein by reference to the section entitled "Compensation Committee Interlocks and Insider Participation" in the company's Proxy Statement.

The information required by this item pursuant to Item 407(e)(5) of Regulation S-K is incorporated herein by reference to the section entitled "Report of the Compensation Committee" in the company's Proxy Statement.

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

The information required by this item pursuant to Item 403 of Regulation S-K is incorporated herein by reference to the section entitled "Certain Shareholders" in the company's Proxy Statement.

For the information required by Item 201(d) of Regulation S-K, refer to Item 5 in this report.

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

The information required by this item concerning related party transactions pursuant to Item 404 of Regulation S-K is incorporated herein by reference to the section entitled "Related Person Transactions" in the company's Proxy Statement.

The information required by this item concerning director independence pursuant to Item 407(a) of Regulation S-K is incorporated herein by reference to the section entitled "Independence" in the company's Proxy Statement.

Item 14. Principal Accounting Fees and Services.

The information required by this item is incorporated herein by reference to the section entitled "Principal Accounting Firm Fees" in the company's Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

(a) The following documents are filed as part of this report:

All other schedules are omitted since the required information is not present, or is not present in amounts sufficient to require submission of the schedule, or because the information required is included in the consolidated financial statements, including the notes thereto.

3 Exhibits.

See Index of Exhibits included on pages 79 - 82

ARROW ELECTRONICS, INC.
SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS

(thousands)	Balance at beginning of year	Charged to income	Other (a)	Write-down	Balance at end of year
Allowance for doubtful accounts:					
Year ended December 31, 2022	$ 75,901	$ 34,590	$ (1,476)	$ 15,618	$ 93,397
Year ended December 31, 2021	$ 92,792	$ 7,039	$ (1,963)	$ 21,967	$ 75,901
Year ended December 31, 2020	$ 69,433	$ 26,942	$ 47,521	$ 51,104	$ 92,792

(a) “Other” primarily includes the effect of fluctuations in foreign currencies and the allowance for doubtful accounts of the businesses acquired and disposed of by the company. For the year ended December 31, 2020, “Other” also includes the effect of adoption of ASU No. 2016-13 in the amount of $47.0 million.

INDEX OF EXHIBITS

Exhibit Number	Exhibit
3(a)	Restated Certificate of Incorporation of Arrow Electronics, Inc. (incorporated by reference to Exhibit 3(a) to the company's Annual Report on Form 10-K for the year ended December 31, 2020, Commission File No. 1-4482).
3(b)	Amended and Restated Bylaws of Arrow Electronics, Inc., dated December 14, 2022 (incorporated by reference to Exhibit 3.1 to the company's Current Report on Form 8-K dated December 19, 2022, Commission File No. 1-4482).
4(a)*	Description of Registrant's Securities
4(b)	Indenture, dated as of January 15, 1997, between the company and The Bank of New York Mellon (formerly, the Bank of Montreal Trust Company), as Trustee (incorporated by reference to Exhibit 4(b)(i) to the company's Annual Report on Form 10-K for the year ended December 31, 1996, Commission File No. 1-4482).
4(b)(i)	Officers' Certificate, as defined by the Indenture in 4(b) above, dated as of January 22, 1997, with respect to the company's $200,000,000 7% Senior Notes due 2007 and $200,000,000 7 1/2% Senior Debentures due 2027 (incorporated by reference to Exhibit 4(b)(ii) to the company's Annual Report on Form 10-K for the year ended December 31, 1996, Commission File No. 1-4482).
4(b)(ii)	Supplemental Indenture, dated as of February 20, 2013, between the company and The Bank of New York Mellon (as successor to the Bank of Montreal Trust Company), as trustee (incorporated by reference to Exhibit 4.1 to the company's Current Report on Form 8-K dated February 14, 2013, Commission File No. 1-4482).
4(b)(iii)	Supplemental Indenture, dated as of March 2, 2015, between the company and The Bank of New York Mellon (as successor to the Bank of Montreal Trust Company), as trustee (incorporated by reference to Exhibit 4(a)(x) to the company's Annual Report on Form 10-K for the year ended December 31, 2015, Commission File No. 1-4482).
4(c)	Indenture, dated as of June 1, 2017, between the company and US Bank National Association, as Trustee (incorporated by reference to Exhibit 4.4 to the company's Post-effective amendment No. 1 to the Form S-3 dated June 1, 2017, Commission File No. 1-4482).
4(c)(i)	First Supplemental Indenture, dated as of June 12, 2017, between the company and US Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the company's Current Report on Form 8-K dated June 12, 2017, Commission File No. 1-4482).
4(c)(ii)	Second Supplemental Indenture, dated as of September 8, 2017, between the company and US Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the company's Current Report on Form 8-K dated September 8, 2017, Commission File No. 1-4482).
4(c)(iii)	Third Supplemental Indenture, dated as of December 1, 2021, by and between the Company and US Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the company's Current Report on Form 8-K dated December 1, 2021, Commission File No. 1-4482).
10(a)	Amendment No. 34, dated as of September 20, 2022, to the Transfer and Administration Agreement dated as of March 21, 2001, reflecting original agreement and cumulative amendments (incorporated by reference to Exhibit 10.2 to the company's Quarterly Report on the Form 10-Q for the quarter ended October 2, 2022 Commission File No. 1-4482).

10(b)+	Management Insurance Program Agreement, dated as of September 16, 2015 (incorporated by reference to Exhibit 10(m) to the company's Annual Report on Form 10-K for the year ended December 31, 2015, Commission File No. 1-4482).
10(c)(i)+	Arrow Electronics, Inc. 2004 Omnibus Incentive Plan (as amended and restated through December 8, 2020) (incorporated by reference to Exhibit 10(d)(i) to the company's Annual Report on Form 10-K for the year ended December 31, 2020, Commission File No. 1-4482).
10(c)(ii)+	Form of Non-Qualified Stock Option Award Agreement for the Executive Committee under 10(d)(i) (as amended and restated through February 19, 2020) (incorporated by reference to Exhibit 10(d)(ii) to the company's Annual Report on Form 10-K for the year ended December 31, 2020, Commission File No. 1-4482).
10(c)(iii)+	Form of Performance Stock Unit Award Agreement for the Executive Committee under 10(d)(i) (as amended and restated through February 17, 2021) (incorporated by reference to Exhibit 10(b) to the company's Quarterly Report on Form 10-Q for the quarter ended April 3, 2021, Commission File No. 1-4482).
10(c)(iv)+	Form of Restricted Stock Unit Award Agreement for the Executive Committee under 10(d)(i) (as amended and restated through February 17, 2021) (incorporated by reference to Exhibit 10(c) to the company's Quarterly Report on Form 10-Q for the quarter ended April 3, 2021, Commission File No. 1-4482).
10(d)	Non-Employee Directors Deferred Compensation Plan, as amended and restated effective July 1, 2018 (incorporated by reference to Exhibit 10(e) to the company's Annual Report on Form 10-K for the year ended December 31, 2020, Commission File No. 1-4482).
10(d)(i)	Amendment to the Non-Employee Directors Deferred Compensation Plan, as amended on December 31, 2019, to the Non-Employee Directors Deferred Compensation Plan in 10(e) (incorporated by reference to Exhibit 10(e)(i) to the company's Annual Report on Form 10-K for the year ended December 31, 2019, Commission File No. 1-4482).
10(e)+	Arrow Electronics, Inc. Supplemental Executive Retirement Plan, as amended and restated effective January 1, 2009 (incorporated by reference to Exhibit 10(i) to the company's Annual Report on Form 10-K for the year ended December 31, 2009, Commission File No. 1-4482).
10(e)(i)+	Amendment letter to Sean J. Kerins, dated May 16, 2022, relating to the Arrow Electronics, Inc. Supplemental Executive Retirement Plan, as amended and restated effective January 1, 2009. (incorporated by reference to Exhibit 10(a) to the company's Quarterly Report on Form 10-Q for the quarter ended July 2, 2022, Commission File No. 1-4482).
10(f)+	Arrow Electronics, Inc. Executive Deferred Compensation Plan, as amended and restated effective July 1, 2018 (incorporated by reference to Exhibit 10(a) to the company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018, Commission File No. 1-4482).
10(f)(i)+	Amendment to the Executive Deferred Compensation Plan, as amended on December 31, 2019, to the Executive Deferred Compensation Plan in 10(g) (incorporated by reference to Exhibit 10(g)(i) to the company's Annual Report on Form 10-K for the year ended December 31, 2019, Commission File No. 1-4482).
10(g)(i)+	Arrow Electronics, Inc. Executive Severance Policy (incorporated by reference to Exhibit 10.1 to the company's Current Report on Form 8-K dated February 19, 2013, Commission File No. 1-4482).
10(g)(ii)+	Arrow Electronics, Inc. Executive Severance Policy, adopted on September 14, 2022, effective August 10, 2022, prospectively (incorporated by reference to Exhibit 10(e) to the company's Quarterly Report on Form 10-Q for the quarter ended October 1, 2022, Commission File No. 1-4482).

10(g)(iii)+	Form of the Arrow Electronics, Inc. Executive Severance Policy Participation Agreement (incorporated by reference to Exhibit 10.2 to the company's Current Report on Form 8-K dated February 19, 2013, Commission File No. 1-4482).
10(g)(iv)+	Form of Executive Change in Control Retention Agreement (incorporated by reference to Exhibit 10.3 to the company's Current Report on Form 8-K dated February 19, 2013, Commission File No. 1-4482).
10(g)(v)+	Form of Executive Change in Control Retention Agreement, adopted on September 14, 2022, effective August 10, 2022, prospectively (incorporated by reference to Exhibit 10(d) to the Company's Quarterly Report on Form 10-Q dated October 1, 2022, Commission File No. 1-4482).
10(g)(vi)	Grantor Trust Agreement, as amended and restated on November 11, 2003, by and between Arrow Electronics, Inc. and Wachovia Bank, N.A. (incorporated by reference to Exhibit 10(i)(xvii) to the company's Annual Report on Form 10-K for the year ended December 31, 2003, Commission File No. 1-4482).
10(g)(vii)	First Amendment, dated September 17, 2004, to the amended and restated Grantor Trust Agreement in 10(g)(vi) above by and between Arrow Electronics, Inc. and Wachovia Bank, N.A. (incorporated by reference to Exhibit 10(a) to the company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004, Commission File No. 1-4482).
10(g)(viii)	Paying Agency Agreement, dated November 11, 2003, by and between Arrow Electronics, Inc. and Wachovia Bank, N.A. (incorporated by reference to Exhibit 10(d)(iii) to the company's Annual Report on Form 10-K for the year ended December 31, 2003, Commission File No. 1-4482).
10(h)+	Offer of Employment from Arrow Electronics, Inc., to Rajesh K. Agrawal, dated August 11, 2022 (incorporated by reference to Exhibit 10(a) to the company's Quarterly Report on Form 10-Q for the quarter ended October 1, 2022, Commission File No. 1-4482).
10(i)	Fourth Amended and Restated Credit Agreement, dated as of September 9, 2021, among Arrow Electronics, Inc. and certain of its subsidiaries, as borrowers, the lenders from time to time parties thereto, JPMorgan Chase Bank, N.A., as administrative agent and Bank of America, N.A., The Bank of Nova Scotia, BNP Paribas, ING Bank N.V., Dublin Branch, MUFG Bank, Ltd., Mizuho Bank, Ltd., and Sumitomo Mitsui Banking Corporation as syndication agents (incorporated by reference to Exhibit 10.1 to the company’s Current Report on Form 8-K dated September 10, 2021, Commission File No. 1-4482).
10(j)(i)	Commercial Paper Private Placement Agreement, dated as of November 9, 1999, among Arrow Electronics, Inc., as issuer, and Chase Securities Inc., Bank of America Securities LLC, Goldman, Sachs & Co., and Morgan Stanley & Co. Incorporated as placement agents (incorporated by reference to Exhibit 10(g) to the company's Annual Report on Form 10-K for the year ended December 31, 1999, Commission File No. 1-4482).
10(j)(ii)	Amendment No. 1, dated as of October 11, 2011, to Dealer Agreement dated as of November 9, 1999, between Arrow Electronics, Inc. and J.P. Morgan Securities LLC (f.k.a. Chase Securities Inc.), Merrill Lynch, Pierce, Fenner & Smith Incorporated (f.k.a. Bank of America Securities LLC), Goldman, Sachs & Co. and Morgan Stanley & Co. LLC (f.k.a. Morgan Stanley & Co. Incorporated) (incorporated by reference to Exhibit 10(n)(ii) to the company's Annual Report on Form 10-K for the year ended December 31, 2011, Commission File No. 1-4482).
10(j)(iii)	Amendment No. 2, dated as of October 20, 2014, to Dealer Agreement dated as of November 9, 1999, between Goldman, Sachs & Co., J.P. Morgan Securities LLC (f.k.a. Chase Securities Inc.), Morgan Stanley & Co. LLC (f.k.a. Morgan Stanley & Co. Incorporated), Merrill Lynch, Pierce, Fenner & Smith Incorporated (f.k.a. Bank of America Securities LLC) and Arrow Electronics, Inc., as amended by Amendment No. 1 (incorporated by reference to Exhibit 10(a) to the company's Quarterly Report on Form 10-Q for the quarter ended September 27, 2014, Commission File No. 1-4482).

10(j)(iv)	Amendment No. 3, dated as of January 6, 2016, to Dealer Agreement dated as of November 9, 1999, between Goldman, Sachs & Co., J.P. Morgan Securities LLC (f.k.a. Chase Securities Inc.), Morgan Stanley & Co. LLC (f.k.a. Morgan Stanley & Co. Incorporated), Merrill Lynch, Pierce, Fenner & Smith Incorporated (f.k.a. Bank of America Securities LLC) and Arrow Electronics, Inc., as amended by Amendment No. 1 and Amendment No. 2. (incorporated by reference to Exhibit 10(b) to the company's Quarterly Report on Form 10-Q for the quarter ended April 2, 2016, Commission File No. 1-4482).
10(k)	Issuing and Paying Agency Agreement, dated as of October 20, 2014, by and between Arrow Electronics, Inc. and BNP Paribas (incorporated by reference to Exhibit 10(b) to the company's Quarterly Report on Form 10-Q for the quarter ended September 27, 2014, Commission File No. 1-4482).
10(l)(i)	English Receivables Sales Agreement dated as of January 27, 2020, between Arrow Electronics (UK) Limited, as the seller, and Arrow EMEA Funding Corp B.V., as the buyer (incorporated by reference to Exhibit 10.1 to the company's Current Report on Form 8-K dated January 30, 2020, Commission File No. 1-4482).
10(l)(ii)*	Second Amendment to English Receivables Sales Agreement dated as of December 12, 2022, between Arrow Electronics (UK) Limited, as the seller and servicer, Arrow EMEA Funding Corp B.V., as the buyer and BNP Paribas as the administrative agent.
10(l)(iii)	German Receivables Sale Agreement dated as of January 27, 2020, between Arrow Central Europe GmbH, as the seller, and Arrow EMEA Funding Corp B.V., as the buyer (incorporated by reference to Exhibit 10.2 to the company's Current Report on Form 8-K dated January 30, 2020, Commission File No. 1-4482).
10(l)(iv)	First Amendment to German Receivables Sale Agreement, dated as of December 23, 2021, between Arrow Central Europe GmbH, as the seller and servicer, Arrow EMEA Funding Corp B.V., as the buyer and BNP Paribas, administrative agent .(incorporated by reference to Exhibit 10(m)(iii) to the company's Annual Report on Form 10-K for the year ended December 31, 2021, Commission File No. 1-4482).
10(l)(v)*	Second Amendment to German Receivables Sale Agreement, dated as of December 12, 2022, between Arrow Central Europe GmbH, as the seller and servicer, Arrow EMEA Funding Corp B.V., as the buyer and BNP Paribas, administrative agent.
10(l)(vi)	Omnibus Deeds of Amendment (dated December 23, 2021 and September 20, 2022), by and among Arrow EMEA Funding Corp B.V., as the SPV; BNP Paribas, as administrative agent, a purchaser agent and as a committed purchaser; Matchpoint Finance PLC, as a conduit purchaser; ING Belgium S.A./N.V., as a purchaser agent; Mont Blanc Capital Corp, as a committed purchaser and conduit purchaser; Arrow Electronics (UK) Limited, as agent servicer, an SPV servicer and an originator; Arrow Central Europe GMBH, as an agent servicer, an SPV servicer and an originator; Arrow Electronics Inc.; Arrow Electronics FC B.V., as subordinated lender; U.S.Bank Trustees Limited, as security trustee; and Elavon Financial Services DAC, as paying agent, together with the Annexes thereto (incorporated by reference to Exhibit 10.1 to the company’s Current Report on Form 8-K dated September 22, 2022, Commission File No. 1-4482).
10(m)*+	Form of Indemnification Agreement between Arrow Electronics, Inc., and each of its directors and officers.
21*	Subsidiary Listing.
23*	Consent of Independent Registered Public Accounting Firm.
31(i)(A)*	Certification of Chief Executive Officer pursuant to Rule 13A-14(a)/15d-14(a) of the Securities and Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31(i)(B)*	Certification of Chief Financial Officer pursuant to Rule 13A-14(a)/15d-14(a) of the Securities and Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.

32(i)**	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32(ii)**	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101*	Inline XBRL Document Set for the consolidated financial statements and accompanying notes in Part II, Item 8, "Financial Statements and Supplementary Data" of this Annual Report on Form 10-K.
104*	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

* : Filed herewith.
** : Furnished herewith.
\+ : Indicates a management contract or compensatory plan or arrangement.

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.

ARROW ELECTRONICS, INC.

Date: February 9, 2023

By: /s/ Carine Jean-Claude

Carine Jean-Claude

Senior Vice President, Chief Legal Officer and Secretary

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

	Signature	Title	Date
By:	/s/ Sean J. Kerins Sean J. Kerins	President, Chief Executive Officer, and Director *(principal executive officer)*	February 9, 2023
By:	/s/ Rajesh K. Agrawal Rajesh K. Agrawal	Senior Vice President and Chief Financial Officer *(principal financial officer)*	February 9, 2023
By:	/s/ Richard A. Seidlitz Richard A. Seidlitz	Vice President and Corporate Controller *(principal accounting officer)*	February 9, 2023
By:	/s/ Michael J. Long Michael J. Long	Executive Chairman and Director	February 9, 2023
By:	/s/ Barry W. Perry Barry W. Perry	Lead Independent Director	February 9, 2023
By:	/s/ William F. Austen William F. Austen	Director	February 9, 2023
By:	/s/ Fabian Garcia Fabian Garcia	Director	February 9, 2023
By:	/s/ Steven H. Gunby Steven H. Gunby	Director	February 9, 2023
By:	/s/ Gail E. Hamilton Gail E. Hamilton	Director	February 9, 2023
By:	/s/ Andrew C. Kerin Andrew C. Kerin	Director	February 9, 2023
By:	/s/ Laurel J. Krzeminski Laurel J. Krzeminski	Director	February 9, 2023
By:	/s/ Carol Lowe Carol Lowe	Director	February 9, 2023
By:	/s/ Stephen C. Patrick Stephen C. Patrick	Director	February 9, 2023
By:	/s/ Gerry P. Smith Gerry P. Smith	Director	February 9, 2023