

**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 May 31, 2019

Commission file number 0-11330

Paychex, Inc.

911 Panorama Trail South
Rochester, New York 14625-2396
(585) 385-6666
A Delaware Corporation

IRS Employer Identification Number: 16-1124166

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, \$0.01 par value | PAYX | Nasdaq Global Select Market |

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 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 has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

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

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

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

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

As of November 30, 2018, the last business day of the most recently completed second fiscal quarter, shares held by non-affiliates of the registrant had an aggregate market value of \$22,652,311,624 based on the closing price reported for such date on the Nasdaq Global Select Market.

As of June 30, 2019, 359,345,511 shares of the registrant's common stock, \$.01 par value, were outstanding.

Documents Incorporated by Reference

Portions of the registrant's definitive proxy statement to be issued in connection with its Annual Meeting of Stockholders to be held on or about October 17, 2019, to the extent not set forth herein, are incorporated by reference into Part III, Items 10 through 14, inclusive

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PART I

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS PURSUANT TO THE UNITED STATES PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995

Certain written and oral statements made by management of Paychex, Inc. and its wholly owned subsidiaries (“we,” “our,” “us,” “Paychex,” or the “Company”) may constitute “forward-looking statements” within the meaning of the safe harbor provisions of the United States (“U.S.”) Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by such words and phrases as “we expect,” “expected to,” “estimates,” “estimated,” “overview,” “current outlook,” “we look forward to,” “would equate to,” “projects,” “projections,” “projected,” “projected to be,” “anticipates,” “anticipated,” “we believe,” “believes,” “could be,” “targeting,” and other similar words or phrases. Examples of forward-looking statements include, among others, statements we make regarding operating performance, events, or developments that we expect or anticipate will occur in the future, including statements relating to our outlook, revenue growth, earnings, earnings-per-share growth, or similar projections.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations, and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy, and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks, and changes in circumstances that are difficult to predict, many of which are outside our control. Our actual results and financial conditions may differ materially from those indicated in the forward-looking statements. Therefore, you should not place undue reliance upon any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the following:

- changes in governmental regulations and policies;
- our ability to comply with U.S. and foreign laws and regulations;
- our ability to keep pace with changes in technology and to provide timely enhancements to our products and services;
- our compliance with data privacy laws and regulations;
- the possibility of cyberattacks, security vulnerabilities and Internet disruptions, including breaches of data security and privacy leaks, data loss and business interruptions;
- the possibility of failure of our operating facilities, computer systems, or communication systems during a catastrophic event;
- the failure of third-party service providers to perform their functions;
- the possibility that we may be subject to additional risks related to our co-employment relationship with our professional employer organization (“PEO”);
- changes in health insurance and workers’ compensation insurance rates and underlying claim trends;
- our clients’ failure to reimburse us for payments made by us on their behalf;
- the effect of changes in government regulations mandating the amount of tax withheld or the timing of remittances;
- volatility in the political and economic environment;
- risks related to acquisitions and the integration of the businesses we acquire, including integrating Oasis Outsourcing Group Holdings, L.P.’s (“Oasis”) business with ours;
- our failure to comply with covenants in our debt agreements;
- changes in the availability of qualified people, including management, technical, compliance and sales personnel;
- our failure to protect our intellectual property rights;

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- the possible effects of negative publicity on our reputation and the value of our brand; and
- potential outcomes related to pending or future litigation matters.

Any of these factors, as well as such other factors as discussed in Part I, Item 1A, “Risk Factors” and throughout Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of this Annual Report on Form 10-K (“Form 10-K”), as well as in our periodic filings with the Securities and Exchange Commission (the “SEC”), could cause our actual results to differ materially from our anticipated results. The information provided in this Form 10-K is based upon the facts and circumstances known as of the date of this report, and any forward-looking statements made by us in this Form 10-K speak only as of the date on which they are made. Except as required by law, we undertake no obligation to update these forward-looking statements after the date of filing this Form 10-K with the SEC to reflect events or circumstances after such date, or to reflect the occurrence of unanticipated events.

We have made available our investor presentation regarding the financial results for the fiscal year ended May 31, 2019. Please visit Paychex's Investor Relations page on our website at <http://www.paychex.com/investors> to view the presentation. We intend to make future investor presentations available exclusively through our Investor Relations page .

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Item 1. Business

Incorporated in Delaware in 1979, we are a leading provider of integrated human capital management (“HCM”) solutions for payroll, benefits, human resource (“HR”), and insurance services for small- to medium-sized businesses. As of May 31, 2019, we served approximately 670,000 payroll and PEO clients. We maintain our corporate headquarters in Rochester, New York, and serve clients throughout the U.S. and Europe. We report our results of operations and financial condition as one business segment. Our fiscal year ends May 31st.

Company Strategy

Our mission is to be the leading provider of HCM solutions for payroll, benefits, HR, and insurance services for small- to medium-sized businesses by being an essential partner with America’s businesses. We believe that success in this mission will lead to strong, long-term financial performance. Our business strategy focuses on the following:

- personalized, technology-enabled service ;
- industry-leading, integrated technology;
- providing a comprehensive suite of value-added HCM services;
- solid sales execution;
- continued service penetration; and
- engaging in strategic acquisitions.

We do this through the Power of Simplicity. Our industry-leading technology combines with our personalized, technology-enabled service to make payroll, benefits, and HR administration simple for our clients.

Our Clients

The target market for our integrated HCM solutions is the small- to mid-market space. Within this space, we serve a diverse base of small- to medium-sized clients operating in a broad range of industries located throughout the U.S. and Europe. Our clients have the option to select the HCM modules they need with the ability to easily add services as they grow. They can also opt for our comprehensive HR and payroll outsourcing solutions, which include our HR Solutions, an Administrative Services Organization (“ASO”) and our PEO services. This flexibility allows our clients to define the solution that best meets their needs. We utilize service agreements and arrangements with clients that are generally terminable by the client at any time or upon relatively short notice. For the fiscal year ended May 31, 2019 (“fiscal 2019”), client retention was over 82% of our beginning client base for the fiscal year, in line with our historic best retention rate.

We support our small-business clients, reducing the complexity and risk of running their own payroll, while ensuring greater accuracy with up-to-date tax rates and regulatory information. We simplify their payroll with a combination of our dynamic products and customer service options for a quick and easy payday. Clients can choose to have our service team handle everything for them, or can process payroll themselves utilizing our robust Paychex Flex[®] processing platform or SurePayroll[®] online applications. Both products are cloud-based software-as-a-service (“SaaS”) solutions that allow users to process payroll when they want, how they want, and on any device (desktop, tablet, and mobile phone).

With an environment of increasing regulations, the need for HR outsourcing services is moving down-market. Our small-business clients benefit from our time and attendance products, which allow them to accurately and efficiently manage the gathering and recording of employee hours worked. Our advanced suite of time and attendance products, including web and mobile tools, assist companies with the scheduling, tracking, and reporting of time. In addition, our small-market clients can choose one of our comprehensive HR and payroll outsourcing services, which include ASO and PEO services, and participate in our benefits offerings, which include our insurance and retirement services. Our insurance services simplify the insurance process to make it easy to find plans with the features and affordability to meet the client’s needs. Our retirement services product line offers many plan design options to meet the client’s requirements, as well as investment options.

Our mid-market clients have more complex payroll and employee benefit needs. Our mid-market clients are serviced through our Paychex Flex Enterprise solution, which offers an integrated suite of HCM solutions on the Paychex Flex platform, or through our legacy platform. Most new clients are sold on the Paychex Flex platform. Clients using Paychex Flex Enterprise are offered a SaaS solution that integrates payroll processing with HR management, employee benefits administration, time and labor management, applicant tracking, and onboarding solutions. Paychex Flex Enterprise allows mid-market clients to choose the services and software they need to meet the complexity of their business and all integrated into one HCM solution.

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Description of Services

We offer a comprehensive portfolio of HCM services and products that allow our clients to meet their diverse payroll and HR needs. Clients can select services on an à la carte basis or as part of various product bundles. Our offerings often leverage the information gathered in our base payroll processing service, allowing us to provide comprehensive outsourcing services covering the HCM spectrum.

Our portfolio of HCM and employee benefit-related services are comprised of the following:

Management Solutions:

- **Payroll processing services:** Our payroll processing services include the calculation, preparation, and delivery of employee payroll checks; production of internal accounting records and management reports; preparation of federal, state, and local payroll tax returns; and collection and remittance of clients' payroll obligations.
- **Payroll tax administration services:** Payroll tax administration services provide for accurate preparation and timely filing of quarterly and year-end tax returns, as well as the electronic transfer of funds to the applicable federal, state, and local tax or regulatory agencies. In connection with these services, we electronically collect payroll taxes from clients' bank accounts, typically on payday, prepare and file the applicable tax returns, and remit taxes to the applicable tax or regulatory agencies on the respective due dates. These taxes are typically paid between one and 30 days after receipt of collections from clients, with some items extending up to 90 days. We handle regulatory correspondence, amendments, and penalty and interest disputes.
- **Employee payment services:** Our employee payment services provide an employer the option of paying their employees by direct deposit, payroll debit card, a check drawn on a Paychex account (Readychex®), or a check drawn on the employer's account and electronically signed by us. For each of the first three methods, we electronically collect net payroll from the clients' bank accounts, typically one business day before payday, and provide payment to the employees on payday. Same day ACH functionality is also available for clients using direct deposit, allowing employers the flexibility to pay employees via direct deposit on the same day they initiate payroll. Our Readychex service provides a cost-effective solution that offers the benefit of convenient, one-step payroll account reconciliation for employers.
- **Regulatory compliance services:** We offer new-hire reporting services, which enable clients to comply with federal and state requirements to report information on newly hired employees. This information aids the government in enforcing child support orders and minimizes fraudulent unemployment and workers' compensation insurance claims. Our garnishment processing service provides deductions from employees' pay, forwards payments to third-party agencies, including those that require electronic payments, and tracks the obligations to fulfillment. These services enable employers to comply with legal requirements and reduce the risk of penalties. We also offer comprehensive solutions to help employers and employees with certain mandates under the Affordable Care Act ("ACA"), which sets forth specific coverage and reporting requirements that employers must meet.
- **HR Solutions (ASO):** Our ASO offers businesses a combined package that includes payroll, employer compliance, HR and employee benefits administration, risk management outsourcing, and the on-site availability of a professionally trained HR representative, among other services. Paychex HR Essentials is an ASO product that provides support to our clients over the phone or online to help manage employee-related topics.
- **Retirement services administration:** Our retirement services product line offers a variety of options to clients, including 401(k) plans, 401(k) SIMPLE plans, SIMPLE IRAs, 401(k) plans with safe harbor provisions, owner-only 401(k) plans, profit sharing plans, and money purchase plans. These services provide plan implementation, ongoing compliance with government regulations, employee and employer reporting, participant and employer online access, electronic funds transfer, and other administrative services. Auto enrollment is an optional plan feature that allows employers to automatically enroll employees in their company's 401(k) plan and increase overall plan participation. Clients have the ability to choose from a group of pre-defined fund selections or to customize their investment options within their plan. We are the largest 401(k) recordkeeper for small businesses in the U.S. Our large-market retirement services clients include relationships with financial advisors.

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- **HR administration services:** We offer cloud-based HR administration software for employee benefits management and administration, time and attendance solutions, recruiting, and onboarding. Paychex HR Online offers powerful tools for managing employee personnel information, performance management, HR compliance and reporting. Our Learning Management solution compliments our performance management. When combined with our workflow and approval engine , we offer clients the flexibility to capture ongoing performance feedback, recommend and enroll employees in specific training courses, and leverage automated workflows to track progress and approve compensation changes tied to performance. Our benefits administration modules manage the employee-benefit enrollment process for both open-enrollment and life events. Our time and attendance products, including our integrated Flex Time software, provide timekeeping, scheduling, and workforce analytics. Our extensive self-service capabilities provide significant efficiencies for both the company administrator and their employees. These services allow the employer to handle multiple payroll scenarios, improving productivity, accuracy, and reliability in the payroll process. The InVision™ IRIS Time Clock, a biometric clock that scans the iris, provides fast and accurate time capture. The applicant tracking suite provides technology that streamlines, simplifies, and drives the applicant workflow and onboarding process for companies of all sizes.
- **Other HR services and products:** We offer the outsourcing of plan administration under section 125 of the Internal Revenue Code, allowing employees to use pre-tax dollars to pay for certain health insurance benefits and health and dependent care expenses not covered by insurance. All required implementation, administration, compliance, claims processing and reimbursement, and coverage tests are provided with these services. We offer state unemployment insurance services, which provide clients with prompt processing for all claims, appeals, determinations, change statements, and requests for separation documents.
- **Business services:** We offer various business services to small- to medium-sized businesses . Our wholly owned subsidiary, Paychex Advance, LLC, provides a portfolio of services to the temporary staffing industry, including payroll funding (via the purchase of accounts receivable) and outsourcing services, which include payroll processing, invoicing, and tax preparation. Paychex Promise, a subscription-based service , offers protection against payroll interruptions and solutions to address routine challenges of running a successful business. The primary offering is payroll protection, which extends the collection of payroll funds from a client’s bank account by seven days without interruption of service or charges for insufficient funds. In addition, through partnerships with third-party providers, we provide clients opportunities for services such as payment processing services, financial fitness programs, and a small-business loan resource center .

PEO and Insurance Services:

- **PEO services :** Our licensed subsidiaries, Paychex Business Solutions, LLC, HR Outsourcing Holdings, Inc. (“ HROi ”), and Oasis offer businesses a combined package that includes payroll, employer compliance, HR and employee benefits administration, risk management outsourcing, and the on-site availability of a professionally trained HR representative, among other services. What differentiates our PEO services from our ASO services is that we serve as a co-employer of our clients’ employees, offer health care coverage to PEO client employees, and assume the risks and rewards of workers’ compensation insurance and certain benefit insurance offerings. We are certified under the Small Business Efficiency Act to provide PEO services.
- **Insurance services:** Our licensed insurance agency, Paychex Insurance Agency, Inc., provides insurance through a variety of carriers, allowing employers to expand their employee benefit offerings at an affordable cost. Insurance offerings include property and casualty coverage such as workers’ compensation, business-owner policies, commercial auto, and health and benefits coverage, including health, dental, vision, and life. Our insurance services simplify the insurance process to make it easy to find plans with the features and affordability to meet the client’s needs. With access to numerous top national and regional insurance carriers, our professional insurance agents have access to a wide selection of plans from which they can best match the insurance needs of small businesses. Additionally, clients have the option to integrate their insurance plans with Paychex payroll processing for easy, accurate plan administration.

Technology and Service Platform

Paychex Flex is our proprietary HCM SaaS platform through which we provide an integrated product suite that covers the employee life cycle from recruiting and hiring to retirement. Paychex Flex streamlines workforce management through innovative technology and flexible choice of service. It uses a single cloud-based platform, with single client and employee records and single sign-on, including self-service options and mobility applications. The HCM product suite integrates recruiting and applicant tracking, employee onboarding, payroll, employee benefits and HR administration, time and attendance, and retirement services. In addition, Paychex Flex presents function-focused analytics throughout the platform, assisting HR leaders with making more informed business decisions. Paychex Flex also provides technology-enabled service, with options that include self-service, a 24/7 dedicated service center, an individual payroll specialist, and integrated service via a multi-product service center. In addition, mid-market clients can utilize a relationship manager for more personalized service. This flexible platform services our small- to medium-sized clients, and a portion of our PEO business. Our platform is backed by self-service capabilities that empower client employees to access their benefits and complete tasks from any location and on any device. These self-service capabilities allow for greater convenience for client employees and greater productivity for our clients.

We continue to invest in Paychex Flex, making significant enhancements designed to simplify the complexity of HR administration. The latest enhancements include HR Center with performance and learning management, workflow approvals, and enhanced real-time analytics; benefits management enhancements with a refreshed enrollment experience for health and benefits and retirement; and increased options through the use of chatbots and artificial intelligence.

The integration of flexible service options and leading-edge technology allows us to meet our clients' diverse needs by providing them with information and products when, where, and how they want it. Our Paychex mobile applications add greater value and convenience for our clients and their employees by allowing them instant access and increased productivity. Paychex Flex uses a mobile-first design throughout our HCM suite, which allows full functionality of all application components, regardless of device or screen size. Enabling our clients and their employees to have full access to our products offers diverse capabilities and flexibility for both the employer and employee.

Sales and Marketing

We market and sell our services primarily through our direct sales force based in the metropolitan markets we serve. Our direct sales force includes sales representatives who have defined geographical territories and specialize within our portfolio of services. Our sales representatives are also supported by marketing, advertising, public relations, trade shows, and telemarketing programs. We utilize a virtual sales force to service geographical areas where we may not have a local presence, cover inbound leads for certain small-business clients, and for products for which we do not have a local sales force.

In addition to our direct selling and marketing efforts, we utilize other indirect sales channels such as our relationships with existing clients, certified public accountants ("CPAs"), and banks for new client referrals. Approximately 50% of our new small-market payroll clients (excluding business acquisitions) come from these referral sources. Our dedicated business development group drives sales through banking, national associations, and franchise channels. We also utilize digital marketing as a means to market our services.

We have a long-standing partnership with the American Institute of Certified Public Accountants ("AICPA") as the preferred payroll provider for its AICPA Business Solutions™ Program. Our current partnership agreement with the AICPA is in place through September 2021. We also partner with numerous state CPA society organizations.

Our website is available at www.paychex.com. It is a cost-efficient channel that serves as a source of leads and new sales, while complementing the efforts of our direct and virtual sales forces. This online channel allows us to market to existing and prospective clients that want to learn more about our products and services. The website offers information about our core lines of business: payroll (www.paychex.com/payroll), human resources (www.paychex.com/human-resources), benefits (www.paychex.com/employee-benefits), and insurance (www.paychex.com/business-insurance).

Paychex also builds on its reputation as an expert in the HCM industry by providing education and assistance to clients and other interested parties. We provide free webinars, white papers, and other information on our website to aid existing and prospective clients with the impact of regulatory change as well as HR and business best practices. Paychex WORX website, available at www.paychex.com/worx, is a digital destination for insightful resources useful for businesses at every stage, from entrepreneur to enterprise. Paychex WORX highlights our expertise, and ability to help businesses of all sizes with a wide range of HR and financial information for current clients and prospects alike.

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We also track current regulatory issues that impact the business community and provide regulatory updates. We issue small business trend reports through our Paychex | IHS Markit Small Business Employment Watch. Our Paychex Accountant Knowledge Center is a free online resource available through our website that brings valuable information and time-saving online tools to accounting professionals. Through the Paychex Flex online platform, AccountantHQ offers access to authorized client payroll and HR data and key account contacts, along with an extensive accountant resource library. AccountantHQ drives efficiency by putting accountants in the best position possible to easily access critical client payroll and HR data, as well as powerful reporting tools.

Markets and Competition

We remain focused on servicing small- to medium-sized businesses based upon the growth potential that we believe exists in the markets we serve. Our internal database source indicates that there are over 10 million addressable businesses in the geographic markets that we currently serve.

The market for HCM services is highly competitive and fragmented. We have one primary national competitor and we also compete with other national, international, regional, local, and online service providers. In addition to traditional payroll processing and HR service providers, we compete with in-house payroll and HR systems and departments. Payroll and HR systems and software are sold by many vendors. Our products also compete with a variety of providers of HR services, such as retirement services companies, insurance companies, HR and benefits consulting firms, and national and regional PEOs.

Competition in the payroll processing and HR services industry is primarily based on service responsiveness, product quality and reputation, including ease of use and accessibility of technology, breadth of service and product offerings, and price. We believe we are competitive in each of these areas. We believe that our leading-edge technology and mobility applications, combined with personalized service provided by industry professionals, distinguishes us from our competitors.

Software Maintenance and Development

The ever-changing mandates of federal, state, and local tax and regulatory agencies require us to regularly update our proprietary software to provide payroll and HR services to our clients. We are continually engaged in developing enhancements to and maintaining our various software platforms to meet the changing requirements of our clients and the marketplace. We continue to enhance our SaaS solutions and mobility applications to offer our users an integrated and unified experience. Continued enhancement of the client and client employee experience is important to our future success.

Employees

We believe our ability to attract and retain qualified employees in all areas of our business is important to our future success and growth. As of May 31, 2019, we employed approximately 15,600 people, of which approximately 15,300 people were employed on a full-time basis. None of our employees were covered by collective bargaining agreements.

Intellectual Property

We own or license and use a number of trademarks, trade names, copyrights, service marks, trade secrets, computer programs and software, and other intellectual property rights. Taken as a whole, our intellectual property rights are material to the conduct of our business. Where it is determined to be appropriate, we take measures to protect our intellectual property rights, including, but not limited to, confidentiality/non-disclosure agreements or policies with employees, vendors, and others; license agreements with licensees and licensors of intellectual property; and registration of certain trademarks. We believe that the “Paychex” name, trademark, and logo are of material importance to us.

Seasonality

There is no significant seasonality to our business. However, during our third fiscal quarter, which ends in February, the number of new payroll clients, new retirement services clients, and new worksite employees associated with our HR Solutions ASO and PEO businesses tends to be higher than during the rest of the fiscal year, primarily because many new clients prefer to start using our services at the beginning of a calendar year. In addition, calendar year-end transaction processing and client funds activity are traditionally higher during our third fiscal quarter due to clients paying year-end bonuses, clients requesting additional year-end services, and the preparation and delivery of end-of year reporting requirements.

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Available Information

We are subject to the informational and reporting requirements of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Therefore, we file periodic reports, proxy statements, and other information with the SEC. The SEC maintains a website (www.sec.gov) that includes our reports, proxy statements, and other information.

Our corporate website, www.paychex.com, provides materials for investors and information about our services. Our Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and other SEC filings, as well as any amendments to such reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, are made available, free of charge, on our website as soon as reasonably practicable after such reports have been filed with or furnished to the SEC. The information on our website is not incorporated by reference into our Form 10-K. Also, copies of our Annual Report to Stockholders and Proxy Statement, to be issued in connection with our 2019 Annual Meeting of Stockholders, will be made available, free of charge, upon written request submitted to Paychex, Inc., c/o Corporate Secretary, 911 Panorama Trail South, Rochester, New York 14625-2396.

Item 1 A . Risk Factors

Our future results of operations are subject to a number of risks and uncertainties. These risks and uncertainties could cause actual results to differ materially from historical and current results, and from our projections. The risk factors described below represent our current view of some of the most important risks facing our business and are important to understanding our business. The risks described below are not the only risks we face. Additional factors not presently known to us or that we currently deem to be immaterial also may adversely affect, possibly to a material extent, our business, cash flows, financial condition, or results of operations in future periods. In addition, you should refer to the cautionary note regarding forward-looking statements at the beginning of Part I of this Form 10-K.

Our business, services, and financial condition may be adversely impacted by changes in government regulations and policies . Many of our services, particularly payroll tax administration services and employee benefit plan administration services, are designed according to government regulations that often change. Changes in regulations could affect the extent and type of benefits employers are required, or may choose, to provide employees or the amount and type of taxes employers and employees are required to pay. Such changes could reduce or eliminate the need for some of our services and substantially decrease our revenue. Added requirements could also increase our cost of doing business. Failure to educate and assist our clients regarding new or revised legislation that impacts them could have an adverse impact on our reputation. Failure by us to modify our services in a timely fashion in response to regulatory changes could have a material adverse effect on our business and results of operations.

Our business and reputation may be adversely impacted if we fail to comply with U.S. and foreign laws and regulations . Our services are subject to various laws and regulations, including, but not limited to, the ACA and Anti-Money Laundering rules. The growth of our international operations via acquisition also subjects us to additional risks, such as compliance with foreign laws and regulations. The enactment of new laws and regulations, modifications of existing laws and regulations, or the adverse application or interpretation of new or existing laws or regulations can adversely affect our business. There is uncertainty regarding the potential future evolution and modification of the ACA. Failure to update our services to comply with modified or new legislation in the area of health care reform as well as failure to educate and assist our clients regarding this legislation could adversely impact our business reputation and negatively impact our client base. Failure to comply with laws and regulations could result in the imposition of consent orders or civil and criminal penalties, including fines, which could damage our reputation and have an adverse effect on our results of operations or financial condition. In addition, as a U.S. company, we are required to comply with the economic sanctions and embargo programs administered by the Office of Foreign Assets Control and similar multi-national bodies and governmental agencies worldwide, and the Foreign Corrupt Practices Act (“FCPA”). A violation of a sanction or embargo program or of the FCPA or similar laws prohibiting certain payments to governmental officials, could subject us, and individual employees, to a regulatory enforcement action as well as significant civil and criminal penalties which could adversely impact our business and operations.

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We may not be able to keep pace with changes in technology or provide timely enhancements to our products and services . The market for our products is characterized by rapid technological advancements, changes in customer requirements, frequent new product introductions, and enhancements and changing industry standards. To maintain our growth strategy, we must adapt and respond to technological advances and technological requirements of our clients. Our future success will depend on our ability to: enhance our current products and introduce new products in order to keep pace with products offered by our competitors; enhance capabilities and increase the performance of our internal systems, particularly our systems that meet our clients' requirements; and adapt to technological advancements and changing industry standards. We continue to make significant investments related to the development of new technology. If our systems become outdated, it may negatively impact our ability to meet performance expectations related to quality, time to market, cost and innovation relative to our competitors. The failure to provide more efficient and user-friendly customer-facing digital experience across internet and mobile platforms as well as in physical locations may adversely impact our business and operating results. There can be no assurance that our efforts to update and integrate systems will be successful. If we do not integrate and update our systems in a timely manner, or if our investments in technology fail to provide the expected results, there could be a material adverse effect to our business and results of operations. The failure to continually develop enhancements and use of technologies such as robotics and other workflow automation tools, natural language processing, and artificial intelligence/machine learning may impact our ability to increase the efficiency of and reduce costs associated with operational risk management and compliance activities.

Our reputation, results of operations, or financial condition may be adversely impacted if we fail to comply with data privacy laws and regulations. Our services require the storage and transmission of proprietary and confidential information of our clients and their employees, including personal or identifying information, as well as their financial and payroll data. Our applications are subject to various complex government laws and regulations on the federal, state, and local levels, including those governing personal privacy. In the U.S., we are subject to rules and regulations promulgated under the authority of the Federal Trade Commission, the Health Insurance Portability and Accountability Act of 1996, the Family Medical Leave Act of 1993, the ACA, federal and state labor and employment laws, and state data breach notification laws. In addition, the European Union's General Data Privacy Regulation became fully effective in May 2018. Failure to comply with such laws and regulations could result in the imposition of consent orders or civil and criminal penalties, including fines, which could damage our reputation and have an adverse effect on our results of operations or financial condition. The regulatory framework for privacy issues is rapidly evolving and future enactment of more restrictive laws, rules, or regulations and/or future enforcement actions or investigations could have a materially adverse impact on us through increased costs or restrictions on our business and noncompliance could result in regulatory penalties and significant legal liability.

We could be subject to reduced revenues, increased costs, liability claims, or harm to our competitive position as a result of cyberattacks, security vulnerabilities or Internet disruptions. We rely upon information technology ("IT") networks, cloud-based platforms, and systems to process, transmit, and store electronic information, and to support a variety of business processes, some of which are provided by third party vendors. Cyberattacks and security threats are a risk to our business and reputation. A cyberattack, unauthorized intrusion, malicious software infiltration, network disruption or outage, corruption of data, or theft of personal or other sensitive information, could have a material adverse effect on our business operations or that of our clients, result in liability or regulatory sanction, or cause harm to our business and reputation and result in a loss in confidence in our ability to serve clients all of which could have a material adverse effect on our business. The rapid speed of disruptive innovations involving cyberattacks, security vulnerabilities and Internet disruptions enabled by new and emerging technologies may outpace our organization's ability to compete and/or manage the risk appropriately.

Data Security and Privacy Leaks : We collect, use, and retain increasingly large amounts of personal information about our clients, employees of our clients, and our employees, including: bank account numbers, credit card numbers, social security numbers, tax return information, health care information, retirement account information, payroll information, system and network passwords, and other sensitive personal and business information. At the same time, the continued occurrence of high-profile data breaches provides evidence of an external environment increasingly hostile to information security. Vulnerabilities, threats, and more sophisticated and targeted computer crimes pose a risk to the security of our systems and networks, and the confidentiality, availability, and integrity of our data.

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Our service platforms enable our clients to store and process personal data on premise or, increasingly, in a cloud-based environment that we host. The security of our IT infrastructure is an important consideration in our customers' purchasing decisions. Because the techniques used to obtain unauthorized access, disable or degrade service or sabotage systems change frequently, are increasingly more complex and sophisticated and may be difficult to detect for long periods of time, we may be unable or fail to anticipate these techniques or implement adequate or timely preventative or responsive measures. As cyber threats continue to evolve, we are focused on ensuring that our operating environments safeguard and protect personal and business information. We may be required to invest significant additional resources to comply with evolving cybersecurity regulations and to modify and enhance our information security and controls, and to investigate and remediate any security vulnerabilities. While we have security systems and IT infrastructure in place designed to detect and protect against unauthorized access to such information, if our security measures are breached, our business could be substantially harmed and we could incur significant liabilities. Any such breach or unauthorized access could negatively affect our ability to attract new clients, cause existing clients to terminate their agreements with us, result in reputational damage, and subject us to lawsuits, regulatory fines, or other actions or liabilities which could materially and adversely affect our business and operating results. Third parties, including vendors that provide services for our operations, could also be a source of security risk to us in the event of a failure of their own security systems and infrastructure.

Data Loss and Business Interruption: If our systems are disrupted or fail for any reason, including Internet or systems failure, or if our systems are infiltrated by unauthorized persons, both the Company and our clients could experience data loss, financial loss, harm to reputation, or significant business interruption. Hardware, applications and services, including cloud-based services, that we develop or procure from third party vendors may contain defects in design or other problems that could compromise the integrity and availability of our services. Any delays or failures caused by network outages, software or hardware failures, or other data processing disruptions, could result in our inability to provide services in a timely fashion or at all. We may be required to incur significant costs to protect against damage caused by disruptions or security breaches in the future. Such events may expose us to unexpected liability, litigation, regulatory investigation and penalties, loss of clients' business, unfavorable impact to business reputation, and there could be a material adverse effect on our business and results of operations.

In the event of a catastrophe, our business continuity plan may fail, which could result in the loss of client data and adversely interrupt operations. Our operations are dependent on our ability to protect our infrastructure against damage from catastrophe or natural disaster, severe weather including events resulting from climate change, unauthorized security breach, power loss, telecommunications failure, terrorist attack, or other events that could have a significant disruptive effect on our operations. We have a business continuity plan in place in the event of system failure due to any of these events. Our business continuity plan has been tested in the past by circumstances of severe weather, including hurricanes, floods, and snowstorms, and has been successful. However, these past successes are not an indicator of success in the future. If the business continuity plan is unsuccessful in a disaster recovery scenario, we could potentially lose client data or experience material adverse interruptions to our operations or delivery of services to our clients.

We may be adversely impacted by any failure of third-party service providers to perform their functions. As part of providing services to clients, we rely on a number of third-party service providers. These service providers include, but are not limited to, couriers used to deliver client payroll checks and banks used to electronically transfer funds from clients to their employees. Failure by these service providers, for any reason, to deliver their services in a timely manner and in compliance with applicable laws and regulations could result in material interruptions to our operations, impact client relations, and result in significant penalties or liabilities to us.

We may be exposed to additional risks related to our co-employment relationship within our PEO business. Our acquisition of Oasis in December 2018 strengthened our presence in the PEO industry. Many federal and state laws that apply to the employer-employee relationship do not specifically address the obligations and responsibilities of the "co-employment" relationship within our PEO business. State and federal positions regarding co-employment relationships are in a constant state of flux and have changed with varying degrees of impact on our operations. We cannot predict when changes will occur or forecast whether any particular future changes will be favorable or unfavorable to our operations. There is a possibility that we may be subject to liability for violations of employment or discrimination laws by our clients and acts or omissions of client employees, who may be deemed to be our agents, even if we do not participate in any such acts or violations. Although our agreements with clients provide that they will indemnify us for any liability attributable to their own or their employees' conduct, we may not be able to effectively enforce or collect such contractual obligations. In addition, we could be subject to liabilities with respect to our employee benefit plans if it were determined that we are not the "employer" under any applicable state or federal laws. Incurring additional liabilities related to our PEO business may adversely affect our results of operations.

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We may be adversely impacted by changes in health insurance and workers' compensation rates and underlying claims trends.

Within our PEO business, we maintain health and workers' compensation insurance covering worksite employees. The insurance costs are impacted by claims experience and are a significant portion of our PEO costs. If we experience a sudden or unexpected increase in claims activity, our costs could increase. In addition, in the event of expiration or cancellation of existing contracts, we may not be able to secure replacement contracts on competitive terms. Also, as a co-employer in the PEO, we assume or share many of the employer-related responsibilities associated with health care reform, which may result in increased costs. Increases in costs not incorporated into service fees timely or fully could have a material adverse effect on our results of operations. Incorporating cost increases into service fees could also impact our ability to attract and retain clients.

Our clients could have insufficient funds to cover payments we have made on their behalf, resulting in financial loss to us.

As part of the payroll processing service, we are authorized by our clients to transfer money from their accounts to fund amounts owed to their employees and various taxing authorities. It is possible that we could be held liable for such amounts in the event the client has insufficient funds to cover them. We have in the past, and may in the future, make payments on our clients' behalf for which we may not be reimbursed, resulting in loss to us.

Our interest earned on funds held for clients may be impacted by changes in government regulations mandating the amount of tax withheld or timing of remittance.

We receive interest income from investing client funds collected but not yet remitted to applicable tax or regulatory agencies or to client employees. A change in regulations either decreasing the amount of taxes to be withheld or allowing less time to remit taxes to applicable tax or regulatory agencies could adversely impact interest income.

We may be adversely impacted by volatility in the political and economic environment.

Trade, monetary and fiscal policies, and political and economic conditions may substantially change, and credit markets may experience periods of constriction and variability. When there is a slowdown in the economy, employment levels and interest rates may decrease or become more volatile. These conditions may impact our business due to lower transaction volumes or an increase in the number of clients going out of business. Current or potential clients may decide to reduce their spending on payroll and other outsourcing services. In addition, new business formation may be affected by an inability to obtain credit.

We invest our funds held for clients in high quality, investment-grade marketable securities, money markets, and other cash equivalents. However, these funds held for clients are subject to general market, interest rate, credit, and liquidity risks. These risks may be exacerbated during periods of unusual financial market volatility. The interest we earn on funds held for clients may decrease as a result of a decline in funds available to invest and lower interest rates. In addition, during periods of volatility in the credit markets, certain types of investments may not be available to us or may become too risky for us to invest in, further reducing the interest we may earn on client funds.

Constriction in the credit markets may impact the availability of financing, even to borrowers with the highest credit ratings. Historically, we have periodically borrowed against available credit arrangements to meet short-term liquidity needs. However, should we require additional short-term liquidity during days of large outflows of client funds, a credit constriction may limit our ability to access those funds or the flexibility to obtain them at interest rates that would be acceptable to us. Growth in services for funding payrolls of our clients in the temporary staffing industry may be constricted if access to financing becomes limited. In addition, our ability to grow through significant acquisitions may be limited. See also "Item 7A. Quantitative and Qualitative Disclosures About Market Risk." If all of these financial and economic circumstances were to remain in effect for an extended period of time, there could be a material adverse effect on our results of operations and financial condition.

We have made and may continue to make acquisitions that involve numerous risks and uncertainties.

Acquisitions subject us to risks, including increased debt, assumption of unforeseen liabilities, and difficulties in integrating operations. Successful integration involves many challenges, including the difficulty of developing and marketing new products and services, our exposure to unforeseen liabilities of acquired companies, and the loss of key employees of an acquired business. The integration and conversion of our acquired operations or other future acquisitions, if any, could result in increased operating costs if the anticipated synergies of operating these businesses as one are not achieved, a loss of strategic opportunities if management is distracted by the integration process, and a loss of customers if our service levels drop during or following the integration process. In addition, an acquisition could adversely impact cash flows and/or operating results, and dilute stockholder interests, for many reasons, including charges to our income to reflect the impairment of acquired intangible assets including goodwill, interest costs and debt service requirements for any debt incurred in connection with an acquisition, and any issuance of securities in connection with an acquisition or new business venture that dilutes or lessens the rights of our current stockholders. If the integration of any or all of our acquisitions or future acquisitions is not successful, it could have a material adverse impact on our operating results and stock price.

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Certain of our debt agreements contain covenants that may constrain the operation of our business, and our failure to comply with these covenants could have a material adverse effect on our financial condition . The Note Purchase and Guarantee Agreement that we entered into in January 2019 in connection with our acquisition of Oasis, contains restrictive covenants which may restrict our flexibility to operate our business. These covenants include restrictions regarding the incurrence of liens and indebtedness, substantial changes in the general nature of our business and our subsidiaries (taken as a whole), certain merger transactions, certain sales of assets and other matters, all subject to certain exceptions. The financial covenants, which are based on quarterly financial tests, require us not to exceed a maximum leverage ratio of 3.50:1.00 and a minimum interest coverage ratio of 2.00:1.00. In addition, we will not permit certain of our indebtedness to exceed 20% of our consolidated stockholders' equity. If we do not comply with these covenants, it could result in material and adverse effects on our operating results and our financial condition.

We may not be able to attract and retain qualified people, which could impact the quality of our services and customer satisfaction. Our success, growth, and financial results depend in part on our continuing ability to attract, retain, and motivate highly qualified people at all levels, including management, technical, compliance, and sales personnel. Competition for these individuals can be intense, and we may not be able to retain our key people, or attract, assimilate, or retain other highly-qualified individuals in the future, which could harm our future success.

Failure to protect our intellectual property rights may harm our competitive position and litigation to protect our intellectual property rights or defend against third-party allegations of infringement may be costly. Despite our efforts to protect our intellectual property and proprietary information, we may be unable to do so effectively in all cases. Our intellectual property could be wrongfully acquired as a result of a cyberattack or other wrongful conduct by employees or third parties. To the extent that our intellectual property is not protected effectively by trademarks, copyrights, patents, or other means, other parties with knowledge of our intellectual property, including former employees, may seek to exploit our intellectual property for their own and others' advantage. Competitors may also misappropriate our trademarks, copyrights or other intellectual property rights or duplicate our technology and products. Any significant impairment or misappropriation of our intellectual property or proprietary information could harm our business and our brand, and may adversely affect our ability to compete.

In the event we receive negative publicity, our reputation and the value of our brand could be harmed and clients may not use our products and services, which may have a material adverse effect on our business. Negative publicity relating to events or activities attributed to us, our corporate employees, or others associated with us, whether or not justified, may tarnish our reputation and reduce the value of our brand. If we are unable to maintain quality HCM solutions and PEO services, our reputation with our clients may be harmed and the value of our brand may diminish. In addition, if our brand is negatively impacted, it may have a material adverse effect on our business, including challenges retaining clients or attracting new clients and recruiting talent and retaining employees.

We are involved in litigation from time to time arising from the operation of our business and, as such, we could incur substantial judgments, fines, legal fees, or other costs. We are sometimes the subject of complaints or litigation from customers, employees, or other third parties for various actions. From time to time, we are involved in litigation involving claims related to, among other things, breach of contract, tortious conduct, and employment and labor law matters. The damages sought against us in some of these litigation proceedings could be substantial. Although we maintain liability insurance for some litigation claims, if one or more of the claims were to greatly exceed our insurance coverage limits or if our insurance policies do not cover a claim, this could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Quantitative and qualitative disclosures about market risk : Refer to Item 7A of this Form 10-K for a discussion on Market Risk Factors, which could have a material adverse effect on our business and results of operations.

Item 1B. *Unresolved Staff Comments*

None.

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Item 2. Properties

We owned and leased the following properties as of May 31, 2019:

| | <u>Square feet</u> |
|---------------------------|--------------------|
| Owned facilities: | |
| Rochester, New York | 1,012,000 |
| Other U.S. locations | 65,000 |
| International locations | 13,000 |
| Total owned facilities | <u>1,090,000</u> |
| Leased facilities: | |
| Rochester, New York | 111,000 |
| Other U.S. locations | 2,106,000 |
| International locations | 88,000 |
| Total leased facilities | <u>2,305,000</u> |

Our facilities in Rochester, New York house various distribution, processing, and technology functions, certain ancillary functions, a telemarketing unit, and other back-office functions. Facilities outside of Rochester, New York are in various locations throughout the U.S. and house our branch and sales offices, regional service centers, multi-product service centers, and data processing centers. These locations are concentrated in metropolitan areas. Our international locations primarily house our European branches and sales locations, and a location in India primarily houses information technology staffing. We believe that adequate, suitable lease space will continue to be available to meet our needs.

Item 3. Legal Proceedings

We are subject to various claims and legal matters that arise in the normal course of our business. These include disputes or potential disputes related to breach of contract, tort, breach of fiduciary duty, employment-related claims, tax claims, and other matters.

Our management currently believes that resolution of outstanding legal matters will not have a material adverse effect on our financial position or results of operations. However, legal matters are subject to inherent uncertainties and there exists the possibility that the ultimate resolution of these matters could have a material adverse impact on the Company's financial position and the results of operations in the period in which any such effect is recorded.

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

Our common stock trades on the Nasdaq Global Select Market under the symbol "PAYX". Dividends have historically been paid on our common stock in August, November, February, and May. The level and continuation of future dividends are dependent on our future earnings and cash flows, and are subject to the discretion of our Board of Directors (the "Board").

As of June 30, 2019, there were 10,692 holders of record of our common stock, which includes registered holders and participants in the Paychex, Inc. Dividend Reinvestment and Stock Purchase Plan. There were also 4,350 participants in the Paychex, Inc. Qualified Employee Stock Purchase Plan and 4,388 participants in the Paychex, Inc. Employee Stock Ownership Plan.

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During fiscal 2019 and the fiscal year ended May 31, 2018 (“fiscal 2018”) we maintained a common stock repurchase program authorized by the Board in July 2016 which expired on May 31, 2019. This program allowed us to repurchase up to \$350.0 million of our common stock. Shares repurchased under this program during fiscal 2019 were as follows (in millions):

| <u>In millions</u> | <u>Total number of shares purchased</u> | <u>Average price paid per share</u> | <u>Total dollars</u> | <u>Approximate dollar value of shares that may yet be purchased under the program</u> |
|---------------------------|---|-------------------------------------|----------------------|---|
| First quarter | 0.5 | \$ 71.80 | \$ 32.8 | \$ 67.7 |
| Second quarter | — | \$ — | — | \$ 67.7 |
| Third quarter | — | \$ — | — | \$ 67.7 |
| March 1 to March 31, 2019 | — | \$ — | — | \$ 67.7 |
| April 1 to April 30, 2019 | — | \$ — | — | \$ 67.7 |
| May 1 to May 31, 2019 | 0.2 | \$ 83.76 | 24.1 | \$ — |
| Fiscal year | <u>0.7</u> | <u>\$ 76.42</u> | <u>\$ 56.9</u> | |

All shares of stock repurchased during fiscal 2019 were retired. In May 2019, our Board authorized a program which allows us to repurchase up to \$400.0 million of our common stock which expires on May 31, 2022.

The following graph shows a five-year comparison of the total cumulative returns of investing \$100 on May 31, 2014, in Paychex common stock, the S&P 500 Index, and a Peer Group Index. All comparisons of stock price performance shown assume reinvestment of dividends. We are a participant in the S&P 500 Index, a market group of companies with a larger than average market capitalization. Our Peer Group is a group of companies with comparable revenue and net income, who are in a comparable industry, or who are direct competitors of Paychex (as detailed below).

STOCK PRICE PERFORMANCE GRAPH



| <u>May 31,</u> | <u>2014</u> | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>2018</u> | <u>2019</u> |
|----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Paychex | \$100.00 | \$124.25 | \$141.11 | \$159.07 | \$180.58 | \$243.87 |
| S&P 500 | \$100.00 | \$111.81 | \$113.72 | \$133.59 | \$152.81 | \$158.59 |
| Peer Group | \$100.00 | \$128.44 | \$131.81 | \$154.93 | \$200.03 | \$227.60 |

There can be no assurance that our stock performance will continue into the future with the same or similar trends depicted in the graph above. We neither make nor endorse any predictions as to future stock performance.

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Our Peer Group for fiscal 2019 is comprised of the following companies:

| | |
|---|-----------------------------------|
| Alliance Data Systems Corporation | H&R Block, Inc. |
| Automatic Data Processing, Inc. (direct competitor) | Intuit Inc. |
| Broadridge Financial Solutions, Inc. | Moody's Corporation |
| DST System, Inc. | Robert Half International Inc. |
| The Dun & Bradstreet Corporation | TD AMERITRADE Holding Corporation |
| Equifax, Inc. | Total Systems Services, Inc. |
| Fiserv, Inc. | The Western Union Company |
| Global Payments Inc. | |

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Item 6. Selected Financial Data

In millions, except per share amounts

| Year ended May 31, | 2019 ⁽⁴⁾ | 2018 ⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾ | 2017 ⁽¹⁾⁽⁴⁾ | 2016 ⁽⁵⁾⁽⁶⁾ | 2015 ⁽⁶⁾ |
|--|---------------------|------------------------------|------------------------|------------------------|---------------------|
| Service revenue | \$ 3,691.9 | \$ 3,314.2 | \$ 3,102.4 | \$ 2,905.8 | \$ 2,697.5 |
| Interest on funds held for clients | 80.6 | 63.5 | 50.6 | 46.1 | 42.1 |
| Total revenue | \$ 3,772.5 | \$ 3,377.7 | \$ 3,153.0 | \$ 2,951.9 | \$ 2,739.6 |
| Operating income | \$ 1,371.3 | \$ 1,291.5 | \$ 1,253.9 | \$ 1,146.6 | \$ 1,053.6 |
| Net income | \$ 1,034.4 | \$ 994.1 | \$ 826.3 | \$ 756.8 | \$ 674.9 |
| Basic earnings per share | \$ 2.88 | \$ 2.77 | \$ 2.30 | \$ 2.10 | \$ 1.86 |
| Diluted earnings per share | \$ 2.86 | \$ 2.75 | \$ 2.28 | \$ 2.09 | \$ 1.85 |
| Cash dividends per common share | \$ 2.30 | \$ 2.06 | \$ 1.84 | \$ 1.68 | \$ 1.52 |
| Purchases of property and equipment | \$ 123.8 | \$ 154.0 | \$ 94.3 | \$ 97.7 | \$ 102.8 |
| Cash, restricted cash, and total corporate investments | \$ 779.9 | \$ 719.7 | \$ 777.4 | \$ 793.2 | \$ 936.4 |
| Total assets | \$ 8,676.0 | \$ 7,915.4 | \$ 7,280.8 | \$ 6,440.8 | \$ 6,467.5 |
| Total debt | \$ 796.4 | \$ — | \$ — | \$ — | \$ — |
| Stockholders' equity | \$ 2,619.5 | \$ 2,356.8 | \$ 2,227.2 | \$ 1,911.7 | \$ 1,785.5 |
| Return on stockholders' equity | 42 % | 44 % | 39 % | 40 % | 36 % |

- (1) In fiscal 2019, we adopted Accounting Standards Codification (“ASC”) Topic 606, “Revenue from Contracts with Customers” (“ASC Topic 606”). As a result, amounts have been adjusted to reflect the adoption of the new standard. The adoption of ASC Topic 606 increased diluted earnings per share by \$0.17 and \$0.02 per diluted share for fiscal 2018 and for the fiscal year ended May 31, 2017 (“fiscal 2017”), respectively. Refer to Item 8, “Financial Statements and Supplementary Data” of this Form 10-K, for additional discussion of the impact of adopting the new standard.
- (2) In fiscal 2018, the enactment of the Tax Cuts and Jobs Act (the “Tax Act”) significantly impacted our net income, basic and diluted earnings per share, and return on stockholders' equity. Refer to Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and Item 8, “Financial Statements and Supplementary Data,” of this Form 10-K for additional discussion of the impact of the Tax Act.
- (3) In fiscal 2018, an additional expense and corresponding tax benefit was recognized as a result of the termination of certain license agreements. Refer to Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations”, and Item 8, “Financial Statements and Supplementary Data” of this Form 10-K, for additional discussion of the impact of the termination of certain license agreements.
- (4) In fiscal 2017, we early-adopted new accounting guidance related to employee stock-based compensation payments. As a result, a discrete tax benefit was recognized upon exercise or lapse of stock-based awards. This discrete tax benefit increased diluted earnings per share by approximately \$0.02 per diluted share, \$0.04 per diluted share, and \$0.05 per diluted share for fiscal 2019, fiscal 2018, and fiscal 2017, respectively.
- (5) In the fiscal year ended May 31, 2016 (“fiscal 2016”), a net tax benefit was recorded for income derived in prior tax years from customer-facing software we produced. This net tax benefit increased diluted earnings per share by approximately \$0.06 per share.
- (6) During fiscal 2016, we adopted new accounting guidance related to the presentation of deferred taxes within the Consolidated Balance Sheets. As a result, a reclassification of prior year deferred tax amounts was made to conform to the May 31, 2016 presentation of deferred taxes within the Consolidated Balance Sheets. In the table above, a similar reclassification was made, which impacted total assets.

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

Management's Discussion and Analysis of Financial Condition and Results of Operations reviews the operating results of Paychex, Inc. and its wholly owned subsidiaries ("Paychex," the "Company," "we," "our," or "us") for each of the three fiscal years ended May 31, 2019 ("fiscal 2019" or the "fiscal year"), May 31, 2018 ("fiscal 2018"), and May 31, 2017 ("fiscal 2017"), and our financial condition as of May 31, 2019. This review should be read in conjunction with the accompanying consolidated financial statements and the related Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K ("Form 10-K") and the "Risk Factors" discussed in Item 1A of this Form 10-K. Forward-looking statements in this review are qualified by the cautionary statement under the heading "Cautionary Note Regarding Forward-Looking Statements Pursuant to the United States Private Securities Litigation Reform Act of 1995" contained at the beginning of Part I of this Form 10-K.

Overview

We are a leading provider of integrated human capital management ("HCM") solutions for payroll, benefits, human resource ("HR"), and insurance services for small- to medium-sized businesses. We offer a comprehensive portfolio of HCM services and products that allow our clients to meet their diverse payroll and HR needs.

We support small-business companies through our core payroll, utilizing our proprietary, robust, software-as-a-service ("SaaS") Paychex Flex[®] platform, and our SurePayroll[®] SaaS-based products. Mid-market companies typically have more complex payroll and benefits needs, and are serviced through our Paychex Flex Enterprise solution set, which offers an integrated suite of HCM solutions through the Paychex Flex platform, or through our legacy platform. Our SaaS solution through Paychex Flex Enterprise integrates payroll processing with HR management, employee benefits administration, time and labor management, applicant tracking, onboarding solutions, and performance and learning management.

Our portfolio of HCM and employee benefit-related services are as follows:

Management Solutions :

- payroll processing services;
- payroll tax administration services;
- employee payment services;
- regulatory compliance services (new-hire reporting and garnishment processing);
- HR Solutions Administrative Services Organization ("ASO");
- retirement services administration;
- HR administration services, including time and attendance, benefit enrollment, recruiting, and onboarding;
- other HR services and products; and
- business services. Our wholly owned subsidiary, Paychex Advance LLC ("Paychex Advance"), provides a portfolio of services to the temporary staffing industry, including payroll funding (via the purchase of accounts receivable) and outsourcing services, which includes payroll processing, invoicing, and tax preparation.

Professional Employer Organization ("PEO") and Insurance Services:

- PEO services provided by our licensed subsidiaries, Paychex Business Solutions, LLC, HR Outsourcing Holdings, Inc. ("HROi"), and Oasis Outsourcing Group Holdings, L.P. ("Oasis"); and
- insurance services provided by our licensed insurance agency, Paychex Insurance Agency, Inc.

Our mission is to be the leading provider of payroll, benefits, HR, and insurance services for small and mid-sized companies by being an essential partner with America's businesses. We believe success in this mission will lead to strong long-term financial performance. Our strategy focuses on flexible, convenient service; industry-leading, integrated technology; solid sales execution; providing a comprehensive suite of value-added HCM services; continued service penetration; and engaging in strategic acquisitions.

We continue to focus on driving growth in the number of clients, revenue per client, and revenue and profits, while providing industry-leading service and technology solutions to our clients and their employees. We maintain industry-leading margins by managing our personnel costs and expenses while continuing to invest in our business, particularly in leading-edge technology. We believe these investments are critical to our success. Looking to the future, we believe that investing in our products, people, and service capabilities will position us to capitalize on opportunities for long-term growth.

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Our financial results for fiscal 2019 reflect another year of continued growth across our major HCM product lines. PEO and Insurance Services revenue continued to experience strong growth of 46 % for fiscal 2019 as compared with fiscal 2018. Excluding the acquisition of Oasis, PEO and Insurance Services revenue increased 19% for fiscal 2019. The impact of the acquisition of HROi on PEO and Insurance Services revenue growth for fiscal 2019 was approximately 4%. The remaining increases were driven by growth in clients and client worksite employees across our combined existing PEO business. Management Solutions revenue increased 4 % for fiscal 2019 as compared with fiscal 2018, primarily driven by growth in our client base across many of our services, growth in revenue per check, which improved as a result of price increases, net of discounts, and increased revenue per client. As of May 31, 2019, including the Oasis acquisition, we served approximately 670,000 payroll and PEO clients. As of May 31, 2018, we served over 650,000 payroll and PEO clients. Client retention was over 82 % of our beginning client base for the fiscal year, in line with our historic best retention rate.

Effective December 20, 2018, the Company acquired Oasis. Upon closing, Oasis became a wholly owned subsidiary of the Company. Oasis is an industry leader in providing HR outsourcing services. The purchase price was \$992.2 million, net of \$262.3 million in cash acquired, including \$132.1 million of restricted cash. The acquisition was financed through a combination of cash on hand and the issuance of long-term private placement debt totaling \$800.0 million.

Interest rates available on high-quality financial instruments have gradually increased. Our combined funds held for clients and corporate investment portfolios earned an average rate of return of 1.9% for fiscal 2019, compared to 1.5 % for fiscal 2018 and 1.2 % for fiscal 2017. The United States (“U.S.”) Federal Reserve raised the Federal Funds rate by a total of 75 basis points during fiscal 2019 to a range of 2.25% to 2.50% as of May 31, 2019. The Federal Funds rate was in the range of 1.50% to 1.75% as of May 31, 2018.

Highlights of our financial results for fiscal 2019, compared to fiscal 2018, are as follows:

- Total revenue increased 12 % to \$ 3.8 billion.
 - Total service revenue increased 11 % to \$ 3.7 billion.
 - Management Solutions revenue increased 4 % to \$ 2.9 billion.
 - PEO and Insurance Services revenue increased 46 % to \$ 814.2 million. Excluding the acquisition of Oasis, PEO and Insurance Services revenue increased 19 % . The impact of the acquisition of HROi on PEO and Insurance Services revenue growth was approximately 4%.
 - Interest on funds held for clients increased 27 % to \$ 80.6 million.
 - Operating income increased 6 % to \$ 1.4 billion. Adjusted operating income ⁽¹⁾ increased 4 % to \$ 1.4 billion.
 - Net income increased 4 % to \$ 1.0 billion. Adjusted net income ⁽¹⁾ increased 11 % to \$ 1.0 billion.
 - Diluted earnings per share increased 4 % to \$ 2.86 per share. Adjusted diluted earnings per share ⁽¹⁾ increased 11 % to \$ 2.84 per share.
 - Dividends of \$826.8 million were paid to stockholders, representing 80% of net income.
- (1) Adjusted operating income, adjusted net income, and adjusted diluted earnings per share are not U.S. generally accepted accounting principles (“GAAP”) measures. Please refer to the “Non-GAAP Financial Measures” section of this Item 7 for a discussion of these non-GAAP measures and a reconciliation to the most comparable GAAP measures of operating income, net income, and diluted earnings per share.

Business Outlook

Our payroll and PEO client base, including all acquisitions, was approximately 670,000 clients as of May 31, 2019. Our payroll and PEO client base, including all acquisitions, exceeded 650,000 clients as of May 31, 2018, and was approximately 605,000 clients as of May 31, 2017.

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While our HR product offerings provide services to employers and employees beyond payroll, they effectively leverage payroll processing data. Our HR services are included as part of the integrated HCM solution within Paychex Flex or provided through our Prism HR PEO platform. The following table illustrates the growth in selected HR product offerings:

| | Balance as of May 31, 2019 | Growth rates for fiscal year | | |
|--|-------------------------------|------------------------------|------|------|
| | | 2019 | 2018 | 2017 |
| Management Solutions | | | | |
| Paychex HR Solutions client worksite employees | 1,086,000 | 9 % | 9 % | 8 % |
| Paychex HR Solutions clients | 37,000 | 7 % | 8 % | 8 % |
| Retirement services plans | 87,000 | 6 % | 6 % | 5 % |
| PEO and Insurance Services | | | | |
| PEO client worksite employees ⁽¹⁾ | 405,000 | 150 % | 50 % | 9 % |
| PEO clients ⁽¹⁾ | 15,000 | 126 % | 39 % | 3 % |
| Health and benefits services applicants | 189,000 | 7 % | 9 % | 8 % |

(1) Oasis is included in the total number of worksite employees and clients for fiscal 2019. HROi is included in the total number of worksite employees and clients for both fiscal 2019 and fiscal 2018.

Concentrated effort remains on the continued enhancements of Paychex Flex, our robust cloud-based HCM platform, which allows direct client access to payroll, HR, and benefits information in a streamlined and integrated approach to workplace management. In fiscal 2019, we continued to focus on enhancing the value to clients of our Paychex Flex platform. New offerings and enhancements to our Paychex Flex platform made in fiscal 2019 included:

- Paychex Learning, an accessible, low-cost and seamlessly integrated web-based learning management system for providing professional training courses to the workforce;
- Paychex Flex Assistant, a chatbot programmed to answer commonly asked HR-related questions ;
- T ablet-enabled facial recognition for time and attendance ;
- Retirement-focused product enhancements to both the participant dashboard and advisor portal, designed to simplify the process of enrolling and managing a 401(k) plan;
- New synchronization functionality between Paychex General Ledger Service and QuickBooks Online, which enhances efficiency and productivity for businesses, as well as the accountants who serve them; and
- The addition of performance management, workflow approvals, real-time analytics , and a configurable events calendar to the Paychex Flex platform.

We continue to strengthen our position as an expert in our industry by serving as a source of education and information to clients, businesses of all sizes, and other interested parties. We provide free webinars, white papers, and other information on our website to aid existing and prospective clients with the impact of regulatory changes. The Paychex Insurance Agency, Inc. website, www.paychex.com/group-health-insurance , helps small-business owners navigate the area of insurance coverage. Both this website and www.paychex.com/worx have sections dedicated to the topic of health care reform.

Financial position and liquidity

Our financial position as of May 31, 2019 remained strong with cash, restricted cash, and total corporate investments of \$ 779.9 million. Total long-term borrowings, net of debt issuance costs, related to our acquisition of Oasis totaled \$796.4 million as of May 31, 2019 . Our investment strategy continues to focus on protecting principal and optimizing liquidity. We invest predominately in municipal bonds – including general obligation bonds; pre-refunded bonds, which are secured by a U.S. government escrow; and essential services revenue bonds – along with U.S. government agency and treasury securities and corporate bonds. During fiscal 2019 , our primary short-term investment vehicles were government agency discount notes, Variable Rate Demand Notes (“VRDNs”) and bank demand deposit accounts.

A majority of our portfolio is invested in high credit quality securities with ratings of AA or higher, and A-1/P-1 ratings on short-term securities. We limit the amounts that can be invested in any single issuer and invest in short- to intermediate-term instruments whose fair values are less sensitive to interest rate changes. We believe that our investments as of May 31, 2019 that were in an unrealized loss position were not other-than-temporarily impaired, nor has any event occurred subsequent to that date that would indicate any other-than-temporary impairment.

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Our primary source of cash is generated by our ongoing operations. Cash flows from operations were \$ 1.3 billion for fiscal 2019. Historically, we have funded our operations, capital purchases, business acquisitions, share repurchases, and dividend payments from our operating activities. However, we funded our most recent acquisition of Oasis through a combination of cash and the issuance of long-term private placement debt of \$800.0 million. Our positive operating cash flows for fiscal 2019 allowed us to support our business and to pay substantial dividends to our stockholders. In May 2019, our Board of Directors (the “Board”) increased our quarterly dividend by 11% to \$0.62 per share from \$0.56 per share. Dividends paid to stockholders were 80% of net income for fiscal 2019. It is anticipated that cash, restricted cash, and total corporate investments as of May 31, 2019, along with projected operating cash flows and available short-term financing, will support our normal business operations, capital purchases, share repurchases, and dividend payments for the foreseeable future.

For further analysis of our results of operations for fiscal years 2019, 2018, and 2017, and our financial position as of May 31, 2019, refer to the tables and analysis in the “Results of Operations” and “Liquidity and Capital Resources” sections of this Item 7 and the discussion in the “Critical Accounting Policies” section of this Item 7.

Results of Operations

Summary of Results of Operations for Fiscal Years:

| <u>In millions, except per share amounts</u> | <u>2019</u> | <u>Change</u> | <u>2018</u> <u>As Adjusted ⁽¹⁾</u> | <u>Change</u> | <u>2017</u> <u>As Adjusted ⁽¹⁾</u> |
|--|-------------------|---------------|--|---------------|--|
| Revenue: | | | | | |
| Management Solutions | \$ 2,877.7 | 4 % | \$ 2,758.4 | 3 % | \$ 2,680.7 |
| PEO and Insurance Services | 814.2 | 46 % | 555.8 | 32 % | 421.7 |
| Total service revenue | 3,691.9 | 11 % | 3,314.2 | 7 % | 3,102.4 |
| Interest on funds held for clients | 80.6 | 27 % | 63.5 | 26 % | 50.6 |
| Total revenue | 3,772.5 | 12 % | 3,377.7 | 7 % | 3,153.0 |
| Combined operating and SG&A expenses | 2,401.2 | 15 % | 2,086.2 | 10 % | 1,899.1 |
| Operating income | 1,371.3 | 6 % | 1,291.5 | 3 % | 1,253.9 |
| Interest (expense)/income, net | (3.3) | n/m | 8.6 | n/m | 5.2 |
| Income before income taxes | 1,368.0 | 5 % | 1,300.1 | 3 % | 1,259.1 |
| Income taxes | 333.6 | 9 % | 306.0 | (29)% | 432.8 |
| Effective income tax rate | 24.4 % | | 23.5 % | | 34.4 % |
| Net income | \$ 1,034.4 | 4 % | \$ 994.1 | 20 % | \$ 826.3 |
| Diluted earnings per share | \$ 2.86 | 4 % | \$ 2.75 | 21 % | \$ 2.28 |

(1) Amounts have been adjusted to reflect the adoption of Accounting Standards Codification (“ASC”) Topic 606, “Revenue from Contracts with Customers” (“ASC Topic 606”).

n/m – not meaningful

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We invest in highly liquid, investment-grade fixed income securities and do not utilize derivative instruments to manage interest rate risk. As of May 31, 2019, we had no exposure to high-risk or illiquid investments. Details regarding our combined funds held for clients and corporate investment portfolios are as follows:

| \$ in millions | Year ended May 31, | | |
|-------------------------------------|---------------------------|-------------------|-------------------|
| | 2019 | 2018 | 2017 |
| Average investment balances: | | | |
| Funds held for clients | \$ 3,969.7 | \$ 4,040.8 | \$ 4,066.3 |
| Corporate investments | 848.4 | 915.1 | 906.7 |
| Total | <u>\$ 4,818.1</u> | <u>\$ 4,955.9</u> | <u>\$ 4,973.0</u> |

Average interest rates earned (exclusive of net realized gains):

| | | | |
|---|-------|-------|-------|
| Funds held for clients | 2.0 % | 1.6 % | 1.2 % |
| Corporate investments | 1.6 % | 1.3 % | 1.1 % |
| Combined funds held for clients and corporate investments | 1.9 % | 1.5 % | 1.2 % |

| | | | |
|--------------------------|------|--------|--------|
| Total net realized gains | \$ — | \$ 0.1 | \$ 0.1 |
|--------------------------|------|--------|--------|

\$ in millions

| As of May 31, | 2019 | 2018 | 2017 |
|--|-------------|-------------|-------------|
| Net unrealized gains/(losses) on available-for-sale securities ⁽¹⁾ | \$ 19.7 | \$ (38.3) | \$ 32.0 |
| Federal Funds rate ⁽²⁾ | 2.50 % | 1.75 % | 1.00 % |
| Total fair value of available-for-sale securities | \$ 3,620.8 | \$ 3,104.8 | \$ 4,613.2 |
| Weighted-average duration of available-for-sale securities in years ⁽³⁾ | 2.9 | 3.1 | 3.2 |
| Weighted-average yield-to-maturity of available-for-sale securities ⁽³⁾ | 2.1 % | 1.9 % | 1.7 % |

- (1) The net unrealized gain on our investment portfolios was approximately \$ 31.6 million as of July 17, 2019 .
- (2) The Federal Funds rate was in the range of 2.25% to 2.50% as of May 31, 2019 , in the range of 1.50% to 1.75% as of May 31, 2018 , and in the range of 0.75% to 1.00% as of May 31, 2017 .
- (3) These items exclude the impact of VRDNs, as they are tied to short-term interest rates.

Management Solutions revenue: Management Solutions revenue was \$ 2.9 billion for fiscal 2019 and \$ 2.8 billion for fiscal 2018 , reflecting growth of 4 % and 3 %, respectively, compared to each of the prior fiscal year periods. Both fiscal 2019 and fiscal 2018 benefited from growth in our client base across many of our services and growth in revenue per client, which improved as a result of price increases, net of discounts, and increased product penetration. Paychex HR Solutions revenue growth for both fiscal 2019 and fiscal 2018 was driven by strong growth in client base and in client worksite employees. Retirement services revenue growth for both fiscal 2019 and 2018 benefited from an increase in the number of plans served, along with an increase in revenue earned on the asset value of participants' 401(k) funds. The impact of the acquisition of Lessor Group ("Lessor") on Management Solutions revenue growth for fiscal 2019 and fiscal 2018 was insignificant. Payroll revenue represented approximately 64% and 66% of Management Solutions revenue for fiscal 2019 and fiscal 2018, respectively. Management Solutions key statistics are as follows:

\$ in billions

| As of May 31, | 2019 | Change | 2018 | Change | 2017 |
|--|-------------|---------------|-------------|---------------|-------------|
| Paychex HR Solutions client worksite employees | 1,086,000 | 9 % | 995,000 | 9 % | 912,000 |
| Paychex HR Solutions clients | 37,000 | 7 % | 35,000 | 8 % | 32,000 |
| Retirement services plans | 87,000 | 6 % | 82,000 | 6 % | 78,000 |
| Asset value of retirement services participants' funds | \$ 31.0 | 1 % | \$ 30.6 | 12 % | \$ 27.4 |

PEO and Insurance Services revenue: PEO and Insurance Services revenue was \$ 814.2 million for fiscal 2019 and \$ 555.8 million for fiscal 2018 , reflecting growth of 46 % and 32 %, respectively, compared to each of the prior fiscal year periods. Excluding the impact of Oasis, PEO and Insurance Services revenue increased 19 % in fiscal 2019 when compared to fiscal 2018. PEO and Insurance Services revenue growth for fiscal 2019, excluding Oasis, was driven by growth in clients and client worksite employees across our combined existing PEO business. Demand for our existing PEO services, along with growth within our client base, resulted in double-digit growth in the number of client worksite employees served. The impact of the acquisition of HROI on PEO and Insurance Services revenue growth for fiscal 2019 was approximately 4%. For fiscal 2018, PEO and Insurance Services revenue growth was also primarily driven by increases in clients and client worksite employees across our combined

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existing PEO business. For fiscal 2018, HROi contributed approximately 18% to the growth in PEO and Insurance Services revenue. PEO revenue represented approximately 77% and 67% of PEO and Insurance Services revenue for fiscal 2019 and fiscal 2018, respectively.

Insurance Services revenue growth for both fiscal 2019 and fiscal 2018 benefited from an increase in the number of health and benefit clients and applicants across our payroll client base. For fiscal 2019, revenue growth was impacted by softness in the workers' compensation market as state insurance fund rates declined. Insurance Services revenue represented approximately 23% and 33% of PEO and Insurance Services revenue for fiscal 2019 and fiscal 2018, respectively.

PEO and Insurance Services key statistics are as follows:

| <u>As of May 31,</u> | <u>2019</u> | <u>Change</u> | <u>2018</u> | <u>Change</u> | <u>2017</u> |
|--|-------------|---------------|-------------|---------------|-------------|
| PEO client worksite employees ⁽¹⁾ | 405,000 | 150 % | 162,000 | 50 % | 109,000 |
| PEO clients ⁽¹⁾ | 15,000 | 126 % | 6,000 | 39 % | 5,000 |
| Health and benefits services applicants | 189,000 | 7 % | 177,000 | 9 % | 162,000 |

(1) Oasis is included in the total number of worksite employees and clients for fiscal 2019. HROi is included in the total number of worksite employees and clients for both fiscal 2019 and fiscal 2018.

Total service revenue: Total service revenue increased 11 % and 7 % for fiscal 2019 and fiscal 2018, respectively, attributable to the factors previously discussed. The acquisitions of Oasis, HROi, and Lessor contributed approximately 6% to the growth in total service revenue for fiscal 2019 as compared with fiscal 2018. The acquisitions of HROi and Lessor contributed less than 3% to the growth in total service revenue for fiscal 2018 as compared with fiscal 2017.

As of May 31, 2019, including the Oasis and Lessor acquisitions, we served approximately 670,000 payroll and PEO clients. Our total payroll and PEO client base exceeded 650,000, including the Lessor acquisition, for fiscal 2018 and was approximately 605,000 for fiscal 2017. Client retention was over 82% for fiscal 2019, in line with our historic best retention rate. Client retention was approximately 81% of the beginning client base for fiscal 2018 and fiscal 2017.

Interest on funds held for clients: Interest on funds held for clients increased 27 % for fiscal 2019 and 26 % for fiscal 2018 to \$ 80.6 million and \$ 63.5 million, respectively. For both fiscal 2019 and fiscal 2018, the increases were primarily due to higher average interest rates earned.

Average investment balances for funds held for clients decreased approximately 2 % and 1% for fiscal 2019 and fiscal 2018, respectively, primarily driven by the impact of lower client withholdings as a result of the Tax Cut and Jobs Act of 2017 (the "Tax Act"), and changes in client base mix, partially offset by the impact of wage inflation.

Refer to the "Market Risk Factors" section contained in Item 7A of this Form 10-K for more information on changing interest rates.

Combined operating and SG&A expenses: The following table summarizes total combined operating and SG&A expenses for fiscal years:

| <u>In millions</u> | <u>2019</u> | <u>Change ⁽¹⁾</u> | <u>2018</u> | <u>Change ⁽¹⁾</u> | <u>2017</u> |
|-------------------------------|-------------------|------------------------------|-----------------------------------|------------------------------|-----------------------------------|
| | | | <u>As Adjusted ⁽²⁾</u> | | <u>As Adjusted ⁽²⁾</u> |
| Compensation-related expenses | \$ 1,396.8 | 13 % | \$ 1,235.2 | 5 % | \$ 1,175.9 |
| Depreciation and amortization | 181.5 | 32 % | 138.0 | 9 % | 126.9 |
| PEO insurance costs | 286.7 | 40 % | 205.2 | 44 % | 142.2 |
| Other expenses | 536.2 | 6 % | 507.8 | 12 % | 454.1 |
| Total expenses | <u>\$ 2,401.2</u> | <u>15 %</u> | <u>\$ 2,086.2</u> | <u>10 %</u> | <u>\$ 1,899.1</u> |

(1) Calculated using actual amounts

(2) Amounts have been adjusted to reflect the adoption of ASC Topic 606.

Total expenses increased 15 % for fiscal 2019 and 10 % for fiscal 2018. The acquisitions of Oasis, HROi, and Lessor, contributed 10% and 5% to the growth in total expenses for fiscal 2019 and fiscal 2018, respectively.

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Compensation-related expenses increased 13% for fiscal 2019 and 5% for fiscal 2018. The acquisitions of Oasis, HROi and Lessor contributed 6% and 1% to the growth in compensation-related expenses for fiscal 2019 and fiscal 2018, respectively. For both fiscal 2019 and 2018, the increases in compensation-related expenses were driven by increased headcount due to incremental investments in sales force, technology resources, and operations to support the growth in business and increased performance-based pay. In addition, the increase in compensation-related expenses for fiscal 2018 was impacted by a one-time bonus paid to non-management employees. As of May 31, 2019, we had approximately 15,600 employees, including Oasis, compared with 14,300 employees as of May 31, 2018.

Depreciation expense is primarily related to buildings, furniture and fixtures, data processing equipment, and both purchased and internally developed software. Amortization of intangible assets is primarily related to client list acquisitions, including intangible assets recorded for the Oasis acquisition, which are amortized using either straight-line or accelerated methods. The growth in depreciation and amortization for fiscal 2019 was primarily driven by an increase in intangible assets related to the acquisitions of Oasis and Lessor. The increase in depreciation and amortization for fiscal 2018 was primarily driven by an increase in internally developed software that was placed in service over the prior two years as well as the amortization of customer lists and other intangibles related to the acquisitions of HROi and Lessor.

PEO insurance costs include workers' compensation and minimum premium health insurance benefit plans and self-insured dental and vision plans where we retain risk. Growth in our combined PEO business, including the acquisitions of Oasis and HROi, contributed to the growth in PEO insurance costs for both fiscal 2019 and fiscal 2018.

Other expenses include items such as non-capital equipment, delivery, forms and supplies, communications, travel and entertainment, professional services, and other costs incurred to support our business. Continued investment in product development, supporting technology, and the acquisitions of Oasis and HROi impacted other expense growth for both fiscal 2019 and fiscal 2018. For fiscal 2018, other expenses also reflect a one-time expense of \$32.6 million related to the termination of certain license agreements.

Operating income: Operating income increased 6% to \$ 1.4 billion for fiscal 2019 and 3% to \$ 1.3 billion for fiscal 2018. The fluctuations in operating income were attributable to the factors previously discussed. Operating income, as a percent of total revenue, was 36.3%, 38.2%, and 39.8% for the fiscal years 2019, 2018, and 2017, respectively. Adjusted operating income increased 4% to \$ 1.4 billion for fiscal 2019 and 6% to \$1.3 billion for fiscal 2018. See the "Non-GAAP Financial Measures" section of this Item 7 for further discussion of this non-GAAP measure.

Interest (expense)/income, net: Interest (expense)/income, net, primarily represents interest expense incurred on our debt instruments, netted against earnings from our cash and cash equivalents and corporate investments in available-for-sale securities. Investment income does not include interest on funds held for clients, which is included in total revenue. We recognized \$ 3.3 million of net interest expense for fiscal 2019 and \$ 8.6 million of net investment income for fiscal 2018. Interest expense, net in fiscal 2019 included \$13.7 million of interest expense related to financing used to partially fund the acquisition of Oasis. In addition, average investment balances decreased in fiscal 2019 as corporate investments were liquidated to partially fund the Oasis acquisition. This decrease was partially offset by higher average interest rates earned. Investment income, net increased from \$5.2 million for fiscal 2017 to \$8.6 million for fiscal 2018. This increase was primarily due to higher average interest rates earned and an increase in average investment balances, which was the result of higher net income partially offset by share repurchases, business acquisitions, and an increase in the rate for quarterly dividend payments.

Income taxes: Our effective income tax rate was 24.4% for fiscal 2019, 23.5% for fiscal 2018, and was 34.4% for fiscal 2017. The effective income tax rates for both fiscal 2019 and fiscal 2018 benefited from the enactment of the Tax Act. In fiscal 2018, as a result of the Tax Act, we recorded a non-recurring net tax benefit for the revaluation of our net deferred tax liabilities. This amount impacted diluted earnings per share by approximately \$0.23 per diluted share for fiscal 2018. In addition, as it relates to the Tax Act, our effective income tax rate for both fiscal 2019 and fiscal 2018 benefited from a reduced statutory tax rate applied to taxable income. The effective income tax rates in all periods were impacted by recognition of net discrete tax benefits related to employee stock-based compensation payments. Additional discrete tax items recognized during each respective period are insignificant. Refer to Note K of the Notes to Consolidated Financial Statements contained in Item 8 of this Form 10-K for additional disclosures on income taxes.

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Net income and diluted earnings per share: Net income increased 4 % to \$ 1.0 billion for fiscal 2019 and 20 % to \$ 994.1 million for fiscal 2018 . Diluted earnings per share increased 4 % to \$ 2.86 per diluted share for fiscal 2019 and 21 % to \$ 2.75 per diluted share for fiscal 2018 . These fluctuations were attributable to the factors previously discussed. Adjusted net income increased 11 % to \$ 1.0 billion for fiscal 2019 and increased 14 % to \$ 922.4 million for fiscal 2018 . Adjusted diluted earnings per share was \$ 2.84 per diluted share for fiscal 2019 and \$ 2.55 per diluted share for fiscal 2018 , reflecting increases of 11 % and 14 %, respectively . Refer to the “Non-GAAP Financial Measures” section that follows for a discussion of these non-GAAP measures.

Non-GAAP Financial Measures: A djusted operating income, adjusted net income, and adjusted diluted earnings per share are summarized as follows:

| \$ in millions | | | 2018 | | 2017 | |
|---|------------|--------|----------------------------|--------|----------------------------|--|
| | 2019 | Change | As adjusted ⁽¹⁾ | Change | As adjusted ⁽¹⁾ | |
| Operating income | \$ 1,371.3 | 6 % | \$ 1,291.5 | 3 % | \$ 1,253.9 | |
| Non-GAAP adjustments: | | | | | | |
| Termination of license agreements ⁽²⁾ | — | | 32.6 | | — | |
| Total non-GAAP adjustments | — | | 32.6 | | — | |
| Adjusted operating income | \$ 1,371.3 | 4 % | \$ 1,324.1 | 6 % | \$ 1,253.9 | |
| Net income | \$ 1,034.4 | 4 % | \$ 994.1 | 20 % | \$ 826.3 | |
| Non-GAAP adjustments: | | | | | | |
| Excess tax benefit related to employee stock-based compensation payments ⁽³⁾ | (8.3) | | (12.9) | | (18.3) | |
| Revaluation of net deferred tax liabilities ⁽⁴⁾ | 1.7 | | (83.5) | | — | |
| Termination of license agreements ⁽²⁾ | — | | 24.7 | | — | |
| Total non-GAAP adjustments | (6.6) | | (71.7) | | (18.3) | |
| Adjusted net income | \$ 1,027.8 | 11 % | \$ 922.4 | 14 % | \$ 808.0 | |
| Diluted earnings per share | \$ 2.86 | 4 % | \$ 2.75 | 21 % | \$ 2.28 | |
| Non-GAAP adjustments: | | | | | | |
| Excess tax benefit related to employee stock-based compensation payments ⁽³⁾ | (0.02) | | (0.04) | | (0.05) | |
| Revaluation of net deferred tax liabilities ⁽⁴⁾ | — | | (0.23) | | — | |
| Termination of license agreements ⁽²⁾ | — | | 0.07 | | — | |
| Total non-GAAP adjustments | (0.02) | | (0.20) | | (0.05) | |
| Adjusted diluted earnings per share | \$ 2.84 | 11 % | \$ 2.55 | 14 % | \$ 2.23 | |

- (1) Amounts have been adjusted to reflect the adoption of ASC Topic 606.
- (2) Additional expense and corresponding tax benefit recognized as a result of the termination of certain license agreements. This event is not expected to recur.
- (3) Net tax windfall or shortfall benefits related to employee stock-based compensation payments recognized in income taxes. This item is subject to volatility and will vary based on employee decisions on exercising employee stock options and fluctuations in our stock price, neither of which is within the control of management.
- (4) Non-recurring tax benefits recognized as a result of the Tax Act related to the revaluation of net deferred tax liabilities and the one-time tax charge as a result of updated guidance on Internal Revenue Code Section 162(m).

In addition to reporting operating income, net income, and diluted earnings per share, which are U.S. GAAP measures, we present adjusted operating income, adjusted net income, and adjusted diluted earnings per share, which are non-GAAP measures. We believe adjusted operating income, adjusted net income, and adjusted diluted earnings per share are appropriate additional measures, as they are indicators of our core business operations performance period over period. Adjusted operating income, adjusted net income, and adjusted diluted earnings per share are not calculated through the application of U.S. GAAP and are not required forms of disclosure by the SEC. As such, they should not be considered as a substitute for the U.S. GAAP measures of operating income, net income, and diluted earnings per share, and therefore should not be used in isolation, but in conjunction with the U.S. GAAP measures. The use of any non-GAAP measure may produce results that vary from the U.S. GAAP measure and may not be comparable to a similarly defined non-GAAP measure used by other companies.

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Liquidity and Capital Resources

Our financial position as of May 31, 2019 remained strong with cash, restricted cash, and total corporate investments of \$779.9 million and total long-term debt of \$ 796.4 million. We believe that our investments in an unrealized loss position as of May 31, 2019 were not other-than-temporarily impaired, nor has any event occurred subsequent to that date to indicate any other-than-temporary impairment. We anticipate that cash, restricted cash, and total corporate investments as of May 31, 2019 , along with projected operating cash flows and available short-term financing, will support our normal business operations, capital purchases, share repurchases, and dividend payments for the foreseeable future.

Financing

We maintain credit facilities and letters of credit as part of our normal and recurring business operations.

Credit Facilities: We maintain three committed, unsecured credit facilities as follows:

| <u>Bank</u> | <u>Borrower ⁽¹⁾</u> | <u>Date Entered</u> | <u>Expiration Date</u> | <u>Maximum Amount Available</u> | <u>Purpose</u> |
|---|--------------------------------|---------------------|------------------------|---------------------------------|--|
| JP Morgan Chase Bank, N.A. ⁽²⁾ | Paychex of New York, LLC | August 5, 2015 | August 5, 2020 | \$1 Billion | To meet short-term funding requirements. |
| JP Morgan Chase Bank, N.A. ⁽²⁾ | Paychex of New York, LLC | August 17, 2017 | August 17, 2022 | \$500 Million | To meet short-term funding requirements. |
| PNC Bank, National Association (“PNC”) | Paychex Advance, LLC | March 17, 2016 | March 17, 2020 | \$150 Million | To finance working capital needs and general corporate purposes. |

(1) Borrower is a wholly owned subsidiary of the Company.

(2) JP Morgan Chase Bank, N.A. (“JPM”) acts as the administrative agent for this syndicated credit facility.

For all credit facilities, obligations under any facility are guaranteed by the Company and certain of its subsidiaries and will bear interest at competitive rates based on options provided to the borrower. Upon the expiration date, any borrowings outstanding will mature and be payable on such date .

JPM \$1 Billion Credit Facility: There were no borrowings outstanding under this credit facility as of May 31, 2019. Details of borrowings under this credit facility are as follows:

| <u>\$ in millions</u> | <u>Year ended May 31,</u> | |
|----------------------------------|---------------------------|-------------|
| | <u>2019</u> | <u>2018</u> |
| Number of days borrowed | 95 | 22 |
| Maximum amount borrowed | \$ 483.0 | \$ 700.0 |
| Weighted-average amount borrowed | \$ 387.7 | \$ 319.1 |
| Weighted-average interest rate | 3.64 % | 4.27 % |

We typically borrow on an overnight basis. In addition to overnight borrowings, we also borrowed:

- Fiscal 2019 - \$400.0 million for 84 days at a weighted-average LIBOR-based interest rate of 3.45% to temporarily fund the acquisition of Oasis. This temporary borrowing was subsequently refinanced as outlined in Note N to the financial statements;
- Fiscal 2018 - \$100.0 million for a three-day period at a weighted-average interest rate of 4.25%.

Subsequent to May 31, 2019, we borrowed two times, on an overnight basis, \$187.8 million on a weighted-average basis under this line.

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JPM \$500 Million Credit Facility: There were no borrowings outstanding under this credit facility as of May 31, 2019. Details of borrowings under this credit facility are as follows:

| \$ in millions | Year ended May 31, | |
|----------------------------------|---------------------------|-------------|
| | 2019 | 2018 |
| Number of days borrowed | 92 | 42 |
| Maximum amount borrowed | \$ 400.0 | \$ 400.0 |
| Weighted-average amount borrowed | \$ 375.6 | \$ 144.8 |
| Weighted-average interest rate | 3.55 % | 2.80 % |

We typically borrow on an overnight basis. In addition to overnight borrowings, we also borrowed:

- Fiscal 2019 – \$400 million for 84 days at a weighted-average LIBOR-based interest rate of 3.45% to temporarily fund the acquisition of Oasis. This temporary borrowing was subsequently refinanced as outlined in Note N to the financial statements;
- Fiscal 2018 – \$300.0 million for seven days and \$75.0 million for 30 days at weighted average LIBOR-based interest rates of 2.13% and 2.19%, respectively.

Subsequent to May 31, 2019, we borrowed two times, on an overnight basis, \$178.0 million on a weighted-average basis under this line.

PNC \$150 Million Credit Facility: There were no borrowings outstanding under this credit facility as of May 31, 2019. Details of borrowings under this credit facility are as follows:

| \$ in millions | Year ended May 31, | |
|----------------------------------|---------------------------|-------------|
| | 2019 | 2018 |
| Number of days borrowed | 359 | 358 |
| Maximum amount borrowed | \$ 58.9 | \$ 59.9 |
| Weighted-average amount borrowed | \$ 56.1 | \$ 57.2 |
| Weighted-average interest rate | 2.81 % | 1.94 % |

Subsequent to May 31, 2019, we borrowed approximately \$54.9 million on under this line, which remains outstanding as of the date of this report.

All of our credit facilities contain various financial and operational covenants that are usual and customary for such arrangements. We were in compliance with all of these covenants as of May 31, 2019.

Certain lenders under these credit facilities, and their respective affiliates, have performed, and may in the future perform for us, various commercial banking, investment banking, underwriting, and other financial advisory services, for which they have received, and will continue to receive in the future, customary fees and expenses.

Long-term financing : On March 13, 2019, we borrowed \$800.0 million to replace short-term borrowings under the JPM credit facilities used to fund the acquisition of Oasis through the issuance of the following long-term private placement debt:

| In millions | May 31, 2019 |
|--|-------------------------|
| Senior Notes, Series A | \$ 400.0 |
| Senior Notes, Series B | 400.0 |
| Total long-term borrowings | 800.0 |
| Less: Debt issuance costs, net of accumulated amortization | (3.6) |
| Long-term borrowings, net of debt issuance costs | \$ 796.4 |

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Certain information related to the Senior Notes are as follows:

| | Senior Notes | Senior Notes |
|-------------------------|-------------------------|-------------------------|
| | Series A | Series B |
| Stated interest rate | 4.07% | 4.25% |
| Effective interest rate | 4.16% | 4.32% |
| Interest rate type | Fixed | Fixed |
| Interest payment dates | Semi-annual, in arrears | Semi-annual, in arrears |
| Principal payment dates | March 13, 2026 | March 13, 2029 |
| Note type | Unsecured | Unsecured |

The effective interest rates for each note series includes the interest on the note and amortization of debt issuance costs.

The Senior Notes contain customary representations, warranties, affirmative and negative covenants, including financial covenants that are usual and customary for such arrangements. We were in compliance with all of these covenants as of May 31, 2019.

Letters of credit: As of May 31, 2019, we had irrevocable standby letters of credit available totaling \$148.9 million, required to secure commitments for certain insurance policies. The letters of credit expire at various dates between July 2019 and July 2020. No amounts were outstanding on these letters of credit during fiscal 2019 or as of May 31, 2019. Subsequent to May 31, 2019, the letter of credit expiring in July 2019 was renewed through July 2020.

Other commitments: The following table summarizes our significant contractual obligations as of May 31, 2019:

| In millions | Payments due by period | | | | |
|---|------------------------|---------------------|-----------|-----------|----------------------|
| | Total | Less than 1 year | 1-3 years | 4-5 years | More than 5 years |
| Operating leases ⁽¹⁾ | \$ 123.9 | \$ 37.7 | \$ 51.2 | \$ 24.3 | \$ 10.7 |
| Purchase obligations ⁽²⁾ | 119.2 | 105.1 | 13.8 | 0.3 | — |
| Workers' compensation estimated obligations | 170.7 | 71.1 | 50.2 | 18.6 | 30.8 |
| Debt service obligations ⁽³⁾ | 1,084.0 | 33.3 | 66.6 | 66.5 | 917.6 |
| Total | \$ 1,497.8 | \$ 247.2 | \$ 181.8 | \$ 109.7 | \$ 959.1 |

- (1) Operating leases are primarily for office space and equipment used in our branch operations.
- (2) Purchase obligations include our estimate of the minimum outstanding commitments under purchase orders to buy goods and services and legally binding contractual arrangements with future payment obligations. Included in the total purchase obligations is \$5.6 million of commitments to purchase capital assets. Amounts actually paid under certain of these arrangements may be different due to variable components of these agreements.
- (3) Includes principal and interest payments on our Senior Notes. Refer to Note N of the Notes to Consolidated Financial Statements contained in Item 8 of this Form 10-K for more information.

The liability for uncertain tax positions, including interest and net of federal benefits, was approximately \$21.6 million as of May 31, 2019. Refer to Note K of the Notes to Consolidated Financial Statements contained in Item 8 of this Form 10-K for more information on income taxes. We are not able to reasonably estimate the timing of future cash flows related to this liability and have excluded it from the table above.

During fiscal 2017 we entered into a limited partnership agreement to contribute a maximum amount of \$10.0 million to a venture capital fund in the financial technology sector, of which approximately \$6.1 million has been contributed as of May 31, 2019. In late fiscal 2019, we entered into a second limited partnership agreement to contribute a maximum amount of \$10.0 million to a venture capital fund in the financial technology sector, of which \$0.1 million has been contributed as of May 31, 2019. The timing of future contributions to be made to these venture capital funds cannot be specifically or reasonably determined and thus have been excluded from the table above.

In the normal course of business, we make representations and warranties that guarantee the performance of services under service arrangements with clients. Historically, there have been no material losses related to such guarantees. In addition, we have entered into indemnification agreements with our officers and directors, which require us to defend and, if necessary, indemnify these individuals for certain pending or future legal claims as they relate to their services provided to us.

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We currently self-insure the deductible portion of various insured exposures under certain corporate employee benefit plans. Our estimated loss exposure under these insurance arrangements is recorded in other current liabilities on our Consolidated Balance Sheets. Historically, the amounts accrued have not been material and are not material as of the reporting date. We also maintain corporate insurance coverage in addition to our purchased primary insurance policies for gap coverage for employment practices liability, errors and omissions, warranty liability, theft and embezzlement, cyber threats, and acts of terrorism; and capacity for deductibles and self-insured retentions through our captive insurance company.

We have substantially completed our plan for a new multi-building Paychex campus, including the renovation of over 300,000 square feet based in Rochester, NY. In fiscal 2018, we completed the purchase of five buildings for a combined cost of approximately \$34.7 million and placed approximately \$16.0 million in escrow for the building renovations. There was no remaining balance in escrow as of May 31, 2019, and building renovations are expected to be completed later this calendar year.

Off-Balance Sheet Arrangements

As part of our ongoing business, we do not participate in transactions with unconsolidated entities which would have been established for the purpose of facilitating off-balance sheet arrangements or other limited purposes. We do maintain investments as a limited partner in both low-income housing projects and venture capital funds focused on the financial technology sector. These are not considered part of our ongoing operations. These investments are accounted for under the equity method of accounting and represented less than one percent of our total assets as of May 31, 2019.

Operating Cash Flow Activities

| In millions | Year ended May 31, | | |
|--|--------------------|------------------------------------|------------------------------------|
| | 2019 | 2018 As Adjusted ⁽¹⁾ | 2017 As Adjusted ⁽¹⁾ |
| Net income | \$ 1,034.4 | \$ 994.1 | \$ 826.3 |
| Non-cash adjustments to net income | 464.9 | 389.0 | 431.7 |
| Cash used in changes in operating assets and liabilities | (227.8) | (106.7) | (297.6) |
| Net cash provided by operating activities | \$ 1,271.5 | \$ 1,276.4 | \$ 960.4 |

(1) Amounts have been adjusted to reflect the adoption of ASC Topic 606.

The changes in our operating cash flows for both fiscal 2019 and fiscal 2018 compared to the prior fiscal year periods were due to higher net income. Net income in both fiscal 2019 and fiscal 2018 benefited from the enactment of the Tax Act. The change in our operating cash flows for fiscal 2019 was also due to higher adjustments for non-cash items, offset by fluctuations in our operating assets and liabilities. The increase in non-cash adjustments for fiscal 2019 was primarily due to a higher provision for deferred income taxes and higher amortization expense related to intangible assets acquired through the acquisitions of Oasis and Lessor. The fluctuations in our operating assets and liabilities between all periods were impacted by the timing of collections from PEO clients and payments, PEO payroll, income tax, and other liabilities. In addition, the larger outflows in fiscal 2019 and fiscal 2017 were impacted by higher accounts receivable balances related to growth in our payroll funding business for temporary staffing agency clients.

Investing Cash Flow Activities

| In millions | Year ended May 31, | | |
|---|--------------------|------------------------------------|------------------------------------|
| | 2019 | 2018 As Adjusted ⁽¹⁾ | 2017 As Adjusted ⁽¹⁾ |
| Net change in purchases and sales/maturities of available-for-sale securities | \$ (507.0) | \$ 1,372.7 | \$ (559.3) |
| Purchases of property and equipment | (123.8) | (154.0) | (94.3) |
| Acquisition of businesses, net of cash acquired | (992.2) | (180.4) | — |
| Purchases of other assets | (5.3) | (39.8) | (8.6) |
| Net cash (used in)/provided by investing activities | \$ (1,628.3) | \$ 998.5 | \$ (662.2) |

(1) Amounts have been adjusted to reflect the adoption of Accounting Standards Update No. 2016-18, "Statement of Cash Flows (Topic 230): Restricted Cash (a consensus of the Financial Accounting Standards Board Emerging Issues Task Force)."

Purchases and sales/maturities of available-for-sale securities: Available-for-sale securities include funds held for clients and corporate investments. The portfolio of funds held for clients and corporate investments is detailed in Note G of the Notes to Consolidated Financial Statements contained in Item 8 of this Form 10-K.

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Fluctuations in the net change in purchases and sales/maturities of available-for-sale securities are largely due to timing within the client funds portfolio. The amount of funds held for clients will vary based upon the timing of collection of client funds, and the related remittance of funds to applicable tax or regulatory agencies for payroll tax administration services and to employees of clients utilizing employee payment services. Specific timing impacting cash flows for fiscal years 2019, 2018, and 2017 are discussed further in the financing cash flows discussion of net changes in client fund obligations. For fiscal 2019, in addition to timing fluctuations, the net change in funds held for clients was impacted by changes in investment mix. Fiscal 2018 experienced greater sales of investments to fund client remittances than purchases of investments, whereas fiscal 2017 reflected greater purchases of investments than sales.

Additional discussion of interest rates and related risks is included in the “Market Risk Factors” section contained in Item 7A of this Form 10-K.

Other investing activities: To support our continued client and ancillary product growth, purchases of property and equipment were made for data processing equipment and software, and for the expansion and upgrade of various operating facilities.

The net cash outflow for purchases of property and equipment during fiscal 2018 includes the purchase of five buildings and ongoing renovations of over 300,000 square feet of existing space in Rochester, NY.

Acquisition of businesses, net of cash acquired, reflects our acquisitions of Oasis in December 2018, Lessor in February 2018, and HROi in August 2017. For the Oasis and Lessor acquisitions consideration was cash while the HROi acquisition was a combination of cash and common stock.

Purchases of other assets relates primarily to client list acquisitions. During fiscal 2018, we resolved a contractual dispute with certain licensees. As it relates to this agreement, we acquired rights to certain client lists for approximately \$30.0 million.

Financing Cash Flow Activities

| In millions, except per share amounts | Year ended May 31, | | |
|--|--------------------|------------|------------|
| | 2019 | 2018 | 2017 |
| Net change in client fund obligations | \$ (950.6) | \$ 462.4 | \$ 317.3 |
| Net proceeds from long-term borrowings | 796.3 | — | — |
| Dividends paid | (826.8) | (739.7) | (662.3) |
| Repurchases of common shares | (56.9) | (143.1) | (166.2) |
| Activity related to equity-based plans | 29.5 | (3.4) | 28.5 |
| Net cash used in financing activities | \$ (1,008.5) | \$ (423.8) | \$ (482.7) |
| Cash dividends per common share | \$ 2.30 | \$ 2.06 | \$ 1.84 |

Net change in client fund obligations: The client fund obligations liability will vary based on the timing of collecting client funds, and the related required remittance of funds to applicable tax or regulatory agencies for payroll tax administration services and to employees of clients utilizing employee payment services. Collections from clients are typically remitted from one to 30 days after receipt, with some items extending to 90 days.

Client fund obligation balances are significantly impacted by the timing of the period end. Fluctuations in the net change in client fund obligations for the years presented are primarily the result of timing of collections and remittances and overall trends in client fund balances. May 31, 2019 fell on a Friday, which is a significant disbursement day for direct pay funds. May 31, 2018 fell on a Thursday, which is a significant collection day for direct pay funds. These funds were then paid out on Friday June 1, 2018. May 31, 2017 fell on a Wednesday which is not a significant collection day for payroll tax funds but the federal semi-weekly tax payment was delayed until Thursday, June 1, 2017 due to the Memorial Day holiday weekend. As such, a higher than expected client fund obligation existed on May 31, 2017.

Net proceeds from long-term borrowings: In fiscal 2019, we financed \$800.0 million related to the acquisition of Oasis through the issuance of long-term private placement debt. Refer to Note N of the Notes to Consolidated Financial Statements contained in Item 8 of this Form 10-K for additional disclosures on our long-term financing.

Dividends paid: In May 2019 and April 2018, our Board increased our quarterly dividend to shareholders by 11% to \$0.62 per share from \$0.56 per share, and by 12% to \$0.56 per share from \$0.50 per share, respectively. The dividends paid as a percentage of net income totaled 80%, 79%, and 81% for fiscal years 2019, 2018, and 2017, respectively. The payment of future dividends is dependent on our future earnings and cash flow, and is subject to the discretion of our Board.

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Repurchases of common shares: In July 2016, our Board approved a program to repurchase up to \$350.0 million of our common stock, authorized through May 31, 2019. During fiscal 2019, we repurchased 0.7 million shares for a total of \$56.9 million. During fiscal 2018, we repurchased 2.5 million shares for a total of \$143.1 million. During fiscal 2017, we repurchased 2.9 million shares for a total of \$166.2 million, of which \$59.7 million was repurchased under a previously authorized common stock repurchase program. All shares repurchased were retired. In May 2019, our Board approved a program to repurchase up to \$400.0 million of our common stock, with authorization running from June 1, 2019 through May 31, 2022. The purpose of these programs is to manage common stock dilution.

Activity related to equity-based plans: The increase in cash flows related to stock-based awards for fiscal 2019 compared to fiscal 2018 and the decrease for fiscal 2018 compared to fiscal 2017 were largely driven by changes in proceeds received from the exercise of stock options. Shares of common stock issued through the exercise of stock options were 0.9 million shares, 0.6 million shares, and 1.4 million shares for fiscal years 2019, 2018, and 2017, respectively. Refer to Note F of the Notes to Consolidated Financial Statements contained in Item 8 of this Form 10-K for additional disclosures on our stock-based compensation plans.

Other

Recently issued accounting pronouncements: Refer to Note A of the Notes to Consolidated Financial Statements contained in Item 8 of this Form 10-K for a discussion of recently issued accounting pronouncements.

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Critical Accounting Policies

Note A of the Notes to Consolidated Financial Statements contained in Item 8 of this Form 10-K discusses the significant accounting policies of Paychex. Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these financial statements requires us to make estimates, judgments, and assumptions that affect reported amounts of assets, liabilities, revenue, and expenses. On an ongoing basis, we evaluate the accounting policies and estimates used to prepare the consolidated financial statements. We base our estimates on historical experience, future expectations, and assumptions believed to be reasonable under current facts and circumstances. Actual amounts and results could differ from these estimates. Certain accounting policies that are deemed critical to our results of operations or financial position are discussed below.

Revenue recognition: Service revenue is recognized in the period services are rendered and earned under service arrangements with clients where service fees are fixed or determinable and collectability is reasonably assured. Our service revenue is largely attributable to processing services where the fee is based on a fixed amount per processing period or a fixed amount per processing period plus a fee per employee or transaction processed. Fees earned for funding of temporary staffing clients' payrolls via purchase of accounts receivable are based on a percentage of funding amounts as specified in the client contract. The revenue earned from delivery service for the distribution of certain client payroll checks and reports is included in service revenue, and the costs for delivery are included in operating expenses on the Consolidated Statements of Income and Comprehensive Income.

We receive advance payments for set-up fees on some of our service offerings from our clients. Advance payments received for certain of our service offerings are considered a material right. We defer the revenue associated with these advance payments, recognizing the revenue and related expenses over the expected period to which the right exists.

PEO revenue is included in service revenue and is reported net of certain pass-through costs billed and incurred, which primarily include payroll wages, payroll taxes, including federal and state unemployment insurance, and certain guaranteed cost benefit premiums. Direct costs related to workers' compensation and certain benefit plans where we retain risk are recognized as operating expenses rather than as a reduction in service revenue.

Interest on funds held for clients is earned primarily on funds that are collected from clients before due dates for payroll tax administration services and for employee payment services, and invested until remittance to the applicable tax or regulatory agencies or client employees. These collections from clients are typically remitted from one to 30 days after receipt, with some items extending to 90 days. The interest earned on these funds is included in total revenue on the Consolidated Statements of Income and Comprehensive Income because the collecting, holding, and remitting of these funds are components of providing these services.

PEO insurance reserves: As part of the PEO service, we offer workers' compensation insurance and health insurance to clients for the benefit of client employees. Workers' compensation insurance is primarily provided under fully insured high deductible workers' compensation insurance policies. Workers' compensation insurance reserves are established to provide for the estimated costs of paying claims up to per occurrence liability limits. In establishing the PEO workers' compensation insurance reserves, we use an independent actuarial estimate of undiscounted future cash payments that would be made to settle the claims.

With respect to our PEO health insurance, we offer various health insurance plans that take the form of either fully insured guaranteed cost plans with various national insurance carriers or a fully insured minimum premium insurance arrangement with coverage provided through a single national carrier. Under the minimum premium insurance arrangement, our health benefits insurance reserves are established to provide for the payment of claims in accordance with our service contract with the carrier. The claims liability includes estimates for reported losses, plus amounts for those claims incurred but not reported, and estimates of certain expenses associated with processing and settling the claims.

Estimating the ultimate cost of future claims is an uncertain and complex process based upon historical loss experience and actuarial loss projections, and is subject to change due to multiple factors, including economic trends, changes in legal liability law, and damage awards, all of which could materially impact the reserves as reported in the consolidated financial statements. Accordingly, final claim settlements may vary from the present estimates, particularly when those payments may not occur until well into the future. We regularly review the adequacy of our estimated insurance reserves. Adjustments to previously established reserves are reflected in the results of operations for the period in which the adjustment is identified. Such adjustments could possibly be significant, reflecting any combination of new and adverse or favorable trends. Adjustments to previously established reserves were not material for the fiscal years 2019, 2018, or 2017.

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Goodwill and other intangible assets: Goodwill is not amortized, but instead is tested for impairment on an annual basis and between annual tests if an event occurs or circumstances change in a way to indicate that there has been a potential decline in the fair value of the reporting unit. We perform our annual impairment testing in our fiscal fourth quarter. For fiscal 2019, it was determined that the Company has three reporting units. A qualitative analysis was performed for all reporting units in fiscal 2019, to determine if it is more-likely-than-not that the fair value of the reporting units had declined below its carrying value. The qualitative assessment considered various financial, macroeconomic, industry, and reporting unit specific qualitative factors. Based on the results of our testing, no impairment loss was recognized in the results of operations for fiscal 2019, 2018, or 2017. Subsequent to the latest review, there have been no events or circumstances that indicate any potential impairment of the Company's goodwill balance.

We also test intangible assets with indefinite useful lives for potential impairment when events or changes in circumstances indicate that the carrying value may not be recoverable. We have determined that there is no impairment of intangible assets with indefinite useful lives for fiscal 2019, 2018, or 2017.

Impairment of Long-Lived Assets: Long-lived assets, including intangible assets with finite lives, are reviewed for impairment when events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized for the amount by which the carrying amount of the asset exceeds the estimated fair value of the asset. We have determined that there is no impairment of long-lived assets for fiscal 2019, 2018, or 2017.

Stock-based compensation costs: All stock-based awards to employees, including grants of stock options, are recognized as compensation costs in our consolidated financial statements based on their fair values measured as of the date of grant. We estimate the fair value of stock option grants using a Black-Scholes option pricing model. This model requires various assumptions as inputs including expected volatility of the Paychex stock price and expected option life. We estimate volatility based on a combination of historical volatility using stock prices over a period equal to the expected option life and implied market volatility. Expected option life is estimated based on historical exercise behavior. We periodically reassess our assumptions as well as our choice of valuation model and will reconsider use of this model if additional information becomes available in the future indicating that another model would provide a more accurate estimate of fair value, or if characteristics of future grants would warrant such a change.

The fair value of stock awards is determined based on the stock price at the date of grant. For grants that do not accrue dividends or dividend equivalents, the fair value is the stock price reduced by the present value of estimated dividends over the vesting period or performance period.

We estimate forfeitures and only record compensation costs for those awards that are expected to vest. Our assumptions for forfeitures were determined based on type of award and historical experience. Forfeiture assumptions are adjusted at the point in time a significant change is identified, with any adjustment recorded in the period of change, and the final adjustment at the end of the requisite service period to equal actual forfeitures.

The assumptions of volatility, expected option life, and forfeitures all require significant judgment and are subject to change in the future due to factors such as employee exercise behavior, stock price trends, and changes to type or provisions of stock-based awards. Any change in one or more of these assumptions could have a material impact on the estimated fair value of a future award.

Refer to Note F of the Notes to Consolidated Financial Statements contained in Item 8 of this Form 10-K for further discussion of our stock-based compensation plans.

Income taxes: We account for deferred taxes by recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements or tax returns. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the fiscal year in which the differences are expected to reverse. We record a deferred tax asset related to the stock-based compensation costs recognized for certain stock-based awards. At the time of the exercise of non-qualified stock options or vesting of stock awards, we recognize any excess tax benefit within income taxes in the Consolidated Statements of Income and Comprehensive Income.

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The Tax Act enacted in December 2017 was the most comprehensive tax reform legislation approved in more than two decades and made broad and complex changes to the U.S. federal corporate income taxation, including, but not limited to: (i) reducing the statutory corporate tax rate from 35% to 21% (a blended statutory tax rate of 29.2% for fiscal 2018); (ii) creating new or furthering limitations to the deductibility of officer compensation, interest, meals, entertainment, and other expenses; and (iii) changing from a worldwide to a territorial taxation system. As a result of the Tax Act, we made a one-time revaluation of our net deferred tax liabilities and made a change in the Company's annual effective income tax rate applied to income before income taxes for the first six months of fiscal 2018. Refer to Note K of the Notes to Consolidated Financial Statements contained in Item 8 of this Form 10-K for further details.

We maintain a reserve for uncertain tax positions. We evaluate tax positions taken or expected to be taken in a tax return for recognition in our consolidated financial statements. Prior to recording the related tax benefit in our consolidated financial statements, we must conclude that tax positions will be more-likely-than-not to be sustained, assuming those positions will be examined by taxing authorities with full knowledge of all relevant information. The benefit recognized in our consolidated financial statements is the amount we expect to realize after examination by taxing authorities. If a tax position drops below the more-likely-than-not standard, the benefit can no longer be recognized. Assumptions, judgment, and the use of estimates are required in determining if the more-likely-than-not standard has been met when developing the provision for income taxes and in determining the expected benefit. A change in the assessment of the more-likely-than-not standard could impact our results of operations or financial position. Refer to Note K of the Notes to Consolidated Financial Statements contained in Item 8 of this Form 10-K for further discussion of our reserve for uncertain tax positions.

[Table of Contents](#)**Item 7A. Quantitative and Qualitative Disclosures About Market Risk****Market Risk Factors**

Changes in interest rates and interest rate risk: Funds held for clients are primarily comprised of short-term funds and available-for-sale securities. Corporate investments are primarily comprised of available-for-sale securities. As a result of our investing activities, we are exposed to changes in interest rates that may materially affect our results of operations and financial position. Changes in interest rates will impact the earnings potential of future investments and will cause fluctuations in the fair value of our longer-term available-for-sale securities. We follow an investment strategy of protecting principal and optimizing liquidity. A substantial portion of our portfolios are invested in high credit quality securities with ratings of AA or higher, and A-1/P-1 ratings on short-term securities. We invest predominately in municipal bonds – including general obligation bonds; pre-refunded bonds, which are secured by a U.S. government escrow; and essential services revenue bonds – along with U.S. government agency and treasury securities and corporate bonds. We limit the amounts that can be invested in any single issuer and invest primarily in short- to intermediate-term instruments whose fair value is less sensitive to interest rate changes. We manage the available-for-sale securities to a benchmark duration of two and one-half to three and three-quarters years.

During fiscal 2019, our primary short-term investment vehicles were government agency discount notes, VRDNs, and bank demand deposit accounts. We have no exposure to high-risk or illiquid investments. We have insignificant exposure to European investments. We have not and do not utilize derivative financial instruments to manage our interest rate risk.

During fiscal 2019, the average interest rate earned on our combined funds held for clients and corporate investment portfolios was 1.9%, compared to 1.5% and 1.2% for fiscal years 2018 and 2017, respectively. When interest rates are rising, the full impact of higher interest rates will not immediately be reflected in net income due to the interaction of short- and long-term interest rate changes. During a rising interest rate environment, earnings increase from our short-term investments, and over time earnings increase from our longer-term available-for-sale securities. Earnings from the available-for-sale securities, which as of May 31, 2019 had an average duration of 2.9 years, would not reflect increases in interest rates until the investments are sold or mature and the proceeds are reinvested at higher rates.

The amortized cost and fair value of available-for-sale securities that had stated maturities as of May 31, 2019 are shown below by contractual maturity. Expected maturities can differ from contractual maturities because borrowers may have the right to prepay obligations without prepayment penalties.

| In millions | May 31, 2019 | |
|--|----------------|------------|
| | Amortized cost | Fair value |
| Maturity date: | | |
| Due in one year or less | \$ 183.5 | \$ 183.4 |
| Due after one year through three years | 898.9 | 903.1 |
| Due after three years through five years | 989.2 | 998.7 |
| Due after five years | 1,529.5 | 1,535.6 |
| Total | \$ 3,601.1 | \$ 3,620.8 |

VRDNs are primarily categorized as due after five years in the table above as the contractual maturities on these securities are typically 20 to 30 years. Although these securities are issued as long-term securities, they are priced and traded as short-term instruments because of the liquidity provided through the tender feature.

The Federal Reserve has periodically raised the Federal Funds rate in each of fiscal years 2019, 2018, and 2017. As of May 31, 2019, the Federal Funds rate was in the range of 2.25% to 2.50% as compared to a range of 1.50% to 1.75% as of May 31, 2018, and in the range of 0.75% to 1.00% as of May 31, 2017.

Calculating the future effects of changing interest rates involves many factors. These factors include, but are not limited to:

- daily interest rate changes;
- seasonal variations in investment balances;
- actual duration of short-term and available-for-sale securities;
- the proportion of taxable and tax-exempt investments;
- changes in tax-exempt municipal rates versus taxable investment rates, which are not synchronized or simultaneous; and

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- financial market volatility and the resulting effect on benchmark and other indexing interest rates.

Subject to these factors and under normal financial market conditions, a 25-basis-point change in taxable interest rates generally affects our tax-exempt interest rates by approximately 17 basis points. Under normal financial market conditions, the impact to earnings from a 25-basis-point change in short-term interest rates would be approximately \$3.0 million to \$4.0 million, after taxes, for a twelve-month period. Such a basis point change may or may not be tied to changes in the Federal Funds rate.

Our total investment portfolio (funds held for clients and corporate investments) averaged approximately \$ 4.8 billion for fiscal 2019 . Our anticipated allocation is approximately 45% invested in short-term securities and VRDNs with an average duration of less than 30 days, and 55% invested in available-for-sale securities with an average duration of two and one-half to three and three-quarters years.

The combined funds held for clients and corporate available-for-sale securities reflected a net unrealized gain of \$19.7 million as of May 31, 2019 , compared with a net unrealized loss of \$38.3 million as of May 31, 2018 . Refer to Note G of the Notes to Consolidated Financial Statements contained in Item 8 of this Form 10-K for additional disclosures on fair value measurements.

During fiscal 2019 , the net unrealized gain or loss on our investment portfolios ranged from an unrealized gain of \$19.7 million to an unrealized loss of \$ 60.7 million. During fiscal 2018 , the net unrealized gain or loss on our investment portfolios ranged from an unrealized gain of \$ 41.4 million to an unrealized loss of \$ 54.5 million. The net unrealized gain on our investment portfolios was approximately \$31.6 million as of July 17, 2019 .

As of May 31, 2019 and 2018 , we had \$3.6 billion and \$3.1 billion, respectively, invested in available-for-sale securities at fair value. The weighted-average yield-to-maturity was 2.1% and 1.9% as of May 31, 2019 and May 31, 2018, respectively. The weighted-average yield-to-maturity excludes available-for-sale securities tied to short-term interest rates such as the VRDNs. Assuming a hypothetical increase in longer-term interest rates of 25 basis points, the resulting potential decrease in fair value for our portfolio of available-for-sale securities as of May 31, 2019 , would be in the range of \$15.0 million to \$20.0 million. Conversely, a corresponding decrease in interest rates would result in a comparable increase in fair value. This hypothetical increase or decrease in the fair value of the portfolio would be recorded as an adjustment to the portfolio's recorded value, with an offsetting amount recorded in stockholders' equity. These fluctuations in fair value would have no related or immediate impact on the results of operations, unless any declines in fair value were considered to be other-than-temporary and an impairment loss recognized.

Credit risk: We are exposed to credit risk in connection with these investments through the possible inability of the borrowers to meet the terms of their bonds. We regularly review our investment portfolios to determine if any investment is other-than-temporarily impaired due to changes in credit risk or other potential valuation concerns. We believe that the investments we held as of May 31, 2019 were not other-than-temporarily impaired. While \$567.9 million of our available-for-sale securities had fair values that were below amortized cost, we believe that it is probable that the principal and interest will be collected in accordance with the contractual terms, and that unrealized losses of \$2.7 million were due to changes in interest rates and were not due to increased credit risk or other valuation concerns. A majority of these securities in an unrealized loss position as of May 31, 2019 and 2018 held an AA rating or better. We do not intend to sell these investments until the recovery of their amortized cost basis or maturity, and further believe that it is not more-likely-than-not that we will be required to sell these investments prior to that time. Our assessment that an investment is not other-than-temporarily impaired could change in the future due to new developments or changes in our strategies or assumptions related to any particular investment.

We have some credit risk exposure in connection with our purchase of accounts receivable as a means of providing payroll funding to clients in the temporary staffing industry. This credit risk exposure is diversified amongst multiple client arrangements and all such arrangements are regularly reviewed for potential write-off. No single client is material in respect to total accounts receivable, service revenue, or results of operations.

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Item 8. *Financial Statements and Supplementary Data*

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**REPORT ON MANAGEMENT'S ASSESSMENT OF
INTERNAL CONTROL OVER FINANCIAL REPORTING**

Management of Paychex, Inc. (the "Company") is responsible for establishing and maintaining adequate internal control over financial reporting as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended. The Company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the financial statements for external purposes in accordance with generally accepted accounting principles.

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.

Management assessed the effectiveness of the Company's internal control over financial reporting as of May 31, 2019. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in "Internal Control — Integrated Framework" (2013). Based on our assessment, management determined that the Company maintained effective internal control over financial reporting as of May 31, 2019.

On December 20, 2018, we completed our acquisition of Oasis Outsourcing Group Holdings, L.P. ("Oasis"). We are in the process of evaluating the existing controls and procedures of Oasis and integrating Oasis into our internal control over financial reporting. In accordance with Securities and Exchange Commission Staff guidance, permitting a company to exclude an acquired business from management's assessment of the effectiveness of internal control over financial reporting for the year in which the acquisition is completed, we have excluded Oasis from our assessment of the effectiveness of internal control over financial reporting as of May 31, 2019. Oasis represented 8% of the Company's total assets as of May 31, 2019 and 4% of the Company's revenues for the year ended May 31, 2019. The scope of management's assessment of the effectiveness of the design and operation of the Company's disclosure controls and procedures as of May 31, 2019 includes all of the Company's consolidated operations except for those disclosure controls and procedures of Oasis that are subsumed by internal control over financial reporting.

The Company's independent registered public accounting firm, PricewaterhouseCoopers LLP, is appointed by the Company's Audit Committee. PricewaterhouseCoopers LLP has audited the Consolidated Financial Statements included in this Annual Report on Form 10-K and the effectiveness of the Company's internal control over financial reporting as of May 31, 2019, and as a part of their integrated audit, has issued their report, included herein, on the effectiveness of the Company's internal control over financial reporting.

/s/ Martin Mucci

Martin Mucci

President and Chief Executive Officer

/s/ Efrain Rivera

Efrain Rivera

Senior Vice President, Chief Financial Officer, and Treasurer

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Paychex, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

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

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of May 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended May 31, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of May 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

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

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

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

As described in the Report on Management's Assessment of Internal Control Over Financial Reporting, management has excluded Oasis Outsourcing Group Holdings, L.P. from its assessment of internal control over financial reporting as of May 31, 2019 because it was acquired by the Company in a purchase business combination during the year ended May 31, 2019. We have also excluded Oasis Outsourcing Group Holdings, L.P. from our audit of internal control over financial reporting. Oasis Outsourcing Group Holdings, L.P. is a wholly-owned subsidiary whose total assets and total revenues excluded from management's assessment and our audit of internal control over financial reporting represent 8% and 4%, respectively, of the related consolidated financial statement amounts as of and for the year ended May 31, 2019.

Definition and Limitations of Internal Control over Financial Reporting

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

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company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ PricewaterhouseCoopers LLP
Rochester, New York
July 24 , 2019

We have served as the Company's auditor since 2013.

PA YCHEX, INC.

CONSOLIDATED STATEMENTS OF INCOME AND COMPREHENSIVE INCOME

In millions, except per share amounts

| Year ended May 31, | 2019 | 2018 As Adjusted ⁽¹⁾ | 2017 As Adjusted ⁽¹⁾ |
|--|-------------------|------------------------------------|------------------------------------|
| Revenue: | | | |
| Management Solutions | \$ 2,877.7 | \$ 2,758.4 | \$ 2,680.7 |
| PEO and Insurance Services | 814.2 | 555.8 | 421.7 |
| Total service revenue | 3,691.9 | 3,314.2 | 3,102.4 |
| Interest on funds held for clients | 80.6 | 63.5 | 50.6 |
| Total revenue | 3,772.5 | 3,377.7 | 3,153.0 |
| Expenses: | | | |
| Operating expenses | 1,177.8 | 1,018.2 | 919.4 |
| Selling, general and administrative expenses | 1,223.4 | 1,068.0 | 979.7 |
| Total expenses | 2,401.2 | 2,086.2 | 1,899.1 |
| Operating income | 1,371.3 | 1,291.5 | 1,253.9 |
| Interest (expense)/income, net | (3.3) | 8.6 | 5.2 |
| Income before income taxes | 1,368.0 | 1,300.1 | 1,259.1 |
| Income taxes | 333.6 | 306.0 | 432.8 |
| Net income | \$ 1,034.4 | \$ 994.1 | \$ 826.3 |
| Other comprehensive income/(loss), net of tax | 36.3 | (56.2) | (9.2) |
| Comprehensive income | \$ 1,070.7 | \$ 937.9 | \$ 817.1 |
| Basic earnings per share | \$ 2.88 | \$ 2.77 | \$ 2.30 |
| Diluted earnings per share | \$ 2.86 | \$ 2.75 | \$ 2.28 |
| Weighted-average common shares outstanding | 359.2 | 359.0 | 359.8 |
| Weighted-average common shares outstanding, assuming dilution | 361.8 | 361.5 | 362.6 |

⁽¹⁾ Amounts have been adjusted to reflect the adoption of Accounting Standards Codification (“ASC”) Topic 606, “Revenue from Contracts with Customers” (“ASC Topic 606”).

See Notes to Consolidated Financial Statements.

PA YCHEX, INC.
CONSOLIDATED BALANCE SHEETS
 In millions, except per share amounts

| As of May 31, | 2019 | 2018 As Adjusted ⁽¹⁾ |
|--|-------------------|------------------------------------|
| Assets | | |
| Cash and cash equivalents | \$ 673.6 | \$ 358.2 |
| Restricted cash | 50.6 | — |
| Corporate investments | 39.0 | 66.0 |
| Interest receivable | 27.4 | 32.2 |
| Accounts receivable, net of allowance for doubtful accounts | 420.5 | 374.6 |
| PEO unbilled receivables, net of advance collections | 406.3 | 117.8 |
| Prepaid income taxes | 22.6 | 17.0 |
| Prepaid expenses and other current assets | 233.9 | 224.0 |
| Current assets before funds held for clients | 1,873.9 | 1,189.8 |
| Funds held for clients | 3,803.8 | 4,703.8 |
| Total current assets | 5,677.7 | 5,893.6 |
| Long-term restricted cash | 6.5 | — |
| Long-term corporate investments | 10.2 | 295.5 |
| Property and equipment, net of accumulated depreciation | 408.7 | 393.5 |
| Intangible assets, net of accumulated amortization | 399.1 | 141.4 |
| Goodwill | 1,782.6 | 814.0 |
| Long-term deferred costs | 366.3 | 361.0 |
| Other long-term assets | 24.9 | 16.4 |
| Total assets | \$ 8,676.0 | \$ 7,915.4 |
| Liabilities | | |
| Accounts payable | \$ 75.9 | \$ 73.7 |
| Accrued corporate compensation and related items | 146.4 | 121.5 |
| Accrued worksite employee compensation and related items | 578.6 | 176.1 |
| Deferred revenue | 40.3 | 34.6 |
| Other current liabilities | 219.5 | 155.9 |
| Current liabilities before client fund obligations | 1,060.7 | 561.8 |
| Client fund obligations | 3,784.3 | 4,734.9 |
| Total current liabilities | 4,845.0 | 5,296.7 |
| Accrued income taxes | 27.3 | 18.4 |
| Deferred income taxes | 223.1 | 154.4 |
| Long-term borrowings, net of debt issuance costs | 796.4 | — |
| Other long-term liabilities | 164.7 | 89.1 |
| Total liabilities | 6,056.5 | 5,558.6 |
| Commitments and contingencies — Note Q | | |
| Stockholders' equity | | |
| Common stock, \$0.01 par value; Authorized: 600.0 shares; Issued and outstanding: 359.3 shares as of May 31, 2019 and 359.0 shares as of May 31, 2018, respectively. | 3.6 | 3.6 |
| Additional paid-in capital | 1,206.3 | 1,126.8 |
| Retained earnings | 1,409.5 | 1,262.6 |
| Accumulated other comprehensive income/(loss) | 0.1 | (36.2) |
| Total stockholders' equity | 2,619.5 | 2,356.8 |
| Total liabilities and stockholders' equity | \$ 8,676.0 | \$ 7,915.4 |

⁽¹⁾ Amounts have been adjusted to reflect the adoption of ASC Topic 606 and to provide further detail related to certain professional employer organization (“PEO”) balances.

See Notes to Consolidated Financial Statements.

PAY CHEX, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
 In millions

| | Common stock | | Additional paid-in capital | Retained earnings ⁽¹⁾ | Accumulated other comprehensive income/(loss) | Total |
|---|--------------|---------------|----------------------------------|-------------------------------------|--|-------------------|
| | Shares | Amount | | | | |
| Balance as of May 31, 2016 | 360.4 | \$ 3.6 | \$ 952.7 | \$ 926.2 | \$ 29.2 | \$ 1,911.7 |
| Net income | | | | 826.3 | | 826.3 |
| Cumulative impact of adoption of ASC Topic 606 | | | | 262.9 | | 262.9 |
| Unrealized losses on securities, net of tax | | | | | (9.2) | (9.2) |
| Cash dividends declared (\$1.84 per share) | | | | (662.3) | | (662.3) |
| Repurchases of common shares | (2.9) | | (5.4) | (160.8) | | (166.2) |
| Stock-based compensation | | | 35.4 | | | 35.4 |
| Activity related to equity-based plans | 1.9 | | 47.3 | (18.7) | | 28.6 |
| Balance as of May 31, 2017 | 359.4 | 3.6 | 1,030.0 | 1,173.6 | 20.0 | 2,227.2 |
| Net income | | | | 994.1 | | 994.1 |
| Unrealized losses on securities, net of tax | | | | | (47.6) | (47.6) |
| Cash dividends declared (\$2.06 per share) | | | | (739.7) | | (739.7) |
| Repurchases of common shares | (2.5) | | (4.5) | (138.6) | | (143.1) |
| Acquisition of businesses | 0.6 | | 33.2 | | | 33.2 |
| Stock-based compensation | | | 44.6 | | | 44.6 |
| Foreign currency translation adjustment | | | | | (8.6) | (8.6) |
| Activity related to equity-based plans | 1.5 | | 23.5 | (26.8) | | (3.3) |
| Balance as of May 31, 2018 | 359.0 | 3.6 | 1,126.8 | 1,262.6 | (36.2) | 2,356.8 |
| Net income | | | | 1,034.4 | | 1,034.4 |
| Unrealized gains on securities, net of tax | | | | | 44.0 | 44.0 |
| Cash dividends declared (\$2.30 per share) | | | | (826.8) | | (826.8) |
| Repurchases of common shares | (0.7) | | (1.4) | (55.5) | | (56.9) |
| Stock-based compensation | | | 46.2 | | | 46.2 |
| Foreign currency translation adjustment | | | | | (7.7) | (7.7) |
| Activity related to equity-based plans | 1.0 | | 34.7 | (5.2) | | 29.5 |
| Balance as of May 31, 2019 | 359.3 | \$ 3.6 | \$ 1,206.3 | \$ 1,409.5 | \$ 0.1 | \$ 2,619.5 |

⁽¹⁾ Amounts have been adjusted to reflect the adoption of ASC Topic 606.

See Notes to Consolidated Financial Statements.

PA YCHEX, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
In millions

| Year ended May 31, | 2019 | 2018 As Adjusted ⁽¹⁾⁽²⁾ | 2017 As Adjusted ⁽¹⁾⁽²⁾ |
|--|------------------|---------------------------------------|---------------------------------------|
| Operating activities | | | |
| Net income | \$ 1,034.4 | \$ 994.1 | \$ 826.3 |
| Adjustments to reconcile net income to net cash provided by operating activities: | | | |
| Depreciation and amortization on property and equipment and intangible assets | 181.5 | 138.0 | 126.9 |
| Amortization of premiums and discounts on available-for-sale securities, net | 49.0 | 65.4 | 72.5 |
| Amortization of deferred contract costs | 180.2 | 174.7 | 169.4 |
| Stock-based compensation costs | 46.2 | 44.6 | 35.4 |
| Provision/(benefit) for deferred income taxes | 4.7 | (37.2) | 22.7 |
| Provision for allowance for doubtful accounts | 3.3 | 3.6 | 4.9 |
| Net realized gains on sales of available-for-sale securities | — | (0.1) | (0.1) |
| Changes in operating assets and liabilities: | | | |
| Interest receivable | 4.8 | 3.7 | 0.2 |
| Accounts receivable and PEO unbilled receivables, net | (117.2) | 16.2 | (103.3) |
| Prepaid expenses and other current assets | 1.0 | 18.0 | (32.2) |
| Accounts payable and other current liabilities | 77.5 | 42.9 | 38.2 |
| Deferred costs | (188.5) | (181.8) | (185.6) |
| Net change in other long-term assets and liabilities | (5.4) | (5.7) | (14.9) |
| Net cash provided by operating activities | 1,271.5 | 1,276.4 | 960.4 |
| Investing activities | | | |
| Purchases of available-for-sale securities | (35,145.8) | (50,220.2) | (50,462.3) |
| Proceeds from sales and maturities of available-for-sale securities | 34,638.8 | 51,592.9 | 49,903.0 |
| Purchases of property and equipment | (123.8) | (154.0) | (94.3) |
| Acquisition of businesses, net of cash acquired | (992.2) | (180.4) | — |
| Purchases of other assets | (5.3) | (39.8) | (8.6) |
| Net cash (used in)/provided by investing activities | (1,628.3) | 998.5 | (662.2) |
| Financing activities | | | |
| Net change in client fund obligations | (950.6) | 462.4 | 317.3 |
| Net proceeds from long-term borrowings | 796.3 | — | — |
| Dividends paid | (826.8) | (739.7) | (662.3) |
| Repurchases of common shares | (56.9) | (143.1) | (166.2) |
| Activity related to equity-based plans | 29.5 | (3.4) | 28.5 |
| Net cash used in financing activities | (1,008.5) | (423.8) | (482.7) |
| Net change in cash, cash equivalents, restricted cash and restricted cash equivalents | (1,365.3) | 1,851.1 | (184.5) |
| Cash, cash equivalents, restricted cash and restricted cash equivalents, beginning of fiscal year | 2,300.5 | 449.4 | 633.9 |
| Cash, cash equivalents, restricted cash and restricted cash equivalents, end of fiscal year | \$ 935.2 | \$ 2,300.5 | \$ 449.4 |
| Reconciliation of cash, cash equivalents, restricted cash and restricted cash equivalents to the Consolidated Balance Sheets: | | | |
| Cash and cash equivalents | \$ 673.6 | \$ 358.2 | \$ 184.6 |
| Restricted cash | 57.1 | — | — |
| Restricted cash and restricted cash equivalents included in funds held for clients | 204.5 | 1,942.3 | 264.8 |
| Total cash, cash equivalents, restricted cash and restricted cash equivalents | \$ 935.2 | \$ 2,300.5 | \$ 449.4 |

(1) Amounts have been adjusted to reflect the adoption of Accounting Standards Update (“ASU”) No. 2016-18, “Statement of Cash Flows (Topic 230):

Restricted Cash (a consensus of the FASB Emerging Issues Task Force).”

(2) Amounts have been adjusted to reflect the adoption of ASC Topic 606 .

See Notes to Consolidated Financial Statements.

PAY CHEX, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note A — Description of Business, Basis of Presentation, and Significant Accounting Policies

Description of business: Paychex, Inc. and its wholly owned subsidiaries (collectively, the “Company” or “Paychex”) is a leading provider of integrated human capital management (“HCM”) solutions for payroll, benefits, human resource (“HR”), retirement, and insurance services for small- to medium-sized businesses in the United States (“U.S.”). The Company also has operations in Europe.

Paychex, a Delaware corporation formed in 1979, reports as one segment. Substantially all of the Company’s revenue is generated within the U.S. The Company also generates revenue within Europe, which represented one percent of the Company’s total revenue for the fiscal year ended May 31, 2019 (“fiscal 2019”), and less than one percent for each of the fiscal years ended May 31, 2018 (“fiscal 2018”) and May 31, 2017 (“fiscal 2017”). Long-lived assets in Europe were approximately 5% and 10% of total long-lived assets of the Company as of May 31, 2019 and May 31, 2018, respectively.

Paychex offers a comprehensive portfolio of HCM services and products that allow its clients to meet their diverse payroll and HR needs. Clients can select services on an à la carte basis or as part of various product bundles. Paychex’s offerings often leverage the information gathered in its base payroll processing service, allowing the Company to provide comprehensive outsourcing services covering the HCM spectrum.

Paychex supports its small business clients utilizing its proprietary, robust, Paychex Flex[®] processing platform or SurePayroll[®] online application. Both products are cloud-based software-as-a-service (“SaaS”) solutions that allow users to process payroll when they want, how they want, and on any device (desktop, tablet, and mobile phone). Clients with more complex payroll and benefits needs are serviced through the Paychex Flex Enterprise solution set, which offers an integrated suite of HCM solutions through the Paychex Flex platform, or through a legacy platform. The SaaS solution through Paychex Flex Enterprise integrates payroll processing with HR management, employee benefits administration, time and labor management, applicant tracking, onboarding solutions, and performance and learning management. Paychex Flex Enterprise allows clients to choose the services and software they need to meet the complexity of their business and have them integrated through one HCM solution.

Total revenue is comprised of service revenue and interest on funds held for clients. Service revenue is comprised primarily of the fees earned on the portfolio of HCM services, which include payroll processing, complementary HR management and administration services, our PEO, and insurance agency commissions. Refer to Note B of this Item 8 for further discussion of the Company’s service revenue.

Basis of presentation: The consolidated financial statements include the accounts of Paychex, Inc. and its wholly owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation. Certain disclosures are reported as zero balances due to rounding.

Effective June 1, 2018, the Company adopted the requirements of ASU No. 2014-09, “Revenue from Contracts with Customers (Topic 606),” and ASU No. 2016-18, “Statement of Cash Flows (Topic 230): Restricted Cash (a consensus of the FASB Emerging Issues Task Force),” as discussed in the “Recently adopted accounting pronouncements” section of this Item 8. All amounts and disclosures set forth in this Annual Report on Form 10-K (the “Form 10-K”) have been updated to comply with the new standards.

Reclassifications: Certain prior period amounts have been reclassified to conform to the current period presentation in connection with the adoption of ASU Nos. 2014-09 and 2016-18 and to provide further detail related to certain PEO balances, and had no material effect on reported consolidated earnings.

Subsequent Events: On July 11, 2019, Paychex announced that its Board of Directors (the “Board”) declared a regular quarterly dividend of \$0.62 per share payable August 22, 2019 to shareholders of record as of August 1, 2019. The Company has also repurchased approximately 1.0 million shares of its common stock for \$84.0 million subsequent to May 31, 2019.

Cash and cash equivalents: Cash and cash equivalents consist of available cash, money market securities, and other investments with a maturity of 90 days or less at acquisition. Cash and cash equivalents include funds collected from the Company’s PEO clients for the payment of worksite employee payrolls and associated payroll taxes. Funds of \$178.8 million and \$44.2 million collected from PEO clients are included in cash and cash equivalents on the Company’s Consolidated Balance Sheets as of May 31, 2019 and May 31, 2018, respectively.

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Restricted cash and restricted cash equivalents: Restricted cash and restricted cash equivalents are recorded at fair value, and consist of cash and cash equivalents, primarily money market securities, included in funds held for clients and cash that is restricted in use for the payment of workers' compensation claims.

Accounts receivable, net of allowance for doubtful accounts: Accounts receivable balances are shown on the Consolidated Balance Sheets net of the allowance for doubtful accounts of \$7.5 million and \$7.0 million as of May 31, 2019 and May 31, 2018, respectively. These balances include: trade receivables for services provided to clients and purchased receivables related to payroll funding arrangements with clients in the temporary staffing industry. Trade receivables were \$87.0 million and \$107.6 million as of May 31, 2019 and May 31, 2018, respectively. Purchased receivables were \$333.5 million and \$267.0 million as of May 31, 2019 and May 31, 2018, respectively. Accounts receivable are written off and charged against the allowance for doubtful accounts when the Company has exhausted all collection efforts without success. No single client had a material impact on total accounts receivable, service revenue, or results of operations.

PEO unbilled receivables, net of advance collections: The Company recognizes a liability for worksite employee gross wages and related payroll tax liabilities at the end of the period in which the worksite employee performs work. When clients' pay periods cross reporting periods, the Company accrues the portion of the unpaid worksite employee payroll where it assumes, under state regulations, the obligation for the payment of wages and the corresponding payroll tax liabilities associated with the work performed prior to period-end. The estimated payroll and payroll tax liabilities are recorded in accrued worksite employee compensation and related items on the Company's Consolidated Balance Sheets. The associated unbilled receivables, including estimated revenues, offset by advance collections from clients, are recorded as PEO unbilled receivables, net of advance collections on the Company's Consolidated Balance Sheets. As of May 31, 2019 and May 31, 2018, advance collections included in PEO unbilled receivables, net of advance collections were \$4.2 million and \$17.2 million, respectively.

Funds held for clients and corporate investments: Marketable securities included in funds held for clients and corporate investments consist primarily of securities classified as available-for-sale and are recorded at fair value obtained from an independent pricing service. The funds held for clients portfolio also includes cash and cash equivalents such as money market securities. Unrealized gains and losses, net of applicable income taxes, are reported as other comprehensive income in the Consolidated Statements of Income and Comprehensive Income. Realized gains and losses on the sale of available-for-sale securities are determined by specific identification of the cost basis of each security. On the Consolidated Statements of Income and Comprehensive Income, realized gains and losses from the funds held for clients portfolio and corporate investments portfolio are included in interest on funds held for clients and interest (expense)/income, net, respectively.

Concentrations: Substantially all of the Company's deposited cash is maintained at large well-capitalized (as defined by their regulators) financial institutions. These deposits may exceed the amount of any insurance provided. All of the Company's deliverable securities, primarily municipal bond securities, are held in custody with certain of the aforementioned financial institutions, for which that institution bears the risk of custodial loss. Non-deliverable securities are primarily time deposits and money market funds.

Property and equipment, net of accumulated depreciation: Property and equipment is stated at cost, less accumulated depreciation. Depreciation is based on the estimated useful lives of property and equipment using the straight-line method. The estimated useful lives of depreciable assets are generally as follows:

| <u>Category</u> | <u>Depreciable life</u> |
|------------------------------------|--|
| Buildings and improvements | 10 to 35 years or the remaining life, whichever is shorter |
| Data processing equipment | Three to four years |
| Furniture, fixtures, and equipment | Two to seven years |
| Leasehold improvements | 10 years or the life of the lease, whichever is shorter |

Normal and recurring repairs and maintenance costs are charged to expense as incurred. The Company reviews the carrying value of property and equipment for impairment when events or changes in circumstances indicate that the carrying value of such assets may not be recoverable.

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Software development and enhancements: Expenditures for software purchases and software developed for internal use are capitalized and depreciated on a straight-line basis over the estimated useful lives, which are generally three to five years. Software developed as part of the Company's main processing platform is depreciated over twelve years. For software developed for internal use, certain costs are capitalized, including external direct costs of materials and services associated with developing or obtaining the software, and payroll and payroll-related costs for employees who are directly associated with internal-use software projects. Capitalization of these costs ceases no later than the point at which the project is substantially complete and ready for its intended use. Costs associated with preliminary project stage activities, training, maintenance, and other post-implementation stage activities are expensed as incurred. The carrying value of software and development costs is reviewed for impairment when events or changes in circumstances indicate that the carrying value of such assets may not be recoverable.

Goodwill and other intangible assets, net of accumulated amortization: The Company had \$ 1.8 billion and \$ 814.0 million of goodwill as of May 31, 2019 and May 31, 2018 , respectively. Goodwill is not amortized, but instead is tested for impairment on an annual basis and between annual tests if an event occurs or circumstances change in a way to indicate that there has been a potential decline in the fair value of a reporting unit. The Company performs its annual impairment testing in its fiscal fourth quarter. For fiscal 2019, it was determined that the Company has three reporting units. A qualitative analysis was performed for all reporting units in fiscal 2019, to determine if it is more-likely-than-not that the fair value of the reporting units had declined below their carrying value. The qualitative assessment considered various financial, macroeconomic, industry, and reporting unit specific qualitative factors. For fiscal 2018, a qualitative analysis was performed for all reporting units to determine if it is more-likely-than-not that the fair value of the reporting units had declined below its carrying value. During fiscal 2017, a qualitative assessment was performed on the Company's Paychex Advance , LLC reporting unit, and for all other reporting units a quantitative analysis was performed. Based on the results of the Company's testing, no impairment loss was recognized in the results of operations for the fiscal years 2019, 2018, or 2017. Subsequent to the latest review, there have been no events or circumstances that indicate any potential impairment of the Company's goodwill balance.

Intangible assets are comprised primarily of client list acquisitions and are reported net of accumulated amortization on the Consolidated Balance Sheets. Intangible assets are amortized over periods generally ranging from three to twelve years. Certain client lists use an accelerated method, while other intangible assets use the straight-line method of amortization.

Impairment of Long-Lived Assets: Long-lived assets, including intangible assets, are reviewed for impairment when events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized for the amount by which the carrying amount of the asset exceeds the estimated fair value of the asset. The Company has determined that there was no impairment of long-lived assets for the fiscal years 2019 , 2018 , or 2017 .

Foreign Currency : The financial statements of the Company's foreign subsidiaries have been translated into U.S. dollars. Assets and liabilities are translated into U.S. dollars at period-end exchange rates. Income and expenses are translated at the average exchange rate for the reporting period. The resulting non-cash foreign currency translation adjustments, representing unrealized gains or losses, are included in Consolidated Statements of Stockholders' Equity as a component of accumulated other comprehensive income/(loss) , net of tax . The Company did not have any material realized gains or losses resulting from foreign exchange transactions during the fiscal years 2019 , 2018 , or 2017 .

Revenue recognition: Revenues are primarily attributable to fees for providing services as well as investment income earned on funds held for clients. Fees associated with services are recognized in the period services are rendered and earned under service arrangements with clients where service fees are fixed or determinable and collectability is reasonably assured. The Company's service revenue is largely attributable to processing services where the fee is based on a fixed amount per processing period or a fixed amount per processing period plus a fee per employee or transaction processed. Insurance Services revenues are recognized when commissions are earned on premiums billed and collected. Fees earned for funding of payrolls for temporary staffing agency clients via the purchase of accounts receivable are based on a percentage of funding amounts as specified in the client contract. These fees are then recognized over the average collection period of 35 to 45 days. The revenue earned from delivery service for the distribution of certain client payroll checks and reports is included in service revenue, and the costs for the delivery are included in operating expenses on the Consolidated Statements of Income and Comprehensive Income.

The Company receives advance payments for set-up fees from its clients. Advance payments received for certain of the Company's service offerings for set-up fees are considered a material right. Therefore, the Company defers the revenue associated with these advance payments, recognizing the revenue and related expenses over the expected period to which the material right exists.

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PEO revenue is included in service revenue and is reported net of certain pass-through costs billed and incurred, which primarily include payroll wages, payroll taxes, including federal and state unemployment insurance, and certain guaranteed cost benefit premiums. Direct costs related to certain benefit plans where the Company retains risk are recognized as operating expenses rather than as a reduction in service revenue. Refer to Note B of this Item 8 for further discussion of the PEO pass-through costs.

Interest on funds held for clients is earned primarily on funds that are collected from clients before due dates for payroll tax administration services and for employee payment services, and invested until remittance to the applicable tax or regulatory agencies or client employees. The interest earned on these funds is included in total revenue on the Consolidated Statements of Income and Comprehensive Income because the collecting, holding, and remitting of these funds are components of providing these services.

PEO insurance reserves: As part of the PEO service, the Company offers workers' compensation insurance and health insurance for the benefit of client employees. Workers' compensation insurance is provided under fully insured high deductible workers' compensation insurance policies. Workers' compensation insurance reserves are established to provide for the estimated costs of paying claims up to per occurrence liability limits. In establishing the PEO workers' compensation insurance reserves, the Company uses an independent actuarial estimate of undiscounted future cash payments that would be made to settle the claims.

The Company's maximum individual claims liability, excluding Oasis Outsourcing Group Holdings, L.P. ("Oasis") and HR Outsourcing Holdings, Inc. ("HROi"), was \$1.0 million and \$ 1.3 million under its fiscal 2019 and fiscal 2018 worker s' compensation insurance policies, respectively . Oasis' maximum individual claims liability was \$ 1.0 million under its workers' compensation insurance policies for the annual fiscal period ended May 31, 2019. HROi's maximum individual claims liability was \$ 0.8 million and \$ 0.5 million under its workers' compensation insurance policies for the annual periods ending September 30, 2019 and ended September 30, 2018, respectively. As of May 31, 2019 and May 31, 2018 , the Company had recorded current liabilities of \$71.1 million and \$ 19.4 million, respectively, and long-term liabilities of \$99.2 million and \$31.2 million, respectively, on its Consolidated Balance Sheets for workers' compensation insurance costs.

With respect to PEO health insurance, the Company offers various health insurance plans that take the form of either fully insured guaranteed cost plans with various national insurance carriers or a fully insured minimum premium insurance arrangement with coverage provided through a single national carrier. Under the minimum medical premium insurance arrangement, the Company's health benefits in surance reserves are established to provide for the payment of claims in accordance with its service contract with the carrier. The claims liability includes estimates for reported losses, plus amounts for those claims incurred but not reported, and estimates of certain expenses associated with processing and settling the claims. The Company's maximum individual claims liability, excluding Oasis and HROi, was \$0.3 million under both its calendar 2019 and 2018 minimum premium insurance plan policies. HROi's maximum individual claims liability was \$0.3 million under its minimum premium insurance policy for the annual periods ending June 30, 2019 and ended June 30, 2018. Oasis has no minimum premium insurance plan policies in effect. In addition, the Company also provides self-insured dental and vision plans to certain of its PEO clients. Amounts accrued related to the health insurance and dental and vision plan reserves were \$25.4 million as of both May 31, 2019 and May 31, 2018 . These amounts are included in current liabilities on the Consolidated Balance Sheets.

Estimating the ultimate cost of future claims is an uncertain and complex process based upon historical loss experience and actuarial loss projections, and is subject to change due to multiple factors, including economic trends, changes in legal liability law, and damage awards, all of which could materially impact the reserves as reported in the consolidated financial statements. Accordingly, final claim settlements may vary from the present estimates, particularly with workers' compensation insurance where those payments may not occur until well into the future. The Company regularly reviews the adequacy of its estimated insurance reserves. Adjustments to previously established reserves are reflected in the results of operations for the period in which the adjustment is identified. Such adjustments could be significant, reflecting any combination of new and adverse or favorable trends. Adjustments to previously established reserves were not material for the fiscal years 2019, 2018, or 2017.

Stock-based compensation costs: All stock-based awards to employees are recognized as compensation costs in the consolidated financial statements based on their fair values measured as of the date of grant. The Company estimates the fair value of stock option grants using a Black-Scholes option pricing model. This model requires various assumptions as inputs including expected volatility of the Paychex stock price and expected option life. Volatility is estimated based on a combination of historical volatility, using stock prices over a period equal to the expected option life, and implied market volatility. Expected option life is estimated based on historical exercise behavior. The Company periodically reassesses its assumptions as well as its choice of valuation model. The Company will reconsider use of this model if additional information becomes available in the future indicating that another model would provide a more accurate estimate of fair value, or if characteristics of future grants would warrant such a change.

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The fair value of stock awards is determined based on the stock price at the date of grant. For grants that do not accrue dividends or dividend equivalents, the fair value is the stock price reduced by the present value of estimated dividends over the vesting period or performance period.

The Company's policy is to estimate forfeitures and only record compensation costs for those awards that are expected to vest. The assumptions for forfeitures were determined based on type of award and historical experience. Forfeiture assumptions are adjusted at the point in time a significant change is identified, with any adjustment recorded in the period of change, and the final adjustment at the end of the requisite service period to equal actual forfeitures.

The assumptions of volatility, expected option life, and forfeitures all require significant judgment and are subject to change in the future due to factors such as employee exercise behavior, stock price trends, and changes to type or provisions of stock-based awards. Any material change in one or more of these assumptions could have an impact on the estimated fair value of a future award.

Refer to Note F of this Item 8 for further discussion of the Company's stock-based compensation plans.

Income taxes: The Company accounts for deferred taxes by recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements or tax returns. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial statement and tax basis of assets and liabilities, using enacted tax rates in effect for the fiscal year in which the differences are expected to reverse. Refer to Note K of this Item 8 for further discussion on deferred taxes and the tax impacts of the Tax Cuts and Jobs Act (the "Tax Act").

The Company also maintains a reserve for uncertain tax positions. The Company evaluates tax positions taken or expected to be taken in a tax return for recognition in its consolidated financial statements. Prior to recording the related tax benefit in the consolidated financial statements, the Company must conclude that tax positions will be more-likely-than-not to be sustained, assuming those positions will be examined by taxing authorities with full knowledge of all relevant information. The benefit recognized in the consolidated financial statements is the amount the Company expects to realize after examination by taxing authorities. If a tax position drops below the more-likely-than-not standard, the benefit can no longer be recognized. Assumptions, judgment, and the use of estimates are required in determining if the more-likely-than-not standard has been met when developing the provision for income taxes and in determining the expected benefit. A change in the assessment of the more-likely-than-not standard could materially impact the Company's results of operations or financial position. The Company's reserve for uncertain tax positions, including interest and net of federal benefits, was \$21.6 million as of May 31, 2019 and \$14.7 million as of May 31, 2018. Refer to Note K of this Item 8 for further discussion of the Company's reserve for uncertain tax positions.

Use of estimates : The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates, judgments, and assumptions that affect reported amounts of assets, liabilities, revenue, and expenses during the reporting period. Actual amounts and results could differ from these estimates.

Recently adopted accounting pronouncements: In May 2014, the Financial Accounting Standards Board ("FASB") issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)." This guidance, as amended by subsequent ASUs on the topic, outlines a single comprehensive model for determining revenue recognition for contracts with customers, and supersedes guidance on revenue recognition in ASC Topic 605, "Revenue Recognition." The Company adopted the new standard on June 1, 2018, utilizing the full retrospective method, which required the Company to recast each prior reporting period presented and included a cumulative adjustment to increase stockholders' equity by \$262.9 million as of June 1, 2016. See the "Impact on Previously Reported Results" section of this Item 8 for previously reported Consolidated Financial Statements related to this standard. The Company has updated its control framework for new internal controls and made changes to existing internal controls related to the new standard.

In November 2016, the FASB issued ASU No. 2016-18, "Statement of Cash Flows (Topic 230): Restricted Cash (a consensus of the FASB Emerging Issues Task Force)." This guidance requires that the Consolidated Statements of Cash Flows explain the change during the reporting period of the totals of cash, cash equivalents, restricted cash and restricted cash equivalents. Therefore, amounts for restricted cash and restricted cash equivalents are to be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the Consolidated Statements of Cash Flows. The guidance in this standard was effective for the Company on June 1, 2018 and was applied using the retrospective transition method to each period presented. See "Impact on Previously Reported Results" section of this Item 8 for the impact to previously reported Consolidated Statements of Cash Flows related to this standard.

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Impact on Previously Reported Results: The provisions of ASU No. 2014-09 do not materially impact the timing or the amount of revenue the Company recognizes on an annual basis in its Consolidated Statements of Income and Comprehensive Income. However, they do have an impact on the timing and amount of revenue the Company recognizes on a quarterly basis due to changes in the way it accounts for certain revenues where performance obligations are satisfied at a point in time. The provisions of the new standard had a material impact on the Company's Consolidated Balance Sheets. The primary impact of adopting the new standard is on the Company's treatment of certain costs to obtain and fulfill contracts. In relation to those items, the new standard resulted in the Company deferring additional costs on its Consolidated Balance Sheets and amortizing them in the Consolidated Statements of Income and Comprehensive Income over the estimated average life of the client. Refer to Note B of this Item 8 for further details.

The provisions of ASU No. 2016-18 impacted the presentation of cash equivalents and money market securities included in funds held for clients on the Company's Consolidated Statements of Cash Flows. Historically, the Company recorded the change in cash equivalents and money market securities included in funds held for clients as Investing Activities. Under the new guidance, amounts classified as restricted cash and restricted cash equivalents are included with cash and cash equivalents in the reconciliation of total cash balances during the period.

The following tables present a recast of selected Consolidated Statements of Income and Comprehensive Income line items after giving effect to the adoption of ASU No. 2014-09:

| In millions, except per share amounts | For the year ended May 31, 2018 | | |
|--|---------------------------------|-------------|-------------|
| | As Previously | | |
| | Reported | Adjustments | As Adjusted |
| Service revenue | \$ 3,317.4 | \$ (3.2) | \$ 3,314.2 |
| Operating expenses | 1,017.8 | 0.4 | 1,018.2 |
| Selling, general and administrative expenses | 1,075.6 | (7.6) | 1,068.0 |
| Total expenses | 2,093.4 | (7.2) | 2,086.2 |
| Operating income | 1,287.5 | 4.0 | 1,291.5 |
| Income taxes | 362.4 | (56.4) | 306.0 |
| Net income | \$ 933.7 | \$ 60.4 | \$ 994.1 |
| Basic earnings per share | \$ 2.60 | \$ 0.17 | \$ 2.77 |
| Diluted earnings per share | \$ 2.58 | \$ 0.17 | \$ 2.75 |

| In millions, except per share amounts | For the year ended May 31, 2017 | | |
|--|---------------------------------|-------------|-------------|
| | As Previously | | |
| | Reported | Adjustments | As Adjusted |
| Service revenue | \$ 3,100.7 | \$ 1.7 | \$ 3,102.4 |
| Operating expenses | 919.6 | (0.2) | 919.4 |
| Selling, general and administrative expenses | 992.1 | (12.4) | 979.7 |
| Total expenses | 1,911.7 | (12.6) | 1,899.1 |
| Operating income | 1,239.6 | 14.3 | 1,253.9 |
| Income taxes | 427.5 | 5.3 | 432.8 |
| Net income | \$ 817.3 | \$ 9.0 | \$ 826.3 |
| Basic earnings per share | \$ 2.27 | \$ 0.03 | \$ 2.30 |
| Diluted earnings per share ⁽¹⁾ | \$ 2.25 | \$ 0.02 | \$ 2.28 |

(1) Diluted earnings per share amounts may not add across by +/- \$0.01 due to rounding.

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The following table presents a recast of selected Consolidated Balance Sheet line items after giving effect to the adoption of ASU No. 2014-09:

| In millions | May 31, 2018 | | |
|---|------------------------|-------------|-------------|
| | As Previously Reported | Adjustments | As Adjusted |
| Assets | | | |
| Accounts receivable, net of allowance for doubtful accounts | \$ 413.6 | \$ (39.0) | \$ 374.6 |
| PEO unbilled receivables, net of advance collections ⁽¹⁾ | \$ 117.8 | \$ — | \$ 117.8 |
| Prepaid expenses and other current assets | \$ 75.8 | \$ 148.2 | \$ 224.0 |
| Long-term deferred costs ⁽²⁾ | \$ 18.5 | \$ 342.5 | \$ 361.0 |
| Liabilities and stockholders' equity | | | |
| Accounts payable | \$ 74.5 | \$ (0.8) | \$ 73.7 |
| Deferred revenue | \$ 24.3 | \$ 10.3 | \$ 34.6 |
| Deferred income taxes | \$ 48.8 | \$ 105.6 | \$ 154.4 |
| Other long-term liabilities | \$ 84.8 | \$ 4.3 | \$ 89.1 |
| Retained earnings | \$ 930.3 | \$ 332.3 | \$ 1,262.6 |

(1) Amounts were previously reported as a component of accounts receivable, net of allowance for doubtful accounts included in the Company's fiscal 2018 Form 10-K. PEO unbilled receivables, net of advance collections are separately presented on the Consolidated Balance Sheets contained in this Form 10-K.

(2) Amounts were previously reported as a component of other long-term assets on the Consolidated Balance Sheets included in the Company's fiscal 2018 Form 10-K. Long-term deferred costs are separately presented on the Consolidated Balance Sheets contained in this Form 10-K.

The following tables present a recast of selected Consolidated Statement of Cash Flow line items after giving effect to the adoption of ASU Nos. 2014-09 and 2016-18:

| In millions | For the year ended May 31, 2018 | | | |
|---|---------------------------------|-----------------------------|-----------------------------|-------------------|
| | As Previously Reported | ASU No. 2014-09 Adjustments | ASU No. 2016-18 Adjustments | As Adjusted |
| Cash flows from operating activities | | | | |
| Net income | \$ 933.7 | \$ 60.4 | \$ — | \$ 994.1 |
| Amortization of deferred contract costs | \$ — | \$ 174.7 | \$ — | \$ 174.7 |
| Provision/(benefit) for deferred income taxes | \$ 19.2 | \$ (56.4) | \$ — | \$ (37.2) |
| Accounts receivable and PEO unbilled receivables, net | \$ 13.6 | \$ 2.6 | \$ — | \$ 16.2 |
| Prepaid expenses and other current assets | \$ 17.7 | \$ 0.3 | \$ — | \$ 18.0 |
| Accounts payable and other current liabilities | \$ 42.6 | \$ 0.3 | \$ — | \$ 42.9 |
| Deferred costs | \$ — | \$ (181.8) | \$ — | \$ (181.8) |
| Net change in other long-term assets and liabilities | \$ (5.6) | \$ (0.1) | \$ — | \$ (5.7) |
| Cash flows from investing activities | | | | |
| Net change in funds held for clients' money market securities and other cash equivalents | \$ (1,677.5) | \$ — | \$ 1,677.5 | \$ — |
| Net cash (used in)/provided by investing activities | \$ (679.0) | \$ — | \$ 1,677.5 | \$ 998.5 |
| Net change in cash, cash equivalents, restricted cash and restricted cash equivalents | | | | |
| | \$ 173.6 | \$ — | \$ 1,677.5 | \$ 1,851.1 |
| Cash, cash equivalents, restricted cash and restricted cash equivalents, beginning of fiscal year | \$ 184.6 | \$ — | \$ 264.8 | \$ 449.4 |
| Cash, cash equivalents, restricted cash and restricted cash equivalents, end of period | \$ 358.2 | \$ — | \$ 1,942.3 | \$ 2,300.5 |

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| In millions | For the year ended May 31, 2017 | | | |
|---|---------------------------------|-----------------------------|-----------------------------|-------------------|
| | As Previously Reported | ASU No. 2014-09 Adjustments | ASU No. 2016-18 Adjustments | As Adjusted |
| Cash flows from operating activities | | | | |
| Net income | \$ 817.3 | \$ 9.0 | \$ — | \$ 826.3 |
| Amortization of deferred contract costs | \$ — | \$ 169.4 | \$ — | \$ 169.4 |
| Provision for deferred income taxes | \$ 17.4 | \$ 5.3 | \$ — | \$ 22.7 |
| Accounts receivable and PEO unbilled receivables, net | \$ (103.7) | \$ 0.4 | \$ — | \$ (103.3) |
| Prepaid expenses and other current assets | \$ (34.1) | \$ 1.9 | \$ — | \$ (32.2) |
| Accounts payable and other current liabilities | \$ 39.1 | \$ (0.9) | \$ — | \$ 38.2 |
| Deferred costs | \$ — | \$ (185.6) | \$ — | \$ (185.6) |
| Net change in other long-term assets and liabilities | \$ (15.4) | \$ 0.5 | \$ — | \$ (14.9) |
| Cash flows from investing activities | | | | |
| Net change in funds held for clients' money market securities and other cash equivalents | \$ 237.6 | \$ — | \$ (237.6) | \$ — |
| Net cash used in investing activities | \$ (424.6) | \$ — | \$ (237.6) | \$ (662.2) |
| Net change in cash, cash equivalents, restricted cash and restricted cash equivalents | | | | |
| | \$ 53.1 | \$ — | \$ (237.6) | \$ (184.5) |
| Cash, cash equivalents, restricted cash and restricted cash equivalents, beginning of fiscal year | \$ 131.5 | \$ — | \$ 502.4 | \$ 633.9 |
| Cash, cash equivalents, restricted cash and restricted cash equivalents, end of period | \$ 184.6 | \$ — | \$ 264.8 | \$ 449.4 |

In June 2018, the Company also adopted the following ASUs, none of which had a material impact on its consolidated financial statements :

- ASU No. 2017-05, “Other Income – Gains and Losses from the Derecognition of Nonfinancial Assets (Subtopic 610-20): Clarifying the Scope of Asset Derecognition Guidance and Accounting for Partial Sales of Nonfinancial Assets.”
- ASU No. 2016-16, “Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory.”
- ASU No. 2016-15, “Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments (a consensus of the Emerging Issues Task Force).”
- ASU No. 2016-01, “Financial Instruments – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities.”

Recently issued accounting pronouncements: In April 2019, the FASB issued ASU No. 2019-04 “Codification Improvements to Topic 326, Financial Instruments—Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments.” ASU No. 2019-04 was issued as part of the FASB’s ongoing project to improve upon its ASC, and to clarify and improve areas of guidance related to recently issued standards on credit losses, hedging and recognition and measurement. This guidance contains several effective dates, but is applicable to the Company’s fiscal year beginning June 1, 2020. The Company is currently evaluating the potential effects of this guidance on its consolidated financial statements.

In November 2018, the FASB issued ASU No. 2018-18, “Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606.” ASU No. 2018-18 was issued to resolve the diversity in practice concerning the manner in which entities account for transactions based on their assessment of the economics of a collaborative arrangement. This guidance is effective for public entities for fiscal years beginning after December 15, 2019, and for interim periods within those fiscal years, with early adoption permitted. This guidance is applicable to the Company’s fiscal year beginning June 1, 2020. The Company is currently evaluating the potential effects of this guidance on its consolidated financial statements.

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In August 2018, the FASB issued ASU No. 2018-15, “Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40): Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract (a consensus of the FASB Emerging Issues Task Force).” ASU No. 2018-15 aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). This guidance is effective for fiscal years beginning after December 15, 2019, and for interim periods within those fiscal years, with early adoption permitted. This guidance is applicable to the Company’s fiscal year beginning June 1, 2020. The Company is currently evaluating the potential effects of this guidance on its consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, “Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement.” ASU No. 2018-13 modifies the disclosure requirements in Topic 820, “Fair Value Measurement,” based on the FASB Concepts Statement, “Conceptual Framework for Financial Reporting – Chapter 8: Notes to Financial Statements,” including consideration of costs and benefits. This guidance is effective for fiscal years beginning after December 15, 2019, and for interim periods within those fiscal years, with early adoption permitted. This guidance is applicable to the Company’s fiscal year beginning June 1, 2020. The Company is currently evaluating the potential effects of this guidance on its consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07, “Compensation - Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting.” ASU No 2018-07 expands the scope of Topic 718 to include share-based payment transactions for acquiring goods and services from nonemployees. The guidance also specifies that Topic 718 applies to all share-based payment transactions in which a grantor acquires goods or services to be used or consumed in a grantor’s own operations by issuing share-based payment awards. This guidance is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. Early adoption is permitted, but no earlier than an entity’s adoption date of Topic 606. This guidance is applicable to the Company’s fiscal year beginning June 1, 2019. The Company believes that this guidance will not have a material effect on its consolidated financial statements.

In February 2018, the FASB issued ASU No. 2018-02, “Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.” ASU No. 2018-02 allows entities to reclassify certain stranded income tax effects from accumulated other comprehensive income to retained earnings resulting from the Tax Act, enacted on December 22, 2017. The guidance also requires additional financial statement disclosures to clarify the effects of adoption. ASU No. 2018-02 should be applied either in the period of adoption or retrospectively to each period or periods in which the effect of the change in the U.S. federal corporate income tax rate from the Tax Act was recognized. This guidance is effective for fiscal years beginning after December 15, 2018, and for interim periods within those fiscal years, with early adoption permitted. This guidance is applicable to the Company’s fiscal year beginning June 1, 2019. The Company believes that this guidance will not have a material effect on its consolidated financial statements.

In March 2017, the FASB issued ASU No. 2017-08, “Receivables - Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities .” The amendments in ASU No. 2017-08 require that the premium on purchased callable debt securities be amortized to the earliest call date. The amendments do not, however, require an accounting change for securities held at a discount; instead, the discount continues to be amortized to maturity. This guidance is effective for public companies for annual periods, and interim periods within those annual periods, beginning after December 15, 2018, and is applicable to the Company’s fiscal year beginning June 1, 2019. Early adoption is permitted, including adoption in an interim period. The Company believes that this guidance will not have a material effect on its consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-04, “Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairments.” ASU No. 2017-04 establishes a one-step process for testing goodwill for a decrease in value, requiring a goodwill impairment loss to be measured as the excess of the reporting unit’s carrying amount over its fair value. The guidance eliminates the second step of the current two-step process that requires the impairment to be measured as the difference between the implied value of a reporting unit’s goodwill with the goodwill’s carrying amount. ASU No. 2017-04 is effective for public entities for annual or interim periods in fiscal years beginning after December 15, 2019. Early adoption is permitted for interim or annual impairment tests after January 1, 2017. This guidance is applicable to the Company’s fiscal year beginning June 1, 2020, and is not anticipated to have a material impact on the Company’s consolidated financial statements.

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In June 2016, the FASB issued ASU No. 2016-13 “Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments.” ASU No. 2016-13, as amended by subsequent ASUs of the topic, requires an organization to measure all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. ASU No. 2016-13 is effective for public business entities for annual periods, including interim periods within those annual periods, beginning after December 15, 2019. This guidance is applicable to the Company's fiscal year beginning June 1, 2020. The Company is currently evaluating this guidance to determine the potential impact on its consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, “Leases (Topic 842).” This guidance, as amended by subsequent ASUs on the topic, improves transparency and comparability among companies by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. ASU No. 2016-02 is effective for public business entities for annual periods, including interim periods within those annual periods, beginning after December 15, 2018, with early adoption permitted.

The Company will adopt and begin reporting under the new standard in its fiscal year beginning June 1, 2019, using the alternative transition method provided by the FASB in ASU No. 2018-11, “Leases (Topic 842): Targeted Improvements.” Under this transition method, the Company will apply the new standard at the adoption date and recognize a cumulative-effect adjustment, if any, to the opening balance of retained earnings on June 1, 2019. The Company will elect the lease vs. non-lease components practical expedient relating to the asset class of real estate, the short-term lease exemption practical expedient, and the package of practical expedients, which permits the Company to not reassess prior conclusions about lease identification, lease classification and initial direct costs under the new standard. The Company determined that it will not elect the practical expedient related to hindsight.

The Company estimates the provisions of the new standard will result in an increase in lease-related assets and liabilities recognized on the Consolidated Balance Sheets in the range of \$125.0 million to \$135.0 million. The Company does not believe the standard will have a material impact on its Consolidated Statements of Income and Comprehensive Income. In connection with the adoption of this standard, the Company is updating its control framework for new internal controls related to leases that will be required, as well as any updates to existing controls, effective with the June 1, 2019 adoption. The adoption of this standard will not have an impact on the financial covenants set forth in the Company's credit and borrowing agreements.

Other recent authoritative guidance issued by the FASB (including technical corrections to the FASB ASC), the American Institute of Certified Public Accountants, and the Securities and Exchange Commission (“SEC”) did not, or are not expected to have a material effect on the Company's consolidated financial statements.

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Note B — Service Revenue

Service revenue is primarily attributable to fees for providing services to the Company's clients and is recognized when control of the promised services are transferred to its clients, in an amount that reflects the consideration it expects to receive in exchange for such services. The Company's service revenue is largely attributable to processing services where the fee is based on a fixed amount per processing period or a fixed amount per processing period plus a fee per employee or transaction processed. Insurance Services revenue is recognized when commissions are earned on premiums billed and collected. The Company's contracts generally have a term of 30 days as they are cancellable at any time by either party with 30-days' notice of termination. Sales and other applicable non-payroll related taxes are excluded from service revenue.

Based upon similar operational and economic characteristics, the Company's service revenue is disaggregated by Management Solutions and PEO and Insurance Services as reported in the Company's Consolidated Statements of Income and Comprehensive Income. The Company believes these revenue categories depict how the nature, amount, timing, and uncertainty of its revenue and cash flows are affected by economic factors.

The following table, consistent with the Consolidated Statements of Income and Comprehensive Income, disaggregates service revenue by Management Solutions and PEO and Insurance Services:

| In millions | Year ended May 31, | | |
|----------------------------|--------------------|------------------------------------|------------------------------------|
| | 2019 | 2018 As Adjusted ⁽¹⁾ | 2017 As Adjusted ⁽¹⁾ |
| Management Solutions | \$ 2,877.7 | \$ 2,758.4 | \$ 2,680.7 |
| PEO and Insurance Services | 814.2 | 555.8 | 421.7 |
| Total service revenue | \$ 3,691.9 | \$ 3,314.2 | \$ 3,102.4 |

⁽¹⁾ Amounts have been adjusted to reflect the adoption of ASC Topic 606.

Management Solutions Revenue

Management Solutions revenue is primarily derived from the Company's payroll processing, payroll-related ancillary services, and HR outsourcing solutions. Clients can select services on an à la carte basis or as part of various product bundles. The Company's offerings often leverage the information gathered in its base payroll processing service, allowing it to provide comprehensive outsourcing services covering the HCM spectrum. Management Solutions revenue is generally recognized over time as services are performed and the customer simultaneously receives and controls the benefits from these services.

Revenue earned from delivery service for the distribution of certain client payroll checks and reports is also included in Management Solutions revenue in the Company's Consolidated Statements of Income and Comprehensive Income. Delivery service revenue is recognized at a point in time following the delivery of payroll checks, reports, quarter-end packages, and tax returns to the Company's clients.

PEO and Insurance Services Revenue

PEO services are sold through the Company's registered and licensed subsidiaries, Paychex Business Solutions, LLC, Oasis, and HROi, and offer businesses a combined package of services that includes payroll, employer compliance, HR and employee benefits administration, risk management outsourcing, and the on-site availability of a professionally trained HR representative, among other services. The Company serves as a co-employer of its clients' employees, offers health insurance coverage to client employees, and assumes the risks and rewards of workers' compensation insurance and certain health insurance benefit offerings. PEO revenue is recognized over time as the services are performed and the customer simultaneously receives and controls the benefits from these services. PEO revenue is reported net of certain pass-through costs billed and incurred, which include payroll wages, payroll taxes, including federal and state unemployment insurance, and certain health insurance benefit premiums, primarily costs related to the Company's guaranteed cost benefit plans. Pass-through costs for payroll wages and payroll taxes were \$14.5 billion, \$7.7 billion, and \$5.7 billion for fiscal years 2019, 2018, and 2017, respectively, which includes costs related to state unemployment insurance of \$82.3 million, \$47.5 million, and \$34.0 million, respectively. For guaranteed cost benefit plans where the Company does not retain risk, revenues are recorded net of the premiums paid to the insurance carrier. For fiscal 2019, 2018, and 2017, the pass-through costs related to our guaranteed cost benefit plans were \$ 451.8 million, \$ 274.2 million, and \$ 224.8 million, respectively. For workers' compensation and certain benefit plans where the Company retains risk, revenues and costs are recorded on a gross basis.

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Insurance services are sold through the Company's licensed insurance agency, Paychex Insurance Agency, Inc., which provides insurance through a variety of carriers, allowing companies to expand their employee benefit offerings at an affordable cost. Insurance offerings include property and casualty coverage such as workers' compensation, business-owner policies, and commercial auto, and health and benefits coverage, including health, dental, vision, and life. Insurance services revenue is recognized over time as services are performed and the customer simultaneously receives and controls the benefits from these services and reflects commissions earned on insurance services premiums billed.

Contract Balances

The timing of revenue recognition for Management Solutions and PEO and Insurance Services is consistent with the invoicing of clients as they both occur during the respective client payroll period for which the services are provided. Therefore, the Company does not recognize a contract asset or liability resulting from the timing of revenue recognition and invoicing.

Advance payments received for certain of the Company's service offerings for set-up fees are considered a material right. Therefore, the Company defers revenue associated with these performance obligations, which exceed one year, and subsequently recognizes these as future services are provided, over approximately three to four years.

Changes in deferred revenue related to material right performance obligations were as follows:

| In millions | Year ended | |
|---------------------------------|---------------------|--------|
| | May 31, 2019 | |
| Balance, beginning of period | \$ | 46.4 |
| Deferral of revenue | | 27.6 |
| Recognition of unearned revenue | | (28.3) |
| Balance, end of period | \$ | 45.7 |

Deferred revenue related to material right performance obligations is reported in the deferred revenue and other long-term liabilities line items on the Company's Consolidated Balance Sheets. The Company expects to recognize \$22.6 million of deferred revenue related to material right performance obligations during its fiscal year ending May 31, 2020 and \$23.1 million of such deferred revenue thereafter.

Assets Recognized from the Costs to Obtain and Fulfill Contracts

The Company recognizes an asset for the incremental costs of obtaining a contract with a client if it is expected that the amortization period will be longer than one year. The Company determined that certain selling and commission costs meet the capitalization criteria under ASC Subtopic 340-40, "Other Assets and Deferred Costs: Contracts with Customers" ("ASC 340-40"). The Company also recognizes an asset for the costs to fulfill a contract with a client if the costs are specifically identifiable, generate or enhance resources used to satisfy future performance obligations, and are expected to be recovered. The Company has determined that substantially all costs related to implementation activities are administrative in nature and meet the capitalization criteria under ASC 340-40. These capitalized costs to fulfill a contract principally relate to upfront direct costs that are expected to be recovered and enhance the Company's ability to satisfy future performance obligations.

The assets related to both costs to obtain and costs to fulfill contracts with clients are capitalized and amortized using an accelerated method over an eight-year life to closely align with the pattern of client attrition over the estimated life of the client relationship. Deferred costs to obtain and fulfill contracts are reported in the prepaid expenses and other current assets and long-term deferred costs line items on the Company's Consolidated Balance Sheets. Amortization expense related to costs to obtain and fulfill a contract are included in operating and selling, general, and administrative expenses in the Company's Consolidated Statements of Income and Comprehensive Income. The Company regularly reviews its deferred costs for potential impairment and did not recognize an impairment loss during the fiscal year ended May 31, 2019.

Changes in deferred costs to obtain and fulfill contracts were as follows:

| In millions | Year ended May 31, 2019 | | | |
|-----------------------------|--------------------------------|-----------------------|---------------------|----------------|
| | Beginning | Capitalization | Amortization | Ending |
| | balance | of costs | | balance |
| Costs to obtain a contract | \$ 455.0 | \$ 166.5 | \$ (157.2) | \$ 464.3 |
| Costs to fulfill a contract | \$ 65.4 | \$ 23.7 | \$ (23.0) | \$ 66.1 |

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Note C — Basic and Diluted Earnings Per Share

Basic and diluted earnings per share were calculated as follows:

| In millions, except per share amounts | Year ended May 31, | | |
|--|---------------------------|-----------------------------------|-----------------------------------|
| | 2019 | 2018 | 2017 |
| | | As Adjusted ⁽¹⁾ | As Adjusted ⁽¹⁾ |
| Basic earnings per share: | | | |
| Net income | \$ 1,034.4 | \$ 994.1 | \$ 826.3 |
| Weighted-average common shares outstanding | 359.2 | 359.0 | 359.8 |
| Basic earnings per share | \$ 2.88 | \$ 2.77 | \$ 2.30 |
| Diluted earnings per share: | | | |
| Net income | \$ 1,034.4 | \$ 994.1 | \$ 826.3 |
| Weighted-average common shares outstanding | 359.2 | 359.0 | 359.8 |
| Dilutive effect of common share equivalents | 2.6 | 2.5 | 2.8 |
| Weighted-average common shares outstanding, assuming dilution | 361.8 | 361.5 | 362.6 |
| Diluted earnings per share | \$ 2.86 | \$ 2.75 | \$ 2.28 |
| Weighted-average anti-dilutive common share equivalents | 0.4 | 0.7 | 0.7 |

⁽¹⁾ Amounts have been adjusted to reflect the adoption of ASC Topic 606.

Weighted-average common share equivalents that had an anti-dilutive impact are excluded from the computation of diluted earnings per share.

The Company maintained a program to repurchase up to \$350.0 million of the Company's common stock, with authorization that expired on May 31, 2019. During fiscal 2019 and fiscal 2018, the Company repurchased 0.7 million shares for \$56.9 million and 2.5 million shares for \$143.1 million, respectively, under this repurchase program. All shares repurchased were retired. In May 2019, the Company announced that its Board approved a program to repurchase up to \$400.0 million of the Company's common stock, with authorization running from June 1, 2019 through May 31, 2022. The purpose of these programs is to manage common stock dilution.

Note D — Business Combinations

Effective December 20, 2018, the Company acquired Oasis. Upon closing, Oasis became a wholly owned subsidiary of the Company. Oasis is an industry leader in providing HR outsourcing services. Oasis has experienced rapid growth over the last few years through acquisition of several smaller PEOs. The purchase price was \$992.2 million, net of \$262.3 million in cash acquired, including \$132.1 million of restricted cash. The acquisition was financed through a combination of cash on hand and the issuance of long-term private placement debt totaling \$800.0 million.

The results of operations for Oasis have been included in the Company's Consolidated Statements of Income and Comprehensive Income since the date of acquisition. Oasis contributed \$163.7 million of total revenues and \$5.1 million of operating income, including the impact of certain one-time charges related to the acquisition and integration of the Oasis business, in the Company's consolidated results of operations during fiscal 2019. The Company incurred \$5.3 million of acquisition and integration costs associated with Oasis during fiscal 2019, which was included within selling, general, and administrative expenses in the Company's Consolidated Statements of Income and Comprehensive Income.

The Company accounted for the acquisition as a business combination using the acquisition method of accounting in accordance with the FASB ASC Topic 805, "Business Combinations." The acquired assets and liabilities of Oasis were recorded at their preliminary acquisition-date fair values and were consolidated with those of the Company as of the acquisition date. The final determination of these preliminary fair values is subject to completion of an assessment of the acquisition-date fair values of acquired assets and liabilities.

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The following preliminary acquisition-date fair values were assigned to the acquired net assets (amounts in millions):

| | | |
|---|----|----------------|
| Cash and cash equivalents | \$ | 130.2 |
| Restricted cash | | 66.6 |
| Corporate investments | | 8.6 |
| Accounts receivable, net of allowance for doubtful accounts | | 10.7 |
| PEO unbilled receivables, net of advance collections | | 209.8 |
| Prepaid income taxes | | 5.8 |
| Prepaid expenses and other current assets | | 6.0 |
| Long-term restricted cash | | 65.5 |
| Property and equipment | | 15.4 |
| Intangible assets | | 310.9 |
| Goodwill | | 972.1 |
| Other long-term assets | | 1.8 |
| Total Assets | | <u>1,803.4</u> |
| Accounts payable | | 46.0 |
| Accrued corporate compensation and related items | | 11.6 |
| Accrued worksite employee compensation and related items | | 311.1 |
| Other current liabilities | | 49.8 |
| Deferred income taxes | | 51.1 |
| Other long-term liabilities | | 79.3 |
| Net Assets | \$ | <u>1,254.5</u> |

The Company assigned \$310.9 million to amortizable intangible assets, including customer lists, tradenames and trademarks, and non-compete agreements, with a weighted-average amortization period of approximately 10 years. Goodwill in the amount of \$972.1 million was recorded as a result of the acquisition, which is not tax-deductible. Any further adjustments to goodwill (in excess of the existing tax basis) is not expected to be deductible for tax purposes. The goodwill is provisional and subject to change, pending completion of the valuation of assets acquired and liabilities assumed. Goodwill is attributable to the future economic benefits the Company expects to achieve and expected synergies to be realized when combining the operations of this acquisition into our existing operations.

Pro Forma Financial Results (Unaudited): The following table summarizes the Company's unaudited pro forma operating results for fiscal 2019 and fiscal 2018 as if the acquisition of Oasis had been consummated as of June 1, 2017. The following pro forma information does not include the impact of any costs incurred to integrate the operations:

| | Year ended May 31, | | | |
|------------|--------------------|---------|------|---------|
| | 2019 | | 2018 | |
| Revenues | \$ | 3,958.0 | \$ | 3,680.5 |
| Net income | \$ | 1,021.7 | \$ | 984.2 |

The unaudited pro forma operating results have been calculated after applying the Company's accounting policies and include the acquisition of Oasis adjusted, net of tax, for depreciation and amortization expense resulting from the determination of preliminary fair values of the acquired property and equipment and amortizable intangible assets, the inclusion of interest expense related to borrowings used to fund the acquisition, the amortization of debt issuance costs related to the permanent financing of debt, the elimination of interest income related to available cash used for the acquisition, and the elimination of Oasis' interest expense related to debt not assumed in the acquisition. In addition, the net income above for the fiscal year ended May 31, 2018 includes a non-recurring one-time net tax benefit for the revaluation of net deferred tax liabilities as a result of the Tax Act. Since the pro forma financial results assume the acquisition was consummated on June 1, 2017, the unaudited pro forma operating results for fiscal 2019 excluded \$2.7 million (\$2.0 million, net of tax) of costs incurred by the Company related to the acquisition of Oasis. The unaudited pro forma operating results for fiscal 2018 included \$2.7 million (\$1.7 million, net of tax) of costs incurred by the Company related to the acquisition of Oasis.

Oasis' fiscal year end was the Sunday closest to the calendar year end. Since Oasis and the Company had different fiscal year end dates, the unaudited pro forma operating results were prepared based on comparable periods.

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The pro forma financial information does not purport to be indicative of the results that would have been obtained had the transactions been completed as of June 1, 2017 for the periods presented and are not intended to be a projection of future results or trends.

Effective February 28, 2018, the Company acquired Lessor Group (“Lessor”). Upon closing, Lessor became a wholly owned subsidiary of the Company. Lessor is a market-leading provider of payroll and HCM software solutions headquartered in Denmark and serving clients in Northern Europe. The purchase price was \$162.5 million, net of \$13.4 million in cash acquired. Goodwill in the amount of \$112.3 million was recorded as a result of the acquisition, which is not tax-deductible.

Effective August 18, 2017, the Company acquired HROi and all of its operating subsidiaries. HROi is a national PEO that provides HR solutions to small- and medium-sized businesses in more than 35 states. The acquisition expands the Company’s presence in the PEO industry. The purchase price was \$75.4 million and was comprised of \$42.2 million of cash plus \$33.2 million issued in the form of Paychex common stock. Goodwill in the amount of \$51.1 million was recorded as a result of the acquisition, which is not tax-deductible.

The financial results of Lessor and HROi are included in the Company’s consolidated financial statements from the respective dates of acquisition. Subsequent adjustments made to preliminary opening balance sheet amounts before finalization for these acquisitions were immaterial. The Company concluded that these acquisitions were not material to its results of operations and financial position. Therefore, pro forma financial information has been excluded.

Note E — Interest (Expense)/Income, Net

Interest (expense)/income, net, consisted of the following items:

| In millions | Year ended May 31, | | |
|--|--------------------|---------------|---------------|
| | 2019 | 2018 | 2017 |
| Interest income on corporate funds | \$ 13.3 | \$ 11.9 | \$ 9.9 |
| Interest expense | (17.6) | (3.9) | (2.5) |
| Net gain/(loss) from equity-method investments | 1.0 | 0.6 | (2.2) |
| Interest (expense)/income, net | \$ (3.3) | \$ 8.6 | \$ 5.2 |

Note F — Stock- Based Compensation Plans

The Paychex, Inc. 2002 Stock Incentive Plan, as amended and restated effective on October 14, 2015 (the “2002 Plan”), authorizes grants of up to 44.1 million shares of the Company’s common stock. As of May 31, 2019, there were 18.2 million shares available for future grants under the 2002 Plan.

All stock-based awards to employees are recognized as compensation costs in the consolidated financial statements based on their fair values measured as of the date of grant. These costs are recognized as an expense in the Consolidated Statements of Income and Comprehensive Income on a straight-line basis over the requisite service period and an increase in additional paid-in capital.

Stock-based compensation expense was \$46.2 million, \$44.6 million, and \$35.4 million for fiscal years 2019, 2018, and 2017, respectively. Additional stock-based compensation expense was recognized in fiscal 2018 when the Company made a decision to maximize its tax benefit by accelerating the vesting of restricted stock units (“RSUs”) into fiscal 2018 that would have otherwise vested in August 2018. Related income tax benefits recognized were \$8.9 million, \$14.5 million, and \$13.4 million for the respective fiscal years. Capitalized stock-based compensation costs related to the development of internal use software for these same fiscal years were not significant.

As of May 31, 2019, the total unrecognized compensation cost related to all unvested stock-based awards was \$75.6 million and is expected to be recognized over a weighted-average period of 2.7 years.

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Black-Scholes fair value assumptions: The fair value of stock option grants and performance stock options was estimated at the date of grant using a Black-Scholes option pricing model. The weighted-average assumptions used for valuation under the Black-Scholes option pricing model are as follows:

| | Year ended May 31, | | |
|--|----------------------|---------|---------|
| | 2019 | 2018 | 2017 |
| | Stock options | | |
| Risk-free interest rate | 2.9 % | 2.1 % | 1.2 % |
| Dividend yield | 3.5 % | 3.4 % | 3.6 % |
| Volatility factor | 0.18 | 0.17 | 0.18 |
| Expected option life in years | 6.1 | 6.1 | 6.1 |
| Weighted-average grant-date fair value of stock options granted (per share) | \$ 8.87 | \$ 6.47 | \$ 5.74 |

| | Year ended May 31, | | |
|--|----------------------------------|---------|---------|
| | 2019 | 2018 | 2017 |
| | Performance stock options | | |
| Risk-free interest rate | 2.9 % | 2.4 % | 1.3 % |
| Dividend yield | 3.5 % | 3.3 % | 3.6 % |
| Volatility factor | 0.18 | 0.18 | 0.18 |
| Expected option life in years | 6.5 | 6.5 | 6.5 |
| Weighted-average grant-date fair value of stock options granted (per share) | \$ 9.02 | \$ 7.45 | \$ 5.97 |

Risk-free interest rates are yields for zero coupon U.S. Treasury notes maturing approximately at the end of the expected option life. The estimated volatility factor is based on a combination of historical volatility, using stock prices over a period equal to the expected option life, and implied market volatility. The expected option life is based on historical exercise behavior.

The Company has determined that the Black-Scholes option pricing model, as well as the underlying assumptions used in its application, are appropriate in estimating the fair value of its stock option grants. The Company periodically assesses its assumptions as well as its choice of valuation model, and will reconsider use of this model if additional information becomes available in the future indicating that another model would provide a more accurate estimate of fair value, or if characteristics of future grants would warrant such a change.

Stock options: Stock options entitle the holder to purchase, at the end of the vesting term, a specified number of shares of Paychex common stock at an exercise price per share set equal to the closing market price of the common stock on the date of grant. All stock options have a contractual life of ten years from the date of the grant and a vesting schedule as established by the Board. The Company issues new shares of common stock to satisfy stock option exercises. Non-qualified stock option grants to officers and outside directors are typically approved by the Board in July. Prior to fiscal 2018, grants of non-qualified stock options to officers vested one-quarter per annum. Beginning in fiscal 2018, grants of non-qualified stock options to officers vest one-third per annum. Grants to members of the Board vest after one year. Vesting is achieved on these dates with active employment or participation as a member of the Board on the date of vesting.

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The following table summarizes stock option activity for fiscal 2019:

| In millions, except per share amounts | Shares subject to options | Weighted- average exercise price per share | Weighted- average remaining contractual term (years) | Aggregate intrinsic value ⁽¹⁾ |
|---------------------------------------|---------------------------------|---|--|--|
| Outstanding as of May 31, 2018 | 4.4 | \$ 44.60 | | |
| Granted | 0.6 | \$ 69.71 | | |
| Exercised | (0.7) | \$ 36.73 | | |
| Forfeited | — | \$ 61.31 | | |
| Expired | — | \$ 31.00 | | |
| Outstanding as of May 31, 2019 | 4.3 | \$ 49.23 | 5.9 | \$ 157.1 |
| Exercisable as of May 31, 2019 | 2.9 | \$ 42.83 | 4.8 | \$ 123.2 |

(1) Total shares valued at the market price of the underlying stock as of May 31, 2019 less the exercise price.

Other information pertaining to stock option grants is as follows:

| In millions | Year ended May 31, | | |
|---|--------------------|--------|---------|
| | 2019 | 2018 | 2017 |
| Total intrinsic value of stock options exercised | \$ 25.7 | \$ 9.1 | \$ 23.8 |
| Total grant-date fair value of stock options vested | \$ 4.3 | \$ 4.0 | \$ 4.1 |

Restricted stock units: The Board grants RSUs to certain non-officer employees. An RSU is an agreement to issue shares at the time of vesting with no associated exercise cost for the employee. For each unit granted, the holder will receive one share of stock at the time of vesting. RSUs do not have voting rights or earn dividend equivalents during the vesting period. These awards vest one-fifth per annum over five years. The Company made a decision in fiscal 2018 to accelerate the vesting of the August 2018 tranche into fiscal 2018. The fair value of RSUs is equal to the closing market price of the underlying common stock as of the date of grant, adjusted for the present value of expected dividends over the vesting period.

The following table summarizes RSU activity for fiscal 2019:

| In millions, except per share amounts | RSUs | Weighted- average grant-date fair value per share | Weighted- average remaining vesting period (years) | Aggregate intrinsic value ⁽¹⁾ |
|---------------------------------------|------------|---|---|--|
| Nonvested as of May 31, 2018 | 1.1 | \$ 48.79 | | |
| Granted | 0.5 | \$ 62.20 | | |
| Vested | — | \$ 48.28 | | |
| Forfeited | (0.1) | \$ 52.68 | | |
| Nonvested as of May 31, 2019 | 1.5 | \$ 53.45 | 2.9 | \$ 127.0 |

(1) Intrinsic value for RSUs is based on the market price of the underlying stock as of May 31, 2019.

Other information pertaining to RSUs is as follows:

| In millions, except per share amounts | Year ended May 31, | | |
|--|--------------------|----------|----------|
| | 2019 | 2018 | 2017 |
| Weighted-average grant-date fair value per share of RSUs granted | \$ 62.20 | \$ 51.15 | \$ 53.76 |
| Total intrinsic value of RSUs vested | \$ 1.2 | \$ 60.9 | \$ 32.3 |
| Total grant-date fair value of RSUs vested | \$ 0.8 | \$ 42.4 | \$ 19.3 |

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Restricted stock awards: The Board has approved grants of restricted stock awards to the Company's officers and outside directors. All shares underlying awards of restricted stock are restricted in that they are not transferable until they vest. The recipients of the restricted stock have voting rights and earn dividends, which are paid to the recipient at the time the awards vest. If the recipient leaves Paychex prior to the vesting date for any reason, the shares of restricted stock and the dividends accrued on those shares will be forfeited and returned to Paychex.

Restricted stock awards granted to officers vest one-third per annum. Restricted stock awards granted to outside directors vest on the one-year anniversary of the grant date. The fair value of restricted stock awards is equal to the closing market price of the underlying common stock as of the date of grant and is expensed over the requisite service period on a straight-line basis. Vesting is achieved on these dates with active employment or participation as a member of the Board on the date of vesting.

The following table summarizes restricted stock activity for fiscal 2019:

| In millions, except per share amounts | Restricted shares | Weighted- average grant-date fair value per share |
|--|------------------------------|--|
| Nonvested as of May 31, 2018 | 0.1 | \$ 56.89 |
| Granted | 0.1 | \$ 69.80 |
| Vested | (0.1) | \$ 55.50 |
| Forfeited | — | \$ 69.54 |
| Nonvested as of May 31, 2019 | 0.1 | \$ 64.32 |

Other information pertaining to restricted stock is as follows:

| In millions, except per share amounts | Year ended May 31, | | |
|--|---------------------------|-------------|-------------|
| | 2019 | 2018 | 2017 |
| Weighted-average grant-date fair value per share of restricted stock granted | \$ 69.80 | \$ 57.50 | \$ 60.83 |
| Total grant-date fair value of restricted stock vested | \$ 3.0 | \$ 3.0 | \$ 3.0 |

Performance shares: Performance shares primarily have a two-year performance period, after which the amount of restricted shares earned will be determined based on achievement against established performance targets. The restricted shares earned will then be subject to a one-year service period. Performance shares do not have voting rights or earn dividend equivalents during the performance period. The fair value of performance shares is equal to the closing market price of the underlying common stock as of the date of grant, adjusted for the present value of expected dividends over the performance period.

The following table summarizes performance share activity for fiscal 2019:

| In millions, except per share amounts | Performance shares | Weighted- average grant-date fair value per share |
|--|-------------------------------|--|
| Nonvested as of May 31, 2018 | 0.4 | \$ 51.53 |
| Granted ⁽¹⁾ | 0.1 | \$ 65.17 |
| Vested | (0.1) | \$ 44.53 |
| Forfeited | — | \$ 58.86 |
| Nonvested as of May 31, 2019 | 0.4 | \$ 58.09 |

(1) Performance shares granted assuming achievement of performance goals at target. Actual amount of shares to be earned may differ from this amount.

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Other information pertaining to performance shares is as follows:

| In millions, except per share amounts | Year ended May 31, | | |
|--|---------------------------|-------------|-------------|
| | 2019 | 2018 | 2017 |
| Weighted-average grant-date fair value per share of performance shares granted | \$ 65.17 | \$ 53.08 | \$ 54.97 |
| Total grant-date fair value of performance shares vested | \$ 5.3 | \$ 6.6 | \$ 7.8 |

Long-term Incentive Plan (“LTIP”): In July 2011, the Board approved a special award of performance-based non-qualified stock options under an LTIP. Subsequent grants of this award were made upon hire of new officers. Under this award, stock options were granted to officers with vesting dependent on achievement against long-term strategic and financial objectives. Total stock options earned and vested were based on achievement against pre-established targets for fiscal 2016. The performance period was completed in fiscal 2016. Although the performance period was completed and the stock options were earned and vested, there are still stock options outstanding as of May 31, 2019.

In July 2016, the Board approved an LTIP award comprised of both performance-based non-qualified stock options and performance-based restricted stock. This award was granted to senior executives down to the vice president level with vesting dependent on achievement against long-term strategic and financial objectives. Total stock options and restricted shares to be earned are based on achievement against pre-established targets for the fiscal year ending May 31, 2020.

The following table summarizes LTIP performance stock option activity for fiscal 2019:

| In millions, except per share amounts | Shares subject to options | Weighted-average exercise price per share | Weighted-average remaining contractual term (years) | Aggregate intrinsic value ⁽¹⁾ |
|--|----------------------------------|--|--|---|
| Outstanding as of May 31, 2018 | 2.1 | \$ 49.26 | | |
| Granted ⁽²⁾ | 0.1 | \$ 69.54 | | |
| Exercised | (0.2) | \$ 33.80 | | |
| Forfeited | (0.1) | \$ 61.37 | | |
| Expired | — | \$ — | | |
| Outstanding as of May 31, 2019 | 1.9 | \$ 51.09 | 5.5 | \$ 66.5 |
| Exercisable as of May 31, 2019 | 0.6 | \$ 31.45 | 2.1 | \$ 35.3 |

- (1) Shares valued at the market price of the underlying stock as of May 31, 2019 less the exercise price.
- (2) LTIP performance stock options granted assumes achievement of performance goals at target. Actual amount of shares to be earned may differ from this amount.

Other information pertaining to LTIP performance stock options is as follows:

| In millions | Year ended May 31, | | |
|---|---------------------------|-------------|-------------|
| | 2019 | 2018 | 2017 |
| Total intrinsic value of stock options exercised | \$ 8.2 | \$ 7.9 | \$ 12.4 |
| Total grant-date fair value of stock options vested | \$ — | \$ — | \$ 4.9 |

LTIP performance-based restricted stock do not have voting rights or earn dividend equivalents during the performance period. The fair value of LTIP performance-based restricted stock is equal to the closing market price of the underlying common stock as of the date of grant, adjusted for the present value of expected dividends over the performance period. If the recipient leaves Paychex prior to the vesting date for any reason, the shares of restricted stock will be forfeited and returned to Paychex.

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The following table summarizes LTIP performance restricted stock activity for fiscal 2019:

| In millions, except per share amounts | Restricted shares | Weighted- average grant-date fair value per share |
|---------------------------------------|----------------------|---|
| Nonvested as of May 31, 2018 | 0.2 | \$ 53.86 |
| Granted ⁽¹⁾ | — | \$ 65.17 |
| Vested | — | \$ — |
| Forfeited | — | \$ 56.03 |
| Nonvested as of May 31, 2019 | 0.2 | \$ 54.31 |

- (1) LTIP performance shares granted assumes achievement of performance goals at target. Actual amount of shares to be earned may differ from this amount.

Non-compensatory employee benefit plan: The Company offers a qualified Employee Stock Purchase Plan (“ESPP”) to all employees. The Company’s common stock can be purchased through a payroll deduction at a discount to the market price. The qualified ESPP allows for a discount of up to 15% based on the sole discretion of the committee established to administer the plan. For offering periods during fiscal 2019, fiscal 2018, and fiscal 2017 the discount was set at 5% of the market price. Transactions under the non-qualified ESPP occurred directly through the Company’s transfer agent and no brokerage fees were charged to employees. Transactions under the qualified ESPP occur through the Company’s third-party stock plan administrator. The plans have been deemed non-compensatory and therefore, no stock-based compensation costs have been recognized for fiscal years 2019, 2018, or 2017 related to either plan.

Note G — Funds Held for Clients and Corporate Investments

Funds held for clients and corporate investments are as follows:

| In millions | May 31, 2019 | | | |
|--|-------------------|------------------------------|-------------------------------|-------------------|
| | Amortized cost | Gross unrealized gains | Gross unrealized losses | Fair value |
| Type of issue: | | | | |
| Funds held for clients' money market securities and other cash equivalents | \$ 204.5 | \$ — | \$ — | \$ 204.5 |
| Available-for-sale securities: | | | | |
| Asset-backed securities | 5.3 | — | — | 5.3 |
| Corporate bonds | 442.1 | 5.3 | (0.9) | 446.5 |
| General obligation municipal bonds | 840.6 | 7.5 | (0.3) | 847.8 |
| Pre-refunded municipal bonds ⁽¹⁾ | 25.6 | 0.2 | — | 25.8 |
| Revenue municipal bonds | 545.4 | 4.7 | (0.2) | 549.9 |
| U.S. government agency and treasury securities | 612.5 | 4.7 | (1.3) | 615.9 |
| Variable rate demand notes | 1,129.6 | — | — | 1,129.6 |
| Total available-for-sale securities | 3,601.1 | 22.4 | (2.7) | 3,620.8 |
| Other | 26.3 | 1.7 | (0.3) | 27.7 |
| Total funds held for clients and corporate investments | \$ 3,831.9 | \$ 24.1 | \$ (3.0) | \$ 3,853.0 |

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| In millions | May 31, 2018 | | | |
|--|-------------------|------------------------|-------------------------|-------------------|
| | Amortized cost | Gross unrealized gains | Gross unrealized losses | Fair value |
| Type of issue: | | | | |
| Funds held for clients' money market securities and other cash equivalents | \$ 1,942.3 | \$ — | \$ — | \$ 1,942.3 |
| Available-for-sale securities: | | | | |
| Corporate bonds | 328.6 | 0.1 | (7.3) | 321.4 |
| General obligation municipal bonds | 1,231.6 | 1.3 | (11.2) | 1,221.7 |
| Pre-refunded municipal bonds ⁽¹⁾ | 50.9 | 0.1 | (0.1) | 50.9 |
| Revenue municipal bonds | 813.5 | 0.9 | (8.0) | 806.4 |
| U.S. government agency and treasury securities | 410.2 | — | (14.1) | 396.1 |
| Variable rate demand notes | 308.3 | — | — | 308.3 |
| Total available-for-sale securities | 3,143.1 | 2.4 | (40.7) | 3,104.8 |
| Other | 16.1 | 2.1 | — | 18.2 |
| Total funds held for clients and corporate investments | \$ 5,101.5 | \$ 4.5 | \$ (40.7) | \$ 5,065.3 |

(1) Pre-refunded municipal bonds are secured by an escrow fund of U.S. government obligations.

Included in money market securities and other cash equivalents as of May 31, 2019 were bank demand deposit accounts, commercial paper, and money market funds. Included in money market securities and other cash equivalents as of May 31, 2018 were bank demand deposit accounts, time deposits, commercial paper, and money market funds.

Classification of investments on the Consolidated Balance Sheets is as follows:

| In millions | May 31, | |
|---|-------------------|-------------------|
| | 2019 | 2018 |
| Funds held for clients | \$ 3,803.8 | \$ 4,703.8 |
| Corporate investments | 39.0 | 66.0 |
| Long-term corporate investments | 10.2 | 295.5 |
| Total funds held for clients and corporate investments | \$ 3,853.0 | \$ 5,065.3 |

Funds held for clients' money market securities and other cash equivalents is collected from payroll clients before due dates for payroll tax administration services and employee payment services, and is invested until remitted to the applicable tax or regulatory agencies or client employees. Based upon the Company's intent and its contractual obligation to the client, these funds are considered restricted until they are remitted to fund these client obligations.

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The Company's available-for-sale securities reflected a net unrealized gain of \$19.7 million as of May 31, 2019, compared to a net unrealized loss of \$38.3 million as of May 31, 2018. Included in the net unrealized gain as of May 31, 2019 were 269 available-for-sale securities in an unrealized loss position. Included in the net unrealized loss as of May 31, 2018 were 970 available-for-sale securities in an unrealized loss position. The available-for-sale securities in an unrealized loss position were as follows:

| In millions | May 31, 2019 | | | | | |
|--|---|---------------|---|-----------------|-------------------------|-----------------|
| | Securities in an unrealized loss position for less than twelve months | | Securities in an unrealized loss position for more than twelve months | | Total | |
| | Gross unrealized losses | Fair value | Gross unrealized losses | Fair value | Gross unrealized losses | Fair value |
| Type of issue: | | | | | | |
| Corporate bonds | \$ — | \$ 1.5 | \$ (0.9) | \$ 133.8 | \$ (0.9) | \$ 135.3 |
| General obligation municipal bonds | — | 3.0 | (0.3) | 168.3 | (0.3) | 171.3 |
| Pre-refunded municipal bonds | — | 0.1 | — | 1.6 | — | 1.7 |
| Revenue municipal bonds | — | 0.1 | (0.2) | 79.2 | (0.2) | 79.3 |
| U.S. government agency and treasury securities | — | 4.7 | (1.3) | 175.6 | (1.3) | 180.3 |
| Total | \$ — | \$ 9.4 | \$ (2.7) | \$ 558.5 | \$ (2.7) | \$ 567.9 |

| In millions | May 31, 2018 | | | | | |
|--|---|-------------------|---|-----------------|-------------------------|-------------------|
| | Securities in an unrealized loss position for less than twelve months | | Securities in an unrealized loss position for more than twelve months | | Total | |
| | Gross unrealized losses | Fair value | Gross unrealized losses | Fair value | Gross unrealized losses | Fair value |
| Type of issue: | | | | | | |
| Corporate bonds | \$ (6.0) | \$ 271.5 | \$ (1.3) | \$ 34.6 | \$ (7.3) | \$ 306.1 |
| General obligation municipal bonds | (8.7) | 856.4 | (2.5) | 68.9 | (11.2) | 925.3 |
| Pre-refunded municipal bonds | (0.1) | 18.5 | — | 0.5 | (0.1) | 19.0 |
| Revenue municipal bonds | (6.3) | 540.9 | (1.7) | 50.9 | (8.0) | 591.8 |
| U.S. government agency and treasury securities | (6.4) | 219.7 | (7.7) | 176.4 | (14.1) | 396.1 |
| Total | \$ (27.5) | \$ 1,907.0 | \$ (13.2) | \$ 331.3 | \$ (40.7) | \$ 2,238.3 |

The Company regularly reviews its investment portfolios to determine if any investment is other-than-temporarily impaired due to changes in credit risk or other potential valuation concerns. The Company believes that the investments held as of May 31, 2019 that had gross unrealized losses of \$2.7 million were not other-than-temporarily impaired. The Company believes that it is probable that the principal and interest will be collected in accordance with contractual terms, and that the unrealized losses on these securities were due to changes in interest rates and were not due to increased credit risk or other valuation concerns. A majority of the securities in an unrealized loss position as of May 31, 2019 and May 31, 2018 held an AA rating or better. The Company does not intend to sell these investments until the recovery of their amortized cost basis or maturity, and further believes that it is not more-likely-than-not that it will be required to sell these investments prior to that time. The Company's assessment that an investment is not other-than-temporarily impaired could change in the future due to new developments or changes in the Company's strategies or assumptions related to any particular investment.

Realized gains and losses from the sale of available-for-sale securities were as follows:

| In millions | Year ended May 31, | | |
|---------------------------|--------------------|---------------|---------------|
| | 2019 | 2018 | 2017 |
| Gross realized gains | \$ 0.6 | \$ 0.3 | \$ 0.1 |
| Gross realized losses | (0.6) | (0.2) | — |
| Net realized gains | \$ — | \$ 0.1 | \$ 0.1 |

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The amortized cost and fair value of available-for-sale securities that had stated maturities as of May 31, 2019 are shown below by contractual maturity. Expected maturities can differ from contractual maturities because borrowers may have the right to prepay obligations without prepayment penalties.

| In millions | May 31, 2019 | |
|--|---------------------------|-----------------------|
| | Amortized cost | Fair value |
| Maturity date: | | |
| Due in one year or less | \$ 183.5 | \$ 183.4 |
| Due after one year through three years | 898.9 | 903.1 |
| Due after three years through five years | 989.2 | 998.7 |
| Due after five years | 1,529.5 | 1,535.6 |
| Total | \$ 3,601.1 | \$ 3,620.8 |

Variable rate demand notes are primarily categorized as due after five years in the table above as the contractual maturities on these securities are typically 20 to 30 years. Although these securities are issued as long-term securities, they are priced and traded as short-term instruments because of the liquidity provided through the tender feature.

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Note H — Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants at the measurement date. The accounting standards related to fair value measurements include a hierarchy for information and valuations used in measuring fair value that is broken down into three levels based on reliability, as follows:

- Level 1 valuations are based on quoted prices in active markets for identical instruments that the Company can access at the measurement date.
- Level 2 valuations are based on inputs other than quoted prices included in Level 1 that are observable for the instrument, either directly or indirectly, for substantially the full term of the asset or liability including the following:
 - quoted prices for similar, but not identical, instruments in active markets;
 - quoted prices for identical or similar instruments in markets that are not active;
 - inputs other than quoted prices that are observable for the instrument; or
 - inputs that are derived principally from or corroborated by observable market data by correlation or other means.
- Level 3 valuations are based on information that is unobservable and significant to the overall fair value measurement.

The carrying values of cash and cash equivalents, restricted cash and restricted cash equivalents, accounts receivable, net of allowance for doubtful accounts, accounts payable and short-term borrowings, when used by the Company, approximate fair value due to the short maturities of these instruments. Marketable securities included in funds held for clients and corporate investments consist primarily of securities classified as available-for-sale and are recorded at fair value on a recurring basis.

The Company's financial assets and liabilities measured at fair value on a recurring basis were as follows:

| | May 31, 2019 | | | |
|--|-----------------------------------|---|---|--|
| | Carrying value (Fair value) | Quoted prices in active markets (Level 1) | Significant other observable inputs (Level 2) | Significant unobservable inputs (Level 3) |
| In millions | | | | |
| Assets: | | | | |
| Restricted cash equivalents: | | | | |
| Commercial paper | \$ 10.0 | \$ — | \$ 10.0 | \$ — |
| Money market securities | 29.2 | 29.2 | — | — |
| Total restricted cash equivalents | \$ 39.2 | \$ 29.2 | \$ 10.0 | \$ — |
| Available-for-sale securities: | | | | |
| Asset-backed securities | \$ 5.3 | — | \$ 5.3 | \$ — |
| Corporate bonds | 446.5 | \$ — | 446.5 | — |
| General obligation municipal bonds | 847.8 | — | 847.8 | — |
| Pre-refunded municipal bonds | 25.8 | — | 25.8 | — |
| Revenue municipal bonds | 549.9 | — | 549.9 | — |
| U.S. government agency and treasury securities | 615.9 | — | 615.9 | — |
| Variable rate demand notes | 1,129.6 | — | 1,129.6 | — |
| Total available-for-sale securities | \$ 3,620.8 | \$ — | \$ 3,620.8 | \$ — |
| Other | \$ 27.7 | \$ 27.7 | \$ — | \$ — |
| Liabilities: | | | | |
| Other long-term liabilities | \$ 27.0 | \$ 27.0 | \$ — | \$ — |

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| In millions | May 31, 2018 | | | |
|--|-----------------------------|---|---|---|
| | Carrying value (Fair value) | Quoted prices in active markets (Level 1) | Significant other observable inputs (Level 2) | Significant unobservable inputs (Level 3) |
| Assets: | | | | |
| Restricted cash equivalents: | | | | |
| Commercial paper | \$ 655.0 | \$ — | \$ 655.0 | \$ — |
| Time deposits | 200.0 | — | 200.0 | — |
| Money market securities | 7.1 | 7.1 | — | — |
| Total restricted cash equivalents | \$ 862.1 | \$ 7.1 | \$ 855.0 | \$ — |
| Available-for-sale securities: | | | | |
| Corporate bonds | \$ 321.4 | \$ — | \$ 321.4 | \$ — |
| General obligation municipal bonds | 1,221.7 | — | 1,221.7 | — |
| Pre-refunded municipal bonds | 50.9 | — | 50.9 | — |
| Revenue municipal bonds | 806.4 | — | 806.4 | — |
| U.S. government agency and treasury securities | 396.1 | — | 396.1 | — |
| Variable rate demand notes | 308.3 | — | 308.3 | — |
| Total available-for-sale securities | \$ 3,104.8 | \$ — | \$ 3,104.8 | \$ — |
| Other | \$ 18.2 | \$ 18.2 | \$ — | \$ — |
| Liabilities: | | | | |
| Other long-term liabilities | \$ 18.2 | \$ 18.2 | \$ — | \$ — |

In determining the fair value of its assets and liabilities, the Company predominately uses the market approach. Money market securities, which are cash equivalents, are valued based on quoted market prices in active markets. Commercial paper and time deposits, which are cash equivalents, are considered Level 2 investments as they are valued based on similar, but not identical, instruments in active markets. Available-for-sale securities, including municipal bonds, asset-backed securities, variable rate demand notes, corporate bonds, and U.S. government agency and treasury securities, are included in Level 2 and are valued utilizing inputs obtained from an independent pricing service. To determine the fair value of the Company's Level 2 available-for-sale securities, the independent pricing service uses a variety of inputs, including benchmark yields, reported trades, non-binding broker/dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers, reference data, new issue data, and monthly payment information. The Company has not adjusted the prices obtained from the independent pricing service because it believes that they are appropriately valued.

Assets included as other are mutual fund investments, consisting of participants' eligible deferral contributions under the Company's non-qualified and unfunded deferred compensation plans. The related liability is reported as other long-term liabilities. The mutual funds are valued based on quoted market prices in active markets.

The Company's financial liabilities accounted for under historical cost but for which fair value measurements are periodically determined on a non-recurring basis were as follows:

| In millions | May 31, 2019 | |
|--|-----------------|-----------------|
| | Amortized cost | Fair value |
| Long-term borrowings | | |
| Senior Notes, Series A | \$ 400.0 | \$ 418.4 |
| Senior Notes, Series B | 400.0 | 420.1 |
| Total long-term borrowings | 800.0 | 838.5 |
| Less: Debt issuance costs, net of accumulated amortization | (3.6) | (3.6) |
| Long-term borrowings, net of debt issuance costs | \$ 796.4 | \$ 834.9 |

There were no long-term borrowings outstanding as of May 31, 2018.

The Company's long-term borrowings are not traded in active markets and as a result its fair values were estimated using a market approach employing Level 2 valuation inputs, including borrowing rates the Company believes are currently available based on loans with similar terms and maturities.

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The preceding methods described may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, although the Company believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

Note I — Property and Equipment, Net of Accumulated Depreciation

The components of property and equipment, at cost, consisted of the following:

| In millions | May 31, | |
|--|-----------------|-----------------|
| | 2019 | 2018 |
| Land and improvements | \$ 10.8 | \$ 10.6 |
| Buildings and improvements | 162.9 | 126.4 |
| Data processing equipment | 221.6 | 211.3 |
| Software ⁽¹⁾ | 626.6 | 545.5 |
| Furniture, fixtures, and equipment | 117.2 | 114.5 |
| Leasehold improvements | 105.4 | 111.4 |
| Construction in progress ⁽¹⁾ | 30.3 | 63.0 |
| Total property and equipment, gross | 1,274.8 | 1,182.7 |
| Less: Accumulated depreciation | 866.1 | 789.2 |
| Property and equipment, net of accumulated depreciation | \$ 408.7 | \$ 393.5 |

(1) Software includes both purchased software and costs capitalized related to internally developed software placed in service. Capitalized costs related to internally developed software that has not yet been placed in service is included in construction in progress.

Depreciation expense was \$125.7 million, \$116.9 million, and \$108.8 million for fiscal years 2019, 2018, and 2017, respectively.

The Company has substantially completed its plan for a new multi-building Paychex campus, including the renovation of over 300,000 square feet based in Rochester, NY. The Company completed the purchase of five buildings during the three months ended November 30, 2017 for a combined cost of approximately \$34.7 million and placed approximately \$16.0 million in escrow for building renovations. As of May 31, 2018, the Company had \$14.2 million remaining in escrow. There was no remaining balance in escrow as of May 31, 2019.

Note J — Goodwill and Intangible Assets, Net of Accumulated Amortization

The change in goodwill for the years ended May 31, 2019 and May 31, 2018 are as follows:

| In millions | May 31, | |
|------------------------------------|-------------------|-----------------|
| | 2019 | 2018 |
| Balance, beginning of fiscal year | \$ 814.0 | \$ 657.1 |
| Changes during the period: | | |
| Goodwill acquired | 972.1 | 162.6 |
| Acquisition accounting adjustments | 1.6 | - |
| Currency translation adjustment | (5.1) | (5.7) |
| Balance, end of fiscal year | \$ 1,782.6 | \$ 814.0 |

Goodwill acquired in fiscal 2019 related to the December 2018 acquisition of Oasis. Goodwill acquired in fiscal 2018 related to the August 2017 acquisition of HROi and February 2018 acquisition of Lessor. Refer to Note D of this Item 8 for further details.

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The Company had certain intangible assets on its Consolidated Balance Sheets. The components of intangible assets, at cost, consisted of the following:

| In millions | May 31, | |
|---|-----------------|-----------------|
| | 2019 | 2018 |
| Client lists ⁽¹⁾ | \$ 608.2 | \$ 308.5 |
| Other intangible assets | 23.0 | 13.3 |
| Total intangible assets, gross | 631.2 | 321.8 |
| Less: Accumulated amortization | 232.1 | 180.4 |
| Intangible assets, net of accumulated amortization | \$ 399.1 | \$ 141.4 |

(1) Client lists and other intangible assets include current estimates of amounts acquired from Oasis as of December 20, 2018. Refer to Note D of this Item 8 for further details.

During fiscal 2019, the Company acquired intangible assets with weighted-average amortization periods as follows: customer lists — 10.0 years; other intangible assets — 3.0 years ; and total — 9.7 years. Amortization expense relating to intangible assets was \$55.8 million, \$21.1 million, and \$18.1 million for fiscal years 2019, 2018, and 2017, respectively.

The estimated amortization expense for the next five fiscal years relating to intangible asset balances is as follows:

| In millions | Estimated amortization | |
|----------------------------|-------------------------------|------|
| Year ending May 31, | expense | |
| 2020 | \$ | 67.1 |
| 2021 | | 63.8 |
| 2022 | | 57.4 |
| 2023 | | 54.1 |
| 2024 | | 51.7 |

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Note K — Income Taxes

The components of deferred tax assets and liabilities are as follows:

| In millions | May 31, | |
|--|-------------------|--|
| | 2019 | 2018 As Adjusted ⁽¹⁾ |
| Deferred tax assets: | | |
| Compensation and employee benefit liabilities | \$ 36.3 | \$ 15.0 |
| Other current liabilities | 8.8 | 6.5 |
| Tax credit carry forward | 0.2 | 0.2 |
| Depreciation | — | 3.6 |
| Stock-based compensation | 17.5 | 11.6 |
| Unrealized losses on available-for-sale securities | — | 9.2 |
| Net operating loss ("NOL") carry forwards | 10.6 | 5.9 |
| Tax benefit of uncertain tax positions | 5.7 | 3.7 |
| Other | 1.2 | 2.3 |
| Gross deferred tax assets | 80.3 | 58.0 |
| Deferred tax liabilities: | | |
| Deferred contract costs | 119.7 | 105.6 |
| Capitalized software | 42.8 | 39.4 |
| Depreciation | 3.0 | — |
| Goodwill and intangible assets | 127.5 | 49.0 |
| Revenue not subject to current taxes | 5.2 | 18.4 |
| Unrealized gains on available-for-sale securities | 5.2 | — |
| Gross deferred tax liabilities | 303.4 | 212.4 |
| Net deferred tax liability | \$ (223.1) | \$ (154.4) |

⁽¹⁾ Amounts have been adjusted to reflect the adoption of ASC Topic 606 .

The deferred tax asset related to NOL carry forward is comprised of \$ 5.6 million of federal NOL carry forwards and \$ 5.0 million of state NOL carry forwards. The federal NOL carry forwards were acquired through various acquisitions and expire between the fiscal years ending May 31, 2020 through May 31, 2036 . The state NOL carry forwards expire between the fiscal years ending May 31, 2020 through May 31, 2039 .

The components of the provision for income taxes are as follows:

| In millions | Year ended May 31, | | |
|-----------------------|---------------------------|--|--|
| | 2019 | 2018 As Adjusted ⁽¹⁾ | 2017 As Adjusted ⁽¹⁾ |
| Current: | | | |
| Federal | \$ 258.2 | \$ 289.1 | \$ 362.0 |
| State | 70.7 | 54.1 | 48.1 |
| Total current | 328.9 | 343.2 | 410.1 |
| Deferred: | | | |
| Federal | 0.7 | (38.0) | 21.2 |
| State | 4.0 | 0.8 | 1.5 |
| Total deferred | 4.7 | (37.2) | 22.7 |
| Income taxes | \$ 333.6 | \$ 306.0 | \$ 432.8 |

⁽¹⁾ Amounts have been adjusted to reflect the adoption of ASC Topic 606.

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A reconciliation of the U.S. federal statutory tax rate to the Company's effective income tax rate is as follows:

| | Year ended May 31, | | |
|---|--------------------|---------------|---------------|
| | 2019 | 2018 | 2017 |
| Federal statutory tax rate | 21.0 % | 29.2 % | 35.0 % |
| Increase/(decrease) resulting from: | | | |
| Statutory tax rate reduction resulting from the Tax Act | — % | (2.0)% | — % |
| State income taxes, net of federal tax benefit | 4.3 % | 3.0 % | 2.8 % |
| Section 199 - Qualified production activities | — % | (0.3)% | (0.5)% |
| Tax-exempt municipal bond interest | (0.5)% | (1.1)% | (1.3)% |
| Stock option windfall benefit | (0.5)% | (0.8)% | (1.5)% |
| Other items, including adoption of ASC 606 | 0.1 % | (4.5)% | (0.1)% |
| Effective income tax rate | 24.4 % | 23.5 % | 34.4 % |

The effective income tax rate for both fiscal 2019 and fiscal 2018 benefited from the enactment of the Tax Act. In addition, the effective income tax rates in all periods were impacted by recognition of net discrete tax benefits related to employee stock-based compensation payments.

The Tax Act made broad and complex changes to U.S. federal corporate income taxation including, but not limited to: (i) reducing the statutory corporate tax rate from 35% to 21% (a blended statutory tax rate of 29.2% for fiscal 2018); (ii) repeal of the Section 199 qualified production activities deduction; (iii) creating new or furthering limitations to the deductibility of certain officer compensation, interest, meals, entertainment and other expenses; and (iv) changing from a worldwide to a territorial taxation system. As of May 31, 2019, the Company's accounting for the impact of the Tax Act is complete.

As a result of the Tax Act, the Company derived estimated tax benefits of \$ 160.5 million, including a net tax benefit of \$83.5 million related to the revaluation of the Company's net deferred tax liabilities and a net tax benefit of \$77.0 million related to the reduction in the Company's statutory income tax rate for fiscal 2018 applied to income before taxes. These amounts totaled \$0.23 per diluted share and \$0.21 per diluted share, respectively.

Uncertain income tax positions: The Company is subject to U.S. federal income tax, numerous local and state tax jurisdictions within the U.S., and taxes in Europe. The Company maintains a reserve for uncertain tax positions. As of May 31, 2019 and May 31, 2018, the total reserve for uncertain tax positions, including interest and net of federal benefits, was \$21.6 million and \$14.7 million, respectively, and was included in long-term liabilities on the Consolidated Balance Sheets.

A reconciliation of the beginning and ending amounts of the Company's gross unrecognized tax benefits, not including interest or other potential offsetting effects, is as follows:

| In millions | Year ended May 31, | | |
|---|--------------------|----------------|----------------|
| | 2019 | 2018 | 2017 |
| Balance as of beginning of fiscal year | \$ 14.9 | \$ 43.7 | \$ 64.7 |
| Additions for tax positions of the current year | 3.8 | 2.3 | 8.2 |
| Additions for tax positions of prior years | 5.2 | 0.1 | 4.8 |
| Reductions for tax positions of prior years | — | (1.2) | (2.5) |
| Settlements with tax authorities | (1.2) | (28.6) | (29.5) |
| Expiration of the statute of limitations | (0.6) | (1.4) | (2.0) |
| Balance as of end of fiscal year | \$ 22.1 | \$ 14.9 | \$ 43.7 |

In December 2016, the Company executed a closing agreement that resolved tax matters related to the audits by New York State for the fiscal year ended May 31, 2012 ("fiscal 2012") through the fiscal year ended May 31, 2014 ("fiscal 2014"). As a result, the reserve for uncertain tax positions was decreased by \$28.9 million in December 2016. The resolution and execution of the closing agreement in December 2016 on the open tax matters for fiscal 2012 through fiscal 2014 had a minimal impact on the Company's effective income tax rate for fiscal 2017.

In May 2018, the Company settled its IRS examination for fiscal 2012 through fiscal 2017. As a result of the settlement, the reserve for uncertain tax positions was decreased by \$27.2 million and income tax expense of \$2.7 million was recorded.

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The reserve as of May 31, 2019 substantially relates to the Company's uncertain tax positions for certain state income tax matters. The Company believes the reserve for uncertain tax positions, including interest and net of federal benefits, of \$21.6 million as of May 31, 2019 adequately covers open tax years and uncertain tax positions up to and including fiscal 2019 for major taxing jurisdictions. As of May 31, 2019 and May 31, 2018, the entire \$21.6 million and \$14.7 million, respectively, of unrecognized tax benefits, including interest and net of federal benefit, if recognized, would impact the Company's effective income tax rate.

The Company has concluded all U.S. federal income tax matters through fiscal 2017. With limited exception, state income tax audits by taxing authorities are closed through fiscal 2014, primarily due to expiration of the statute of limitations.

The Company continues to follow its policy of recognizing interest and penalties accrued on tax positions as a component of income taxes on the Consolidated Statements of Income and Comprehensive Income. The amount of accrued interest and penalties associated with the Company's tax positions is immaterial to the Consolidated Balance Sheets. The amount of interest and penalties recognized for fiscal years 2019, 2018, and 2017 was immaterial to the Company's results of operations.

Note L — Accumulated Other Comprehensive Income/(Loss)

The change in unrealized gains and losses, net of applicable taxes, related to investments in available-for-sale securities and foreign currency translation adjustments are the primary components reported in accumulated other comprehensive income/(loss) in the Company's Consolidated Balance Sheets. The changes in accumulated other comprehensive income/(loss) are as follows:

| In millions | Year ended May 31, | | |
|--|---------------------------|------------------|-----------------|
| | 2019 | 2018 | 2017 |
| Beginning balance | \$ (36.2) | \$ 20.0 | \$ 29.2 |
| Other comprehensive income/(loss): | | | |
| Unrealized holding gains/(losses) | 58.2 | (70.2) | (14.7) |
| Income tax (expense)/benefit related to unrealized holding gains/(losses) | (14.2) | 22.6 | 5.6 |
| Reclassification adjustment for the net gain on sale of available-for-sale securities realized in net income | — | — | (0.1) |
| Foreign currency translation adjustment | (7.7) | (8.6) | — |
| Total other comprehensive income/(loss), net of tax | 36.3 | (56.2) | (9.2) |
| Ending balance | \$ 0.1 | \$ (36.2) | \$ 20.0 |
| Total tax expense/(benefit) included in other comprehensive income/(loss) | \$ 14.2 | \$ (22.6) | \$ (5.6) |

Reclassification adjustments out of accumulated other comprehensive income/(loss) are for realized gains and losses on the sale of available-for-sale securities and are reflected in interest on funds held for clients and interest (expense)/income on the Consolidated Statements of Income and Comprehensive Income.

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Note M — Short-term Financing

The Company maintains credit facilities and letters of credit as part of its normal and recurring business operations.

Credit Facilities: The Company maintains three committed, unsecured credit facilities, as follows:

| Bank | Borrower ⁽¹⁾ | Date Entered | Expiration Date | Maximum Amount Available | Purpose |
|---|--------------------------------|---------------------|------------------------|---------------------------------|--|
| JP Morgan Chase Bank, N.A. ⁽²⁾ | Paychex of New York, LLC | August 5, 2015 | August 5, 2020 | \$1 Billion | To meet short-term funding requirements. |
| JP Morgan Chase Bank, N.A. ⁽²⁾ | Paychex of New York, LLC | August 17, 2017 | August 17, 2022 | \$500 Million | To meet short-term funding requirements. |
| PNC Bank, National Association (“PNC”) | Paychex Advance, LLC | March 17, 2016 | March 17, 2020 | \$150 Million | To finance working capital needs and general corporate purposes. |

(1) Borrower is a wholly owned subsidiary of the Company.

(2) JP Morgan Chase Bank, N.A. (“JPM”) acts as the administrative agent for this syndicated credit facility.

For all credit facilities, obligations under any facility are guaranteed by the Company and certain of its subsidiaries and will bear interest at competitive rates based on options provided to the borrower. Upon the expiration date, any borrowings outstanding will mature and be payable on such date .

JPM \$1 Billion Credit Facility: There were no borrowings outstanding under this credit facility as of May 31, 2019 or May 31, 2018 . Details of borrowings under this credit facility during fiscal 2019 and fiscal 2018 are as follows:

| \$ in millions | Year ended May 31, | |
|----------------------------------|---------------------------|-------------|
| | 2019 | 2018 |
| Number of days borrowed | 95 | 22 |
| Maximum amount borrowed | \$ 483.0 | \$ 700.0 |
| Weighted-average amount borrowed | \$ 387.7 | \$ 319.1 |
| Weighted-average interest rate | 3.64 % | 4.27 % |

The Company typically borrows on an overnight basis. In addition to overnight borrowings, the Company also borrowed:

- Fiscal 2019 - \$400.0 million for 84 day s at a weighted-average LIBOR-based interest rate of 3.45% to temporarily fund the acquisition of Oasis. This temporary borrowing was subsequently refinanced as outlined in Note N to the financial statements;
- Fiscal 2018 - \$100.0 million for three -day period at a weighted-average 4.25% .

Subsequent to May 31, 2019 , the Company borrowed two times, on an overnight basis, \$187.8 million on a weighted-average basis under this line.

JPM \$500 Million Credit Facility: There were no borrowings outstanding under this credit facility as of May 31, 2019 or May 31, 2018 . Details of borrowings under this credit facility during fiscal 2019 and fiscal 2018 is as follows:

| \$ in millions | Year ended May 31, | |
|----------------------------------|---------------------------|-------------|
| | 2019 | 2018 |
| Number of days borrowed | 92 | 42 |
| Maximum amount borrowed | \$ 400.0 | \$ 400.0 |
| Weighted-average amount borrowed | \$ 375.6 | \$ 144.8 |
| Weighted-average interest rate | 3.55 % | 2.80 % |

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The Company typically borrows on an overnight basis. In addition to overnight borrowings, the Company also borrowed:

- Fiscal 2019 - \$400 million for 84 days at a weighted-average LIBOR-based interest rate of 3.45% to temporarily fund the acquisition of Oasis. This temporary borrowing was subsequently refinanced as outlined in Note N to the financial statements;
- Fiscal 2018 - \$300.0 million for seven days and \$75.0 million for 30 days at weighted average LIBOR-based interest rates of 2.13% and 2.19% , respectively.

Subsequent to May 31, 2019 , the Company borrowed two times, on an overnight basis, \$178.0 million on a weighted-average basis under this line.

PNC \$150 Million Credit Facility: There were no borrowings outstanding under this credit facility as of May 31, 2019 or May 31, 2018 . Details of borrowings under this credit facility during fiscal 2019 and fiscal 2018 are as follows:

| \$ in millions | Year ended May 31, | |
|----------------------------------|--------------------|---------|
| | 2019 | 2018 |
| Number of days borrowed | 359 | 358 |
| Maximum amount borrowed | \$ 58.9 | \$ 59.9 |
| Weighted-average amount borrowed | \$ 56.1 | \$ 57.2 |
| Weighted-average interest rate | 2.81 % | 1.94 % |

Subsequent to May 31, 2019 , the Company borrowed approximately \$54.9 million under this line, which remains outstanding as of the date of this report.

All of the Company's credit facilities contain various financial and operational covenants that are usual and customary for such arrangements. The Company was in compliance with all of these covenants as of May 31, 2019 .

Certain lenders under these credit facilities, and their respective affiliates, have performed, and may in the future perform for the Company, various commercial banking, investment banking, underwriting, and other financial advisory services, for which they have received, and will continue to receive in the future, customary fees and expenses.

Letters of credit: The Company had irrevocable standby letters of credit outstanding totaling \$148.9 million and \$56.8 million as of May 31, 2019 and May 31, 2018 , respectively, required to secure commitments for certain insurance policies. The letters of credit expire at various dates between July 2019 and July 2020. No amounts were outstanding on these letters of credit during fiscal 2019 or fiscal 2018 , or as of May 31, 2019 and May 31, 2018 . Subsequent to May 31, 2019 , the letter of credit expiring in July 2019 was renewed through July 2020.

Lines of credit: Effective August 17, 2017, the Company terminated four uncommitted, secured, short-term lines of credit totaling \$900.0 million. There were no amounts outstanding under these lines of credit during fiscal 2018 , or as of May 31, 2018 . The Company does not have any other open lines of credit as of the date of this report.

Note N — Long-term Financing

On March 13, 2019, the Company and its Paychex of New York LLC ("PoNY") subsidiary completed the private placement of Senior Notes, Series A in an aggregate principal amount of \$400.0 million due on March 13, 2026 , and Senior Notes, Series B in an aggregate principal amount of \$400.0 million due on March 13, 2029 (collectively the "Notes"), pursuant to its Note Purchase and Guarantee Agreement (the "Agreement") among the Company, PoNY, and the respective purchasers. Proceeds from the Notes were used to pay off \$800.0 million in short-term borrowings under the Company's JPM credit facilities used to temporarily finance the acquisition of Oasis.

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Long-term debt, at amortized cost, consisted of the following:

| In millions | May 31, 2019 |
|--|-----------------|
| Senior Notes, Series A | \$ 400.0 |
| Senior Notes, Series B | 400.0 |
| Total long-term borrowings | 800.0 |
| Less: Debt issuance costs, net of accumulated amortization | (3.6) |
| Long-term borrowings, net of debt issuance costs | \$ 796.4 |

There was no long-term debt outstanding as of May 31, 2018.

Certain information related to the Senior Notes are as follows:

| | Senior Notes Series A | Senior Notes Series B |
|-------------------------|--------------------------|--------------------------|
| Stated interest rate | 4.07% | 4.25% |
| Effective interest rate | 4.16% | 4.32% |
| Interest rate type | Fixed | Fixed |
| Interest payment dates | Semi-annual, in arrears | Semi-annual, in arrears |
| Principal payment dates | March 13, 2026 | March 13, 2029 |
| Note type | Unsecured | Unsecured |

The effective interest rates for each note series includes the interest on the note and amortization of debt issuance costs.

Payment of all amounts due with respect to the Notes and performance under the Agreement is guaranteed by the Company, PoNY and certain other subsidiaries of the Company. The Company may, at its option, prepay at any time all, or any part of, the Notes, subject to certain conditions as described in the Agreement.

The Agreement contains customary representations, warranties, affirmative and negative covenants, including financial covenants that are usual and customary for such arrangements. The Company was in compliance with all of these covenants as of May 31, 2019.

Note O — Supplemental Cash Flow Information

Income taxes paid were \$317.9 million, \$319.1 million, and \$462.6 million for fiscal 2019, 2018, and 2017, respectively.

Interest expense paid was \$10.4 million, \$ 4.0 million, and \$2.5 million for fiscal 2019, 2018, and 2017, respectively .

Lease incentives received in the form of tenant allowances and free rent were \$3.5 million, \$7.7 million, and \$5.8 million for fiscal 2019, 2018, and 2017, respectively.

\$33.2 million in Paychex common stock was issued in connection with the Company's acquisition of HROi in fiscal 2018.

Note P — Employee Benefit Plans

401(k) plan: The Company maintains a contributory savings plan that qualifies under section 401(k) of the Internal Revenue Code. The Paychex, Inc. 401(k) Incentive Retirement Plan (the "Plan") allows all employees to immediately participate in the salary deferral portion of the Plan, contributing up to a maximum of 50% of their salary, subject to Internal Revenue Service limitations. Employees who have completed one year of service and a minimum of 1,000 hours worked are eligible to receive a Company matching contribution, when such contribution is in effect. The Company provided a matching contribution of 50% of up to 8% of eligible pay that an employee contributed to the Plan through March 29, 2018. Beginning March 30, 2018, the Company provides a matching contribution of 100% of the first 3% and 50% on the next 2% of eligible pay for a total matching contribution of 4% . Company contributions to the Plan for fiscal years 2019, 2018, and 2017 were \$29.3 million, \$23.6 million, and \$22.4 million, respectively.

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The Plan is 100% participant directed. Plan participants can fully diversify their portfolios by choosing from any or all investment fund choices in the Plan. Transfers in and out of investment funds, including the Paychex, Inc. Employee Stock Ownership Plan Stock Fund, are not restricted, with the exception of certain restricted trading periods for individuals designated as insiders as specified in the Company's Insider Trading Policy. The Company match contribution, when in effect, follows the same fund elections as the employee compensation deferrals.

Deferred compensation plans: The Company and certain subsidiaries offer non-qualified and unfunded deferred compensation plans to a select group of key employees, executive officers, and outside directors. Eligible employees are provided with the opportunity to defer up to 50% of their annual base salary and bonus and outside directors may defer 100% of their Board cash compensation. Gains and losses are credited based on the participant's election of a variety of investment choices. The Company does not match any participant deferral or guarantee its return. Distributions are paid at one of the following dates selected by the participant: the participant's termination date, the date the participant retires from any active employment, or a designated specific date. The amounts accrued under these plans were \$27.0 million and \$18.2 million as of May 31, 2019 and May 31, 2018, respectively, and are reflected in other long-term liabilities on the accompanying Consolidated Balance Sheets.

Note Q — Commitments and Contingencies

Contingencies: The Company is subject to various claims and legal matters that arise in the normal course of its business. These include disputes or potential disputes related to breach of contract, tort, employment-related claims, tax claims, and other matters.

The Company's management currently believes that resolution of outstanding legal matters will not have a material adverse effect on the Company's financial position or results of operations. However, legal matters are subject to inherent uncertainties and there exists the possibility that the ultimate resolution of these matters could have a material adverse impact on the Company's financial position and the results of operations in the period in which any such effect is recorded.

Lease commitments: The Company leases office space and data processing equipment under terms of various operating leases. Rent expense for fiscal years 2019, 2018, and 2017 was \$42.9 million, \$39.9 million, and \$39.7 million, respectively. As of May 31, 2019, future minimum lease payments under various non-cancelable operating leases with terms of more than one year are as follows:

| In millions | Minimum lease payments |
|----------------------------|-------------------------------|
| Year ending May 31, | |
| 2020 | \$ 37.7 |
| 2021 | 29.9 |
| 2022 | 21.3 |
| 2023 | 13.8 |
| 2024 | 10.5 |
| Thereafter | 10.7 |

Other commitments: As of May 31, 2019, the Company had outstanding commitments under purchase orders, legally binding contractual arrangements, and commitments under existing workers' compensation insurance agreements with minimum future payment obligations of approximately \$289.9 million, including \$5.6 million of commitments to purchase capital assets. These minimum future payment obligations relate to the following fiscal years:

| In millions | Minimum payment obligation |
|----------------------------|-----------------------------------|
| Year ending May 31, | |
| 2020 | \$ 176.2 |
| 2021 | 44.8 |
| 2022 | 19.2 |
| 2023 | 11.5 |
| 2024 | 7.4 |
| Thereafter | 30.8 |

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In the normal course of business, the Company makes representations and warranties that guarantee the performance of services under service arrangements with clients. Historically, there have been no material losses related to such guarantees. In addition, the Company has entered into indemnification agreements with its officers and directors, which require the Company to defend and, if necessary, indemnify these individuals for certain pending or future claims as they relate to their services provided to the Company.

Paychex currently self-insures the deductible portion of various insured exposures under certain corporate employee benefit plans. The Company's estimated loss exposure under these insurance arrangements is recorded in other current liabilities on the Consolidated Balance Sheets. Historically, the amounts accrued have not been material and are not material as of the reporting date. The Company also maintains insurance coverage in addition to its purchased primary insurance policies for gap coverage for employment practices liability, errors and omissions, warranty liability, theft and embezzlement, cyber threats, and acts of terrorism; and capacity for deductibles and self-insured retentions through its captive insurance company.

Note R — Related Parties

During the fiscal years 2019, 2018, and 2017, the Company purchased approximately \$2.0 million, \$0.5 million, and \$0.6 million, respectively, of data processing equipment and software from EMC Corporation. The former Chairman, President, and Chief Executive Officer of EMC Corporation is a member of the Company's Board.

During the fiscal years 2019, 2018, and 2017, the Company purchased approximately \$3.1 million, \$2.7 million, and \$2.9 million, respectively, of office supplies from Staples, Inc. The former Vice Chairman of Staples, Inc. is a member of the Company's Board.

During the fiscal year 2019, the Company purchased through negotiated transactions approximately \$1.6 million of computer consulting and advisory services from Cognizant Technology Solutions Corporation. A board member of Cognizant Technology Solutions Corporation is a member of the Company's Board.

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Note S — Quarterly Financial Data (Unaudited)

In millions, except per share amounts

| Fiscal 2019 | Three Months Ended | | | | Full Year |
|---|--------------------|-------------|-------------|----------|------------|
| | August 31 | November 30 | February 28 | May 31 | |
| Service revenue | \$ 845.7 | \$ 840.6 | \$ 1,047.4 | \$ 958.2 | \$ 3,691.9 |
| Interest on funds held for clients | 17.1 | 18.3 | 23.0 | 22.2 | 80.6 |
| Total revenue | \$ 862.8 | \$ 858.9 | \$ 1,070.4 | \$ 980.4 | \$ 3,772.5 |
| Operating income | \$ 320.3 | \$ 307.2 | \$ 429.3 | \$ 314.5 | \$ 1,371.3 |
| Interest income/(expense), net | 2.3 | 2.1 | (3.7) | (4.0) | (3.3) |
| Income before income taxes | 322.6 | 309.3 | 425.6 | 310.5 | 1,368.0 |
| Income taxes | 79.0 | 73.5 | 101.0 | 80.1 | 333.6 |
| Net income | \$ 243.6 | \$ 235.8 | \$ 324.6 | \$ 230.4 | \$ 1,034.4 |
| Basic earnings per share ⁽²⁾ | \$ 0.68 | \$ 0.66 | \$ 0.90 | \$ 0.64 | \$ 2.88 |
| Diluted earnings per share ⁽²⁾ | \$ 0.67 | \$ 0.65 | \$ 0.90 | \$ 0.64 | \$ 2.86 |
| Weighted-average common shares outstanding | 359.1 | 359.1 | 359.2 | 359.4 | 359.2 |
| Weighted-average common shares outstanding, assuming dilution | 361.5 | 361.5 | 361.6 | 362.5 | 361.8 |
| Cash dividends per common share | \$ 0.56 | \$ 0.56 | \$ 0.56 | \$ 0.62 | \$ 2.30 |
| Total net realized gains/(losses) ⁽³⁾ | \$ 0.1 | \$ (0.3) | \$ 0.1 | \$ 0.1 | \$ — |

| Fiscal 2018 | Three Months Ended | | | | Full Year ⁽¹⁾ |
|---|--------------------------|----------------------------|----------------------------|-----------------------|--------------------------|
| | August 31 ⁽¹⁾ | November 30 ⁽¹⁾ | February 28 ⁽¹⁾ | May 31 ⁽¹⁾ | |
| Service revenue | \$ 779.2 | \$ 789.0 | \$ 918.0 | \$ 828.0 | \$ 3,314.2 |
| Interest on funds held for clients | 13.7 | 14.0 | 18.1 | 17.7 | 63.5 |
| Total revenue | \$ 792.9 | \$ 803.0 | \$ 936.1 | \$ 845.7 | \$ 3,377.7 |
| Operating income | \$ 317.3 | \$ 303.1 | \$ 369.0 | \$ 302.1 | \$ 1,291.5 |
| Interest income, net | 2.1 | 1.7 | 2.3 | 2.5 | 8.6 |
| Income before income taxes | 319.4 | 304.8 | 371.3 | 304.6 | 1,300.1 |
| Income taxes ⁽⁴⁾ | 109.0 | 106.0 | 4.1 | 86.9 | 306.0 |
| Net income | \$ 210.4 | \$ 198.8 | \$ 367.2 | \$ 217.7 | \$ 994.1 |
| Basic earnings per share ⁽²⁾ | \$ 0.59 | \$ 0.55 | \$ 1.02 | \$ 0.61 | \$ 2.77 |
| Diluted earnings per share ⁽²⁾ | \$ 0.58 | \$ 0.55 | \$ 1.01 | \$ 0.60 | \$ 2.75 |
| Weighted-average common shares outstanding | 358.9 | 359.1 | 359.2 | 359.0 | 359.0 |
| Weighted-average common shares outstanding, assuming dilution | 361.3 | 361.4 | 362.0 | 361.5 | 361.5 |
| Cash dividends per common share | \$ 0.50 | \$ 0.50 | \$ 0.50 | \$ 0.56 | \$ 2.06 |
| Total net realized gains ⁽³⁾ | \$ — | \$ — | \$ 0.1 | \$ — | \$ 0.1 |

(1) Amounts have been adjusted to reflect the adoption of ASC Topic 606.

(2) Each quarter is a discrete period and the sum of the four quarters' basic and diluted earnings per share amounts may not equal the full year amount.

(3) Total net realized gains/(losses) on the combined funds held for clients and corporate investment portfolios.

(4) As a result of the Tax Act, the effective income tax rate for the three months ended February 28, 2018 was significantly impacted by certain one-time net tax benefits. Refer to Note K of this Item 8 for further details .

Schedule II — Valuation and Qualifying Accounts

PAYCHEX, INC.
CONSOLIDATED FINANCIAL STATEMENT SCHEDULE
FOR THE YEAR ENDED MAY 31,
(In millions)

| Description | Balance as of beginning of fiscal year | Additions charged to expenses | Additions to/ (deductions from) other accounts ⁽¹⁾ | Costs and deductions ⁽²⁾ | Balance as of end of fiscal year |
|---------------------------------|--|-------------------------------------|--|--|--|
| 2019 | | | | | |
| Allowance for doubtful accounts | \$ 7.0 | \$ 3.3 | \$ 0.7 | \$ 3.5 | \$ 7.5 |
| Reserve for client fund losses | \$ 2.4 | \$ 3.7 | \$ — | \$ 3.4 | \$ 2.7 |
| 2018 | | | | | |
| Allowance for doubtful accounts | \$ 6.0 | \$ 3.6 | \$ — | \$ 2.6 | \$ 7.0 |
| Reserve for client fund losses | \$ 3.0 | \$ 3.1 | \$ — | \$ 3.7 | \$ 2.4 |
| 2017 | | | | | |
| Allowance for doubtful accounts | \$ 4.2 | \$ 4.9 | \$ — | \$ 3.1 | \$ 6.0 |
| Reserve for client fund losses | \$ 2.0 | \$ 4.1 | \$ — | \$ 3.1 | \$ 3.0 |

- (1) Amounts related to business acquisitions.
(2) Uncollectible amounts written off, net of recoveries.

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

None.

Item 9A. Controls and Procedures

Disclosure Controls and Procedures: Disclosure controls and procedures are designed with the objective of ensuring that information required to be disclosed in the Company's reports filed under the Exchange Act, such as this report, is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures are also designed with the objective of ensuring that such information is accumulated and communicated to the Company's management, including the Company's principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

The scope of management's assessment of the effectiveness of the design and operation of the Company's disclosure controls and procedures as of May 31, 2019 includes all of the Company's consolidated operations except for those disclosure controls and procedures of Oasis that are subsumed by internal control over financial reporting.

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures: As of the end of the period covered by this report, the Company carried out an evaluation, under the supervision and with the participation of the Company's principal executive officer and principal financial officer, of the effectiveness of disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act. Based on such evaluation, the Company's principal executive officer and principal financial officer have concluded that as of May 31, 2019, the end of the period covered by this report, the Company's disclosure controls and procedures were effective.

Changes in Internal Control Over Financial Reporting: The Company also carried out an evaluation of the internal control over financial reporting to determine whether any changes occurred during the fiscal quarter ended May 31, 2019. In connection with the Company's adoption of ASC Topic 606 the Company has updated its control framework effective June 1, 2018 for certain new internal controls and changes to certain existing controls, including reconciliation controls, management review controls, and contract review controls. Other than these changes, there have been no changes in the Company's internal control over financial reporting that occurred during the Company's most recently completed fiscal quarter ended May 31, 2019, that materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

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Internal Control Over Financial Reporting: The Report on Management's Assessment of Internal Control Over Financial Reporting and the Report of Independent Registered Public Accounting Firm are included in Part II, Item 8 of this Form 10-K.

The Company is in the process of evaluating the existing controls and procedures of Oasis and integrating Oasis into its internal control over financial reporting. In accordance with SEC Staff guidance permitting a company to exclude an acquired business from management's assessment of the effectiveness of internal control over financial reporting for the year in which the acquisition is completed, we have excluded Oasis from the Company's assessment of the effectiveness of internal control over financial reporting as of May 31, 2019. Oasis represented 8 % of the Company's total assets as of May 31, 2019 and 4% of the Company's revenues for the fiscal year ended May 31, 2019.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The following table shows the executive officers of the Company as of May 31, 2019, and information regarding their positions and business experience. Such executive officers hold principal policy-making powers at the Company.

| Name | Age | Position and business experience |
|------------------|------------|--|
| Martin Mucci | 59 | Mr. Mucci has served as President and Chief Executive Officer of the Company since September 2010. Mr. Mucci joined the Company in 2002 as Senior Vice President, Operations. Prior to joining Paychex, he held senior level positions with Frontier Communications of Rochester, a telecommunications company, including President of Telephone Operations and Chief Executive Officer of Frontier Telephone of Rochester, during his 20-year career. Mr. Mucci was a director of Cbeyond, Inc. until it was purchased by Birch Communications in July 2014. He is a member of the Upstate New York Regional Advisory Board of the Federal Reserve Bank of New York and is a Trustee Emeritus of St. John Fisher College. He also serves as a director of the Company and is chairman of the Executive Committee. |
| Efrain Rivera | 62 | Mr. Rivera joined Paychex in June 2011 as Senior Vice President, Chief Financial Officer, and Treasurer. Prior to joining the Company, Mr. Rivera served as Vice President of Finance and Administration for Houghton College from 2009 to 2011. He previously served for over twenty years with Bausch & Lomb Incorporated, a world leader in the development, manufacture, and marketing of eye health products, most recently as Corporate Vice President and Chief Financial Officer from 2007 to 2009. |
| Mark A. Bottini | 58 | Mr. Bottini joined Paychex in October 2011 as Senior Vice President of Sales. From 2008 to 2011, Mr. Bottini served as Vice President of Sales for Ricoh, North America, a provider of advanced office technology and innovative document imaging products, services, and software. He assumed his most recent position with Ricoh when Ricoh acquired IKON Office Solutions, Inc. During his nearly 20 years with IKON, Mr. Bottini served in a variety of sales leadership and field management roles. |
| John B. Gibson | 53 | Mr. Gibson joined Paychex in May 2013 as Senior Vice President of Service. Prior to joining the Company, Mr. Gibson served as President and Chief Executive Officer for AlphaStaff, a national provider of human resource outsourcing services to small- and medium-sized businesses. Prior to joining AlphaStaff in 2010, Mr. Gibson was President of the HR Management Division of Convergys, a global leader in technology, outsourcing, and business services. From 2004 to 2007, he served as Senior Vice President of Global Operations and Client Services of Convergys. |
| Michael E. Gioja | 61 | Mr. Gioja was named Senior Vice President of Information Technology and Product Development in July 2011. Mr. Gioja has been with the Company since November 2008 and previously served as Senior Vice President of Information, Technology, Product Management, and Development and Vice President of Product Management. Previously, he was Chief Information Officer and Executive Vice President of Products and Services for Workstream, Inc., a provider of on-demand enterprise talent management solutions and services. |

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| <u>Name</u> | <u>Age</u> | <u>Position and business experience</u> |
|---------------------------------|------------|---|
| Stephanie L. Schaeffer | 49 | Ms. Schaeffer was named Vice President and Chief Legal Officer in January 2006. In 2011, she was appointed Corporate Secretary. She joined Paychex in 2000 as Corporate Counsel and was promoted to Director of Legal Affairs in 2004. In her current role, she is responsible for overseeing all of the Company's legal functions, including litigation, corporate governance, and regulatory matters. |
| Jennifer Vossler ⁽¹⁾ | 56 | Ms. Vossler joined the Company in May 2009 as Vice President and Controller. Prior to joining the Company, she served as Vice President and Corporate Controller, and held various executive and senior management positions during her eleven years at Bausch & Lomb Incorporated. Previously in her career, she held leadership roles with a global facilities management outsourcing company and a public accounting firm. |
| Laurie L. Zaucha | 54 | Ms. Zaucha joined the Company in March 2011 and was named Vice President of Human Resources and Organizational Development. Prior to joining the Company, she served as Senior Vice President of Human Resources for Paetec Holding Corp., a Fortune 1000 telecommunications company, from 2007 to 2011. From 2003 to 2007, she held various executive positions at Bausch & Lomb Incorporated. |

- (1) On July 10, 2019, the Board appointed Ms. Vossler to Vice President and Assistant Treasurer, effective as of the same date. The Board also appointed Robert L. Schrader to Vice President and Controller, effective as of July 10, 2019.

The additional information required by this item is set forth in the Company's Definitive Proxy Statement for its 2019 Annual Meeting of Stockholders, anticipated to be held on or about October 17, 2019, in the sections "PROPOSAL 1: ELECTION OF DIRECTORS FOR A ONE-YEAR TERM," "DELINQUENT SECTION 16(a) REPORTS," "CORPORATE GOVERNANCE," and "CODE OF BUSINESS ETHICS AND CONDUCT" and is incorporated herein by reference.

Item 11. *Executive Compensation*

The information required by this item is set forth in the Company's Definitive Proxy Statement for its 2019 Annual Meeting of Stockholders, anticipated to be held on or about October 17, 2019, in the sections "COMPENSATION DISCUSSION AND ANALYSIS," "NAMED EXECUTIVE OFFICER COMPENSATION," "DIRECTOR COMPENSATION FOR THE FISCAL YEAR ENDED May 31, 2019," "THE GOVERNANCE AND COMPENSATION COMMITTEE REPORT" and the sub-heading "Governance and Compensation Committee Interlocks and Insider Participation" within the section "CORPORATE GOVERNANCE" and is incorporated herein by reference.

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

The information required by this item is set forth below and in the Company's Definitive Proxy Statement for its 2019 Annual Meeting of Stockholders, anticipated to be held on or about October 17, 2019, under the section "BENEFICIAL OWNERSHIP OF PAYCHEX COMMON STOCK," and is incorporated herein by reference.

The Company maintains equity compensation plans in the form of stock incentive plans. Under the Paychex, Inc. 2002 Stock Incentive Plan, as amended and restated effective October 14, 2015 (the "2002 Plan"), non-qualified or incentive stock options, restricted stock, restricted stock units, performance shares, and performance stock options have been awarded to employees and the Board. The 2002 Plan was adopted on July 9, 2015 by the Board and became effective upon stockholder approval at the Company's Annual Meeting of Stockholders held on October 14, 2015. Refer to Note F of the Notes to Consolidated Financial Statements, contained in Item 8 of this Form 10-K, for more information on the Company's stock incentive plans.

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The following table details information on securities authorized for issuance under the Company's stock option incentive plans as of May 31, 2019 :

| <u>In millions, except per share amounts</u> | <u>Number of securities to be issued upon exercise of outstanding options</u> | <u>Weighted-average exercise price of outstanding options</u> | <u>Number of securities remaining available for future issuance under equity compensation plans</u> |
|---|---|---|---|
| Equity compensation plans approved by security holders ⁽¹⁾ | 6.2 | \$ 49.80 | 18.2 |

(1) Amounts include performance stock options granted, assuming achievement of performance goals at target. Actual amount of shares to be earned may differ from the target amount.

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

The information required by this item is set forth in the Company's Definitive Proxy Statement for its 2019 Annual Meeting of Stockholders, anticipated to be held on or about October 17, 2019 , under the sub-headings "Board Meetings and Committees" and "Policy on Transactions with Related Persons" within the section "CORPORATE GOVERNANCE," and is incorporated herein by reference.

Item 14. *Principal Accounting Fees and Services*

The information required by this item is set forth in the Company's Definitive Proxy Statement for its 2019 Annual Meeting of Stockholders, anticipated to be held on or about October 17, 2019 , under the section "PROPOSAL 3: RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM," and is incorporated herein by reference.

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Item 15. *Exhibits and Financial Statement Schedules*

- (a) Financial Statements, Financial Statement Schedules, and Exhibits
1. Financial Statements

See Financial Statements and Supplementary Data Table of Contents at page 36.

2. Financial Statement Schedules

Financial statement schedules required to be filed by Item 8 of this Form 10-K include Schedule II — Valuation and Qualifying Accounts. See Financial Statements and Supplementary Data Table of Contents at page 36. All other schedules are omitted as the required matter is not present, the amounts are not significant, or the information is shown in the financial statements or the notes thereto.

3. Exhibits

- (2.1) Stock Purchase Agreement by and among Oasis Outsourcing Acquisition Corporation, Oasis Outsourcing Group Holdings, L.P. and Paychex North America Inc., incorporated herein by reference from Exhibit 2.1 to the Company's Form 10-Q filed with the Commission on December 21, 2018.
- (3)(a) Restated Certificate of Incorporation, incorporated herein by reference from Exhibit 3(a) to the Company's Form 10-K filed with the Commission on July 20, 2004.
- (3.1) Amended and Restated By-Laws of Paychex, Inc., as of May 3, 2019, incorporated herein by reference from Exhibit 3.1 to the Company's Form 8-K filed with the Commission on May 7, 2019.
- (4.1) Form of 4.07% Senior Notes, Series A, of Paychex of New York LLC, due March 13, 2026, incorporated herein by reference from Exhibit 4.1 to the Company's Form 8-K filed with the Commission on January 11, 2019.
- (4.2) Form of 4.25% Senior Notes, Series B, of Paychex of New York LLC, due March 13, 2029, incorporated herein by reference from Exhibit 4.2 to the Company's Form 8-K filed with the Commission on January 11, 2019.
- * (4.3) Description of Registrant's Securities.
- # (10.1) Paychex, Inc. 2015 Qualified Employee Stock Purchase Plan, incorporated herein by reference from Exhibit 4.3 to the Company's Registration Statement on Form S-8, No. 333-207594.
- # (10.2) Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 14, 2015), incorporated herein by reference from Exhibit 4.3 to the Company's Registration Statement on Form S-8, No. 333-207592.
- # (10.3) Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 12, 2005) Form of Non-Qualified Stock Option Award Agreement, incorporated herein by reference from Exhibit 10.2 to the Company's Form 8-K filed with the Commission on July 16, 2008.
- # (10.4) Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 12, 2005) Form of Restricted Stock Unit Award Agreement, incorporated herein by reference from Exhibit 10(n) to the Company's Form 10-K filed with the Commission on July 18, 2008.
- # (10.5) Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 12, 2005) Form of Non-Qualified Stock Option Award Agreement for Directors, incorporated herein by reference from Exhibit 10(q) to the Company's Form 10-K filed with the Commission on July 18, 2008.
- # (10.6) Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 12, 2005) Form of Restricted Stock Award Agreement (Officer), incorporated herein by reference from Exhibit 10.18 to the Company's Form 10-K filed with the Commission on July 16, 2010.
- # (10.7) Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 12, 2005) Form of Non-Qualified Stock Option Award Agreement (Officer), incorporated herein by reference from Exhibit 10.19 to the Company's Form 10-K filed with the Commission on July 16, 2010.
- # (10.8) Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 12, 2005) Form of Officer Performance Incentive Award Agreement (Long Term), incorporated herein by reference from Exhibit 10.20 to the Company's Form 10-K filed with the Commission on July 16, 2010.

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| | | |
|---|---------|---|
| # | (10.9) | <u>Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 13, 2010) Form of Non-Qualified Stock Option Award Agreement (Board), incorporated herein by reference from Exhibit 10.20 to the Company's Form 10-K filed with the Commission on July 15, 2011.</u> |
| # | (10.10) | <u>Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 13, 2010) Form of Restricted Stock Award Agreement (Board), incorporated herein by reference from Exhibit 10.21 to the Company's Form 10-K filed with the Commission on July 15, 2011.</u> |
| # | (10.11) | <u>Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 13, 2010) Form of Non-Qualified Stock Option Award Agreement (Officer) Long Term Incentive Program ("LTIP"), incorporated herein by reference from Exhibit 10.23 to the Company's Form 10-K filed with the Commission on July 15, 2011.</u> |
| # | (10.12) | <u>Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 14, 2015) Form of Non-Qualified Stock Option and Restricted Stock Award Agreement LTIP, incorporated herein by reference from Exhibit 10.14 to the Company's Form 10-K filed with the Commission on July 22, 2016.</u> |
| # | (10.13) | <u>Paychex, Inc. Change In Control Plan, incorporated herein by reference from Exhibit 10.24 to the Company's Form 10-K filed with the Commission on July 15, 2011.</u> |
| # | (10.14) | <u>Paychex, Inc. Form of Performance Award Incentive Program, incorporated herein by reference from Exhibit 10.25 to the Company's Form 10-K filed with the Commission on July 15, 2011.</u> |
| | (10.15) | <u>Form of Indemnity Agreement for Directors and Officers, incorporated herein by reference from Exhibit 10.1 to the Company's Form 10-Q filed with the Commission on March 28, 2012.</u> |
| # | (10.16) | <u>Paychex, Inc. Board Deferred Compensation Plan, incorporated herein by reference from Exhibit 10.29 to the Company's Form 10-K filed with the Commission on July 20, 2009.</u> |
| # | (10.17) | <u>Paychex, Inc. Employee Deferred Compensation Plan, incorporated herein by reference from Exhibit 10.30 to the Company's Form 10-K filed with the Commission on July 20, 2009.</u> |
| # | (10.18) | <u>Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated October 14, 2015) Form of Non-Qualified Stock Option Award Agreement, incorporated herein by reference from Exhibit 10.18 to the Company's Form 10-K filed with the Commission on July 21, 2017.</u> |
| # | (10.19) | <u>Paychex Inc. 2002 Stock Incentive Plan (as amended and restated October 14, 2015) Form of Officer Performance Incentive Award Agreement (Long-Term), incorporated herein by reference from Exhibit 10.19 to the Company's Form 10-K filed with the Commission on July 21, 2017.</u> |
| # | (10.20) | <u>Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 14, 2015) Performance-Based Restricted Stock Award Agreement, incorporated herein by reference from Exhibit 10.1 to the Company's Form 8-K filed with the Commission on September 8, 2017.</u> |
| # | (10.21) | <u>Paychex, Inc. 2002 Stock Incentive Plan (as amended and restated effective October 14, 2015) Amendment to Award Agreements, incorporated herein by reference from Exhibit 10.2 to the Company's Form 8-K filed with the Commission on September 8, 2017.</u> |
| | (10.22) | <u>Note Purchase and Guarantee Agreement, dated as of January 9, 2019, by and among the Company, the Parent, and the respective purchasers thereto, incorporated herein by reference from Exhibit 10.1 to the Company's Form 8-K filed with the Commission on January 11, 2019.</u> |
| * | (21.1) | <u>Subsidiaries of the Registrant.</u> |
| * | (23.1) | <u>Consent of Independent Registered Public Accounting Firm, PricewaterhouseCoopers LLP.</u> |
| * | (24.1) | <u>Power of Attorney.</u> |
| * | (31.1) | <u>Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</u> |
| * | (31.2) | <u>Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</u> |
| * | (32.1) | <u>Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u> |
| * | (32.2) | <u>Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u> |
| * | 101.INS | XBRL instance document. |
| * | 101.SCH | XBRL taxonomy extension schema document. |
| * | 101.CAL | XBRL taxonomy extension calculation linkbase document. |
| * | 101.LAB | XBRL taxonomy label linkbase document. |
| * | 101.PRE | XBRL taxonomy extension presentation linkbase document. |

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- * 101.DEF XBRL taxonomy extension definition linkbase document.
- * Exhibit filed with this report.
- # Management contract or compensatory plan.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on July 24, 2019.

PAYCHEX, INC.

By: /s/ Martin Mucci
Martin Mucci
President and Chief Executive Officer

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 indicated on July 24, 2019.

/s/ Martin Mucci
Martin Mucci, President and
Chief Executive Officer, and Director
(Principal Executive Officer)

/s/ Efrain Rivera
Efrain Rivera, Senior Vice President, Chief Financial Officer, and Treasurer
(Principal Financial Officer)

/s/ Robert L. Schrader
Robert L. Schrader, Vice President and Controller
(Principal Accounting Officer)

B. Thomas Golisano*, Chairman of the Board
Thomas F. Bonadio*, Director
Joseph G. Doody*, Director
David J.S. Flaschen*, Director
Pamela A. Joseph*, Director
Joseph M. Tucci*, Director
Joseph Velli*, Director
Kara Wilson*, Director

*By: /s/ Martin Mucci
Martin Mucci, as Attorney-in-Fact

DESCRIPTION OF SECURITIES

The following is a brief description of the common stock, par value \$0.01 per share (the “common stock”), of Paychex, Inc. (the “Company”), which is the only security of the Company registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended. This description is not complete, and we qualify it by referring to our amended and restated certificate of incorporation (“Certificate of Incorporation”) and our amended and restated bylaws (“Bylaws”).

Description of our Common Stock

General

Our Certificate of Incorporation authorizes us to issue 600,000,000 shares of common stock. Our common stock is listed on the Nasdaq Global Select Market under the symbol “PAYX.”

Voting Rights

Our common stock has one vote per share. The holders of our common stock are entitled to vote on all matters to be voted on by stockholders. The holders of our common stock do not have cumulative voting rights. Holders of common stock have no preemptive, subscription, redemption, sinking fund, or conversion rights.

Dividend Rights

The holders of common stock are entitled to receive dividends when, as and if declared by the board of directors out of funds legally available therefor. Dividends may be paid in cash, in property or in shares of stock of the Company.

Liquidation Rights

In the event of our liquidation, dissolution or winding up, the holders of common stock are entitled to share equally and ratably in all assets remaining available for distribution after payment of liabilities.

Anti-Takeover Provisions

General

Our Certificate of Incorporation and Bylaws contain certain provisions that may be deemed to have an anti-takeover effect and may delay, deter or prevent a tender offer or take-over attempt that a stockholder might consider in its best interest, including those attempts that might result in a premium over the market price for the shares held by stockholders.

Advance Notice Bylaws

Our Bylaws provide that any stockholder who wishes to bring business before a meeting of our stockholders, or to nominate candidates for election as directors at a meeting of our stockholders, must deliver advance notice of their proposals to us before the meeting.

Amendment of Bylaws

Our Certificate of Incorporation and Bylaws grant our board of directors the power to adopt, amend or repeal the Bylaws.

SUBSIDIARIES OF THE REGISTRANT

SUBSIDIARIES OF PAYCHEX, INC. AS OF MAY 31, 2019

| <u>Name of Subsidiaries</u> | <u>Jurisdiction of Incorporation</u> |
|---|--------------------------------------|
| CSM, Inc. | Tennessee |
| DHR Insurance Services, LLC | Delaware |
| DHR Services Holdings, LLC | Delaware |
| Employer Solutions Group, Inc. | Utah |
| Employers Insurance Group LLC | New Mexico |
| ESG Consulting II, LLC | Utah |
| ESG PEO, Inc. | Utah |
| Fortune Industries Inc. | Delaware |
| Gordian Capital Holdings, Inc. | Delaware |
| Oasis Acquisition, Inc. | Delaware |
| Oasis AHR II, Inc. | Iowa |
| Oasis AHR PL, LLC | Colorado |
| Oasis DHR, LLC | Delaware |
| Oasis Outsourcing Acquisition Corporation | Delaware |
| Oasis Outsourcing Contract III, Inc. | Florida |
| Oasis Outsourcing Holdings, LLC | Delaware |
| Oasis Outsourcing TX, Inc. | Florida |
| Oasis Outsourcing V, Inc. | Florida |
| Oasis Outsourcing, Inc. | Florida |
| Paychex Holdings, LLC | New York |
| Paychex Investment LLC | Delaware |
| Paychex Management LLC | Delaware |
| Paychex North America Inc. | Delaware |
| Paychex of New York LLC | Delaware |
| PXC, Inc. | New York |
| WRI Acquisition, LLC | Delaware |

Certain subsidiaries, which considered in the aggregate as a single subsidiary, would not constitute a significant subsidiary, per Regulation S-X, Article 1, as of May 31, 2019, have been omitted from this exhibit.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-84055, 333-207592, and 333-207594) and Form S-3ASR (No. 333-220996) of Paychex, Inc. of our report dated July 24 , 2019 relating to the financial statements and financial statement schedule, and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Rochester, New York
July 24 , 201 9

POWER OF ATTORNEY

The undersigned Directors of Paychex, Inc., do hereby constitute and appoint Martin Mucci their true and lawful attorney and agent, to execute the Paychex, Inc., Annual Report on Form 10-K for the fiscal year ended May 31, 2019, for us and in our names as Directors, to comply with the Securities Exchange Act of 1934, as amended, and the rules, regulations and requirements of the Securities and Exchange Commission in connection therewith.

| | | |
|--------|---------------|---|
| Dated: | July 11, 2019 | <u>/s/ B. Thomas Golisano</u> B. Thomas Golisano |
| Dated: | July 11, 2019 | <u>/s/ Thomas F. Bonadio</u> Thomas F. Bonadio |
| Dated: | July 11, 2019 | <u>/s/ Joseph G. Doody</u> Joseph G. Doody |
| Dated: | July 11, 2019 | <u>/s/ David J. S. Flaschen</u> David J. S. Flaschen |
| Dated: | July 11, 2019 | <u>/s/ Pamela A. Joseph</u> Pamela A. Joseph |
| Dated: | July 11, 2019 | <u>/s/ Joseph M. Tucci</u> Joseph M. Tucci |
| Dated: | July 11, 2019 | <u>/s/ Joseph M. Velli</u> Joseph M. Velli |
| Dated: | July 11, 2019 | <u>/s/ Kara Wilson</u> Kara Wilson |

**CERTIFICATION PURSUANT TO
SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, MARTIN MUCCI, certify that:

1. I have reviewed this Annual Report on Form 10-K of Paychex, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 24, 2019

/s/ Martin Mucci

President and Chief Executive Officer

**CERTIFICATION PURSUANT TO
SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, EFRAIN RIVERA , certify that:

1. I have reviewed this Annual Report on Form 10-K of Paychex, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 24 , 201 9

/s/ Efrain Rivera

Senior Vice President, Chief Financial Officer, and Treasurer

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

In connection with the Annual Report of Paychex, Inc. (the "Company") on Form 10-K for the fiscal year ended May 31, 2019 as filed with the Securities and Exchange Commission ("SEC") on the date hereof (the "Report"), I, MARTIN MUCCI, Chief Executive Officer (principal executive officer) of the Company, certify, pursuant to 18 U.S.C. section 1350, as adopted pursuant to section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

A signed original of this written statement has been provided to the Company and will be retained by the Company and furnished to the SEC upon request.

Date: July 24, 2019

/s/ Martin Mucci

Martin Mucci

President and Chief Executive Officer

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

In connection with the Annual Report of Paychex, Inc. (the "Company") on Form 10-K for the fiscal year ended May 31, 2019 as filed with the Securities and Exchange Commission ("SEC") on the date hereof (the "Report"), I, EFRAIN RIVERA, Chief Financial Officer (principal financial officer) of the Company, certify, pursuant to 18 U.S.C. section 1350, as adopted pursuant to section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

A signed original of this written statement has been provided to the Company and will be retained by the Company and furnished to the SEC upon request.

Date: July 24, 2019

/s/ Efrain Rivera

Efrain Rivera

Senior Vice President, Chief Financial Officer, and
Treasurer
