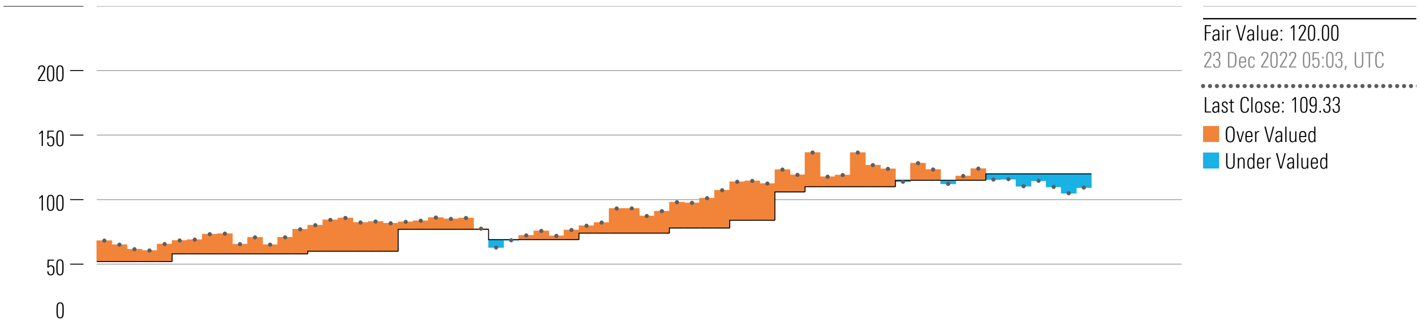
Morningstar Equity Analyst Report | Report as of 30 Jun 2023 00:39, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NASDAQ - ALL MARKETS

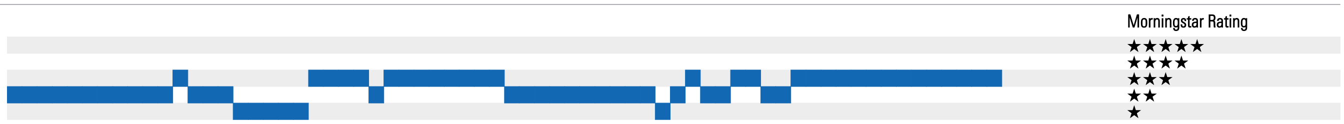
Paychex Inc PAYX ★★★ 29 Jun 2023 21:16, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
109.33 USD 29 Jun 2023	120.00 USD 23 Dec 2022 05:03, UTC	0.91	39.94 USD Bil 28 Jun 2023	Wide	Positive	High	Exemplary	7 Jun 2023 05:00, UTC

Price vs. Fair Value



	2018	2019	2020	2021	2022	YTD	
	1.12	1.10	1.26	1.24	0.96	0.91	Price/Fair Value
	-1.10	34.27	12.46	49.28	-13.12	-3.94	Total Return %



Total Return % as of 29 Jun 2023. Last Close as of 29 Jun 2023. Fair Value as of 23 Dec 2022 05:03, UTC.

Contents

[1] The ESG Risk Rating Assessment is a representation of Sustainalytics' ESG Risk Rating.

Paychex Earnings: Regulatory Tailwinds Offset Moderating Employment Growth and Higher Attrition

Analyst Note Emma Williams, Equity Analyst, 30 Jun 2023

Amid uncertain economic conditions, wide-moat Paychex reported sound fourth-quarter and fiscal 2023 results, with both top line growth and profitability broadly in line with our expectations. Following the result, we maintain our longer-term forecasts and $120 fair value estimate. At current prices, Paychex shares are fairly valued, in our view.

Revenue in the fourth quarter increased a healthy 7% year over year, and 9% year over year for fiscal year 2023. The result was underpinned by strong demand for retirement solutions fueled by regulatory tailwinds and ongoing uptake of employee retention tax credit services, partly offset by moderating employment growth and weak insurance attachment. As anticipated, client retention has retracted to prepandemic levels as small business failures normalize. However, on the bright side, Paychex reported improving revenue retention underpinned by like for like price increases and greater module adoption.

Despite economic headwinds, Paychex achieved improved profitability year over year on greater contribution from ultra-high margin interest income, improved operating leverage on a larger client base and greater digitization of sales and service. Fiscal 2023 year-on-year operating margins improved by 70 basis points to 41.6%, about 10 basis points below our forecast.

For fiscal 2024, we forecast revenue growth of 6%, and operating margin expansion of 60 basis points to

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Sector
Industrials

Industry
Staffing & Employment Services

Business Description

Paychex is a leading provider of payroll, human capital management, and insurance solutions servicing small and midsize clients primarily in the United States. The company, established in 1979, services over 730,000 clients and pays over 1 in 12 U.S. private-sector workers. Alongside its traditional payroll services, Paychex offers HCM solutions such as benefits administration and time and attendance software, as well as human resources outsourcing and insurance agency services.

about 42% year over year, both in line with management's guidance. Our forecasts assume ongoing demand for retirement solutions and employee retention tax credit services, as well as a recovery in insurance attachment following an expansion of the product suite, and further interest income upside. However, we expect this will be partly offset by a slowing of hiring activity for the remainder of calendar 2023 as higher interest rates weigh on economic activity before a recovery in 2024 as tight monetary policy unwinds.

Business Strategy & Outlook Emma Williams, Equity Analyst, 30 Jun 2023

Paychex's offering appeals to businesses wishing to outsource mission-critical functions, manage and attract employees, and remain compliant with increasingly complex and evolving regulations. We expect increased regulatory complexity, tight labor markets, and a growing adoption of hybrid work will underpin strong demand for Paychex's suite of offerings supporting greater share of wallet and market share gains. This includes greater penetration of the outsourced payroll and human resources model in the small-business market. While we factor in market share gains, we expect increasing competition to limit Paychex's pricing power and force the company to maintain elevated expenditure on software development and innovation to remain competitive.

Paychex's solutions span from do-it-yourself payroll with add-on human capital management modules to full-service HR outsourcing via an administrative services organization or professional employer organization model. The ASO and PEO solutions allow a business to outsource critical HR functions to Paychex, including payroll, compliance, and benefits administration, and access support from onsite HR professionals. The main difference between the two models is that under a PEO, Paychex enters a co-employment arrangement and acts as the employer of record for tax and insurance purposes. Clients can benefit from Paychex's scale to secure competitively priced benefits, allowing them to attract and retain talent and minimize expenses. Paychex also operates an insurance agency business and offers stand-alone solutions such as retirement services administration. Paychex differentiates itself from software-only solutions through its 24/7 customer service support, allowing clients to source advice on HR and compliance matters.

We expect Paychex to continue to diversify its revenue streams away from payroll through increased focus on HR solutions, including outsourcing and insurance. By fiscal 2033, we expect payroll revenue will contribute about 36% of total revenue from an estimated 41% in 2023. The remainder of revenue will be evenly split among the PEO and insurance business and HCM solutions, including through the ASO.

Bulls Say Emma Williams, Equity Analyst, 30 Jun 2023

- Paychex is well placed to benefit from increased regulatory complexity under a U.S. Democratic administration.

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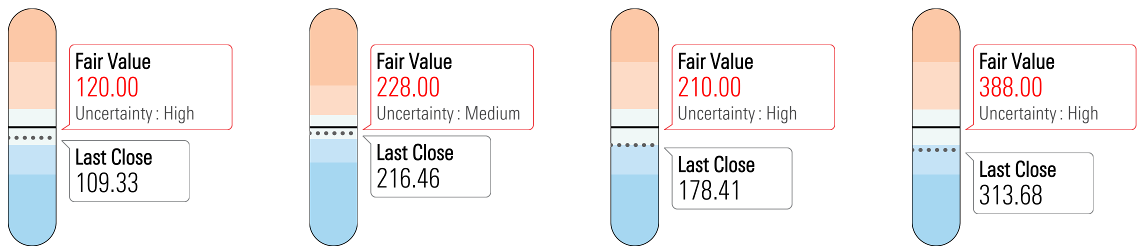
Competitors

Paychex Inc PAYX | Automatic Data Processing Inc ADP | Paylocity Holding Corp PCTY | Paycom Software Inc PAYC



	Paychex Inc PAYX	Automatic Data Processing Inc ADP	Paylocity Holding Corp PCTY	Paycom Software Inc PAYC
Economic Moat	Wide	Wide	Narrow	Narrow
Moat Trend	Positive	Negative	Stable	Stable
Currency	USD	USD	USD	USD
Fair Value	120.00 23 Dec 2022 05:03, UTC	228.00 28 Apr 2022 04:39, UTC	210.00 3 Feb 2023 22:19, UTC	388.00 9 Feb 2022 22:04, UTC
1-Star Price	186.00	307.80	325.50	601.40
5-Star Price	72.00	159.60	126.00	232.80
Assessment	Fairly Valued 28 Jun 2023	Fairly Valued 28 Jun 2023	Fairly Valued 28 Jun 2023	Under Valued 28 Jun 2023
Morningstar Rating	★★★29 Jun 2023 21:16, UTC	★★★29 Jun 2023 21:16, UTC	★★★29 Jun 2023 21:16, UTC	★★★★29 Jun 2023 21:16, UTC
Analyst	Emma Williams, Equity Analyst	Emma Williams, Equity Analyst	Emma Williams, Equity Analyst	Emma Williams, Equity Analyst
Capital Allocation	Exemplary	Standard	Exemplary	Exemplary
Price/Fair Value	0.91	0.95	0.85	0.81
Price/Sales	8.16	5.30	9.25	12.32
Price/Book	11.74	24.12	13.01	13.54
Price/Earning	26.70	27.57	85.34	58.69
Dividend Yield	2.94%	2.22%	—	0.12%
Market Cap	39.94 Bil	89.08 Bil	10.00 Bil	18.17 Bil
52-Week Range	104.09—139.47	201.46—274.92	160.00—276.88	262.12—402.78
Investment Style	Mid Core	Large Core	Mid Growth	Mid Growth

- Paychex benefits from high customer switching costs, a scale-based cost advantage, and strong brand assets and a referral network built over many decades.
- Paychex dominates the small-business outsourced payroll market with strong prospects of further market penetration.

Bears Say Emma Williams, Equity Analyst, 30 Jun 2023

- Paychex faces increasing competitive pressure from nimble upstarts, legacy peers, and accounting software providers encroaching on the full-service market. This dynamic will likely lead to greater pricing pressure for Paychex and continued elevated investment in software development.
- Payroll and HCM software is becoming increasingly commoditized, and newer operators will look to gradually develop their own record of performance.
- Paychex is highly exposed to swings in economic conditions and labor markets.

Economic Moat Emma Williams, Equity Analyst, 29 Jun 2023

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Paychex has a wide economic moat underpinned by high customer switching costs. It also benefits from intangible assets, including its brand strength accumulated over several decades, an extensive referral network, and cost advantages due to economies of scale. Despite facing intense competitive pressure from legacy peers, nimble cloud native upstarts, and accounting software providers, Paychex has improved retention and achieved steady underlying operating margin expansion over the past decade. While we expect returns on invested capital to continue to come under pressure due to consistent investment in software development and pricing pressure, we are comfortable that Paychex will be able to earn maintainable economic profits for at least the next 20 years.

Paychex dominates the small-business outsourced payroll processing market, servicing over 740,000 clients primarily in the United States. We estimate 95% of these clients are in the highly fragmented 1- to 49-employee small-business market, representing an estimated 11% market share. Approximately 65% of this market is serviced by regional providers or do-it-yourself software-only solutions such as Intuit's QuickBooks or Microsoft Excel, creating meaningful scope for greater penetration of Paychex's value-added offering. As of fiscal 2021, Paychex's average client's number of employees was in the midteens and we estimate at least 80% of clients employ fewer than 20 people. Paychex also services the lower end of the midmarket categorized by 50-999 employees, with an estimated 15% market share in fiscal 2023.

As with payroll and HCM peers, Paychex benefits from high customer switching costs. Payroll and HCM software is typically deeply embedded in a business' operations, making it a costly and time-intensive process to switch providers. Alongside monetary costs, a business could face operational disruptions and inefficiencies, including having to train employees on the new system and integrate the new solution with other software and risk losing data as a result. These switching costs are magnified for customers that outsource HR functions to Paychex through the admin-only (ASO) or co-employment models (PEO). These models that allow a customer to outsource mission-critical HR operations such as recruitment, compliance, and benefits administration are deeply entrenched in a business' day-to-day operations. Despite facing intense competitive pressure, Paychex has modestly improved client retention to 84% on average over the five years to 2023, relative to 83% over the 10 years to 2023. Considering that approximately 8.5% of annual client losses are attributed to business failures, we view this retention as reflective of high switching costs. Further, Paychex's retention surpasses the retention of competitors in the small-business market, including Intuit's QuickBooks and Xero, of around 80%. Over the long run, we expect Paychex will continue to invest in software development, customer service, and user experience to maintain customer satisfaction and high retention rates. Maintaining high customer retention allows Paychex to earn a steady stream of recurring revenue at low marginal cost.

Paychex has expanded its offering over the past decade to include a broad range of HCM solutions,

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including HR outsourcing, benefits, and insurance services, in addition to traditional payroll. Paychex offers bundled and unbundled solutions as well as integration capabilities to complementary small-business software, including accounting software and point-of-sale technology, as well as job listing website Indeed. Customers can upgrade their Paychex software to include modules such as benefits administration and time and attendance, increasing the stickiness of the business. Small-business customers tend to prefer all-in-one bundled solutions rather than integrating several providers, making them prime targets for Paychex to upsell modules to. Over the five years to fiscal 2021, demand for retirement services plans and health and benefits insurance outpaced total client growth.

Paychex has built a strong reputation over many decades for delivering reliable and compliant solutions for hundreds of thousands of small-business clients, allowing it to win market share and charge premium pricing. Payroll is a highly sensitive and mission-critical operation for all businesses that place a high value on reliability, accuracy, compliance, and data security. The potential ramifications of failing to make payroll on time or accurately, being noncompliant with applicable laws, or breaching data security can be severe. We expect Paychex has a reputation advantage over smaller, younger operators that lack a record of performance and can attract new business over these operators. Further, Paychex has fostered a powerful distribution relationship with accounting bodies in the United States, banks, and existing clients, with over half of new small-business payroll customers coming through a referral. Despite fierce competition from younger, nimble providers such as Gusto and Paylocity, as well as ADP increasing its presence in the small-business market in recent years, Paychex has been able to win market share, which we attribute to the strength of its intangible assets. Paychex has traditionally charged premium pricing; however, this has diminished somewhat in recent years due to increasing competitive pressures.

Paychex benefits from a cost advantage stemming from economies of scale, creating an advantage over small operators. Paychex is the leading provider of outsourced payroll and HCM solutions to the small-business market in the U.S., paying 1 in 12 private-sector workers. This scale allows Paychex to spread its fixed capital investment, namely software development, and marketing spending over a larger base, affording the company a lower marginal cost relative to smaller operators. For instance, younger operator Paylocity, with a client base 4% the size of Paychex's, was paying about 45% of revenue on selling, general, and administrative expense over the five years to fiscal 2021, compared with 32% for Paychex. The incremental cost of adding a new customer to the platform is minimal and creates material operating leverage for Paychex. Increasingly, small-business clients are using self-service technology to demo, purchase, and onboard themselves to the platform without engaging sales or customer-service teams, further reducing the cost to serve for Paychex. We expect its superior cost position will provide adequate headway for Paychex to combat pricing pressure from competitors and upsell additional modules to existing clients at a lower cost, increasing the stickiness of the business.

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Fair Value and Profit Drivers Emma Williams, Equity Analyst, 29 Jun 2023

Our fair value estimate is $120 per share. This implies a fiscal 2024 price/earnings ratio of 26 and a fiscal 2024 enterprise value/EBITDA of 18. Our discounted cash flow model uses a 7.4% weighted average cost of capital.

We estimate revenue grows at a compound annual growth rate of 6% over the five years to fiscal 2028, driven by modest market share gains, low-single-digit price growth, and taking greater wallet share from existing clients. We expect an increasingly complex regulatory environment, tight labor markets, and growing adoption of hybrid work models to drive demand for Paychex's offerings, including add-on HCM modules and HR outsourcing solutions. We anticipate fierce competition to limit pricing growth to about 2% a year over our explicit forecast period, from an assumed historical average of 3% a year.

Over the same period, we expect operating margins to increase to about 43% from about 41% in fiscal 2023. We anticipate this uplift will be driven by greater uptake of high-margin add-on modules, digital sales, and self-service reducing the cost to serve clients and higher interest on client funds.

We expect Paychex will spend about 2% of revenue on capital expenditure each year to support software development and innovation. Paychex operates in a highly competitive market, and we expect it will need to maintain high levels of investment to ensure that the functionality of its product suite is comparable with peers and meets client demands.

Risk and Uncertainty Emma Williams, Equity Analyst, 29 Jun 2023

Paychex has diversified its revenue away from a reliance on payroll, but it remains highly exposed to swings in economic conditions and labor markets, underpinning our high uncertainty rating. This exposure is magnified by Paychex's reliance on small-business clients, which are more likely to fail during an economic downturn. As an example, Paychex's client base shrank 6% between 2008 and 2010 before staging a gradual recovery to pre-Great Recession levels by 2014. Since the Great Recession, Paychex has increased its exposure to larger clients but remains at the mercy of economic conditions. This also includes upside uncertainty, as we expect Paychex would benefit from new business formation, tighter labor markets, and higher yields on client funds during an economic boom. The company benefited from government stimulus in the COVID-19 recession, which propped up small businesses and created greater regulatory complexity and demand for Paychex's administration and compliance services.

Paychex's environmental, social, and governance risk is low. Paychex handles high volumes of sensitive, personally identifiable information for its customers and their employees, exposing the company to data privacy and security risk; however, we view this risk as immaterial to our uncertainty rating. If a data security breach or breaching of data privacy laws were to occur, Paychex would be exposed to

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regulatory fines, civil lawsuits, or reputational damage. However, Paychex has reasonable measures in place to mitigate this risk, including industry-standard data-protection technologies, regular employee training, a data security team, and executive-level responsibility for information security. Paychex is bound by regional data regulations, and it has had no material data privacy or security breaches.

Capital Allocation Emma Williams, Equity Analyst, 29 Jun 2023

We assign Paychex an Exemplary capital allocation rating based on our assessment of a sound balance sheet risk, fair investment efficacy, and appropriate shareholder distributions.

Paychex's balance sheet health is sound. Paychex operates a capital-light business model with strong free cash flow generation and typically boasts a net cash position. The company is actively exploring bolt-on acquisitions to expand its suite of human capital management solutions and increase scale in the PEO business. We expect Paychex could comfortably increase gearing to support these acquisitions, as well as continued investment in internally generated software. Given the uncertainty around timing and pricing, we do not explicitly forecast acquisitions. In the absence of attractive acquisition targets or internal investment opportunities, we would expect Paychex to return excess cash to shareholders through increasing the payout ratio beyond 80% of net income or increasing share repurchases.

We assess Paychex's investment efficacy as exceptional. Paychex has acquired several PEO businesses in recent years to expand scale and enter new markets, with the largest being the fiscal 2019 acquisition of Oasis for $1.2 billion. This acquisition propelled Paychex to become the second-largest PEO provider in the U.S. after ADP. While Paychex faced initial integration challenges related to consolidating sales processes and underwriting practices, we expect it will be able to achieve scale benefits from technology investments and synergy benefits from cross-selling in coming years. Through internal and acquisitive investment, we expect Paychex to continue to expand its suite of HCM software to remain competitive and take greater share of clients' wallets, increasing switching costs.

Paychex's shareholder distributions are appropriate. The company has returned over $8 billion to shareholders over the eight years to fiscal 2023 primarily through dividends and to a lesser extent share repurchases. Paychex undertakes regular share repurchases to offset the dilutive impact from its equity compensation plan. While these repurchases have typically been executed at share prices above our fair value estimate, the quantum of the premium paid is immaterial. We expect Paychex can comfortably continue to pay out 80% of net income over our forecast period, which is in line with the company's target.

Analyst Notes Archive

Paychex Benefits From Resilient Labor Market in Fiscal Q3 2023, but Conditions Likely to Soften; FVE Intact Emma Williams, Equity Analyst, 30 Mar 2023

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Wide-moat Paychex posted a solid third-quarter fiscal 2023 result that was in line with our expectations. Despite a moderation in hiring activity, the firm enjoyed year-on-year revenue growth of 8% during the quarter underpinned by new client wins, healthy product attachment and like-for-like price increases, partly offset by ongoing weakness in insurance adoption. The firm continues to benefit from increased uptake of nonrecurring employee retention tax credit services, and an uplift in ultra-high margin interest income.

While Paychex continues to benefit from a resilient labor market in late fiscal 2023, we trim our full-year adjusted operating margin forecast toward the midpoint of guidance to 40.7% from 40.9%. Operating margins in the third quarter and year to date have remained flat compared with the prior year period, and we expect this trend to persist as the firm continues its investment in product development and sales. For the full year, we forecast adjusted earnings per share growth of 13%, in line with guidance. However, while our near-term operating margin forecast decreases slightly, our longer-term revenue growth and operating margin expansion estimates are unchanged. As a result, we maintain our $120 fair value estimate, and shares currently trade in line with our unchanged valuation.

Paychex's core small business market has remained remarkably resilient, with high-profile layoffs in the technology sector being largely isolated to larger corporates so far. While microbusiness natural attrition has normalized toward prepandemic levels, overall revenue retention remains strong reflecting the stickiness of the firm's offering, and benefits from a strategic shift to a larger, more diversified client base. However, we expect contractionary monetary policy aimed at curbing economic activity to eventually weigh on employment within the base by calendar year-end, before a bounceback in 2024 as interest rate hikes are unwound.

Paychex Reports Robust Q2 2023 Earnings Despite Economic Headwinds; FVE Up 4% to $120 Emma Williams, Equity Analyst, 23 Dec 2022

Paychex's second-quarter fiscal 2023 result exceeded our expectations amid a backdrop of challenging macroeconomic conditions. As expected, employment growth continues to moderate cycling the pandemic era rebound, however, Paychex's revenue retention has proven resilient relative to our forecasts. This is due to strong retention of larger, higher-value clients and greater product attachment offsetting an uptick of churn in the microbusiness market. Despite a slowdown in hiring activity, the company continues to benefit from tight labor markets and inflationary pressure supporting demand for recruitment, benefits, and outsourced HR solutions, as well HR technology which can support operational efficiencies for clients.

Following the strong quarter, we have raised our full-year fiscal 2023 top-line growth expectations to 8.4% from 6.5%, in line with management's updated guidance. This implies slowing growth in the second half of the year, given continued moderation in employment growth and increased client

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attrition as economic conditions weaken, before a recovery from fiscal 2024. Despite our upgraded revenue forecast, we still expect operating margins will come in around 41% due to ongoing reinvestment in product development and sales. Our longer-term forecasts are also broadly unchanged, but we raise our fair value estimate 4% to $120, due to time value of money. At current prices, Paychex shares screen as fairly valued.

While Paychex's reliance on small business clients elevates sensitivity to swings in economic activity, we believe the firm is well placed to manage potentially turbulent conditions in the near term. Since the Great Recession, the company has become more resilient by increasing exposure to larger clients and diversifying its product mix, and is in a strong financial position with over $400 million in net cash at year-end fiscal 2022.

We Temper Our Near-Term Outlook for Paychex, but Expect a Rebound From 2024, No Change to FVE Emma Williams, Equity Analyst, 18 Oct 2022

Payroll processors have benefited from robust employment gains during the COVID-19 pandemic recovery. However, while labor markets have proven resilient to date in 2022, we have adjusted our macroeconomic forecasts to factor in a near-term slowdown in economic activity before a recovery from fiscal 2024. We expect aggressive contractionary monetary policy aimed at controlling rampant inflation to curb economic activity and slow hiring activity in the near term. Nonetheless, we expect this contraction to be short lived with a forecast rebound from fiscal 2024 as supply chain shocks fade, and tight monetary policy unwinds. Our updated macroeconomic forecasts are in line with payroll processing peers and are immaterial to our valuation for wide-moat Paychex. At current prices, shares are trading in line with our unchanged $115 fair value estimate.

Our full-year forecasts for Paychex are now a bit lower due to weaker near-term economic growth expectations, however this is offset by an improved outlook post fiscal 2024. We continue to expect top-line growth to slow to a single-digit annual rate in fiscal 2023 as the pandemic era rebound fades. However, we trim our revenue growth forecast about 190 basis points to 6.5% due to a softer hiring environment and an accelerated normalization in small business attrition relative to prior expectations, which is marginally below the low end of management's 7%-8% revenue growth guidance. We expect lower operating leverage on a smaller client base to weigh on profitability and lower our earnings per share forecast to about 9%, below management's guidance of 11%-12%.

Solid Start to Paychex's Fiscal 2023 Despite Elevated Economic Uncertainty; Shares Fairly Valued

Emma Williams, Equity Analyst, 29 Sep 2022

We maintain our $115 fair value estimate for wide-moat Paychex following fiscal 2023 first-quarter results that were in line with our expectations. At present, the shares trade roughly at our fair value estimate. Separately, we anticipate no change to our outlook as president and COO John B. Gibson Jr.

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replaces longstanding CEO Martin Mucci upon his retirement in October. Mucci will remain chair of the board.

Revenue grew 11% year on year as strong hiring levels, like-for-like price increases, higher product attachment, and uptake of nonrecurring services offset weak insurance demand. This top-line growth, which included a 24% year-on-year increase in high-margin interest on client funds, expanded the firm's already impressive first-quarter operating margin to 41.1%, up 20 basis points year on year.

Our full-year and medium-term forecasts for Paychex are unchanged following the result. We expect top-line growth to normalize to high single digits in fiscal 2023 before moderating to midsingle digits as the pandemic-era rebound fades. This will be underpinned by mid-single-digit industry growth, modest market share gains, and taking greater share of each client's wallet. We forecast fiscal 2023 earnings per share growth of 10.4%, compared with updated guidance of 11%-12%.

Paychex has begun to reap the benefits of rising interest rates; however, contractionary monetary policies are increasing the risk of a recession in the near term. While uncertainty is elevated and small-business failures have begun to moderate toward prepandemic levels, Paychex reports no early indication of recession-related pressures. Nonetheless, our High Uncertainty Rating captures the firm's sensitivity to swings in economic conditions and reliance on small-business clients, which are more likely to fail in an economic downturn. Our bear-case valuation of $80 captures weaker economic conditions when revenue and profitability would suffer as the client and employee base shrinks.

Paychex Reports A Robust Fiscal 2022 Result, But Now Faces A Double Edged Macroeconomic Sword Emma Williams, Equity Analyst, 30 Jun 2022

Paychex reaped the benefits of a labor market recovery and strong demand for solutions to attract, manage and retain employees in fiscal 2022. Revenue increased an impressive 14% year over year, supported by strong sales execution, resilient retention, normalizing employment levels, and like for like price increases. Client retention stood at above pre pandemic levels at year end which we attribute to a skew to upmarket clients, and a greater uptake of add on products resulting in higher switching costs. This revenue growth--paired with operating efficiencies and limits on discretionary spending--underpinned a standout operating margin expansion of 310 basis points on the prior year, to 40%. While the result was broadly in line with our expectations, we increase our fair value estimate 5% to $115 due to time value of money. Following a market correction in recent months, shares are now trading in line with our updated fair value estimate.

We anticipate rising interest rates aimed at curbing inflation will create tailwinds for Paychex's float income. However contractionary monetary policies elevate the risk of a recession in the near term. While uncertainty has increased, the operating environment remains robust to date, with no early indication of recession-related pressures such as a decline in employment within the client base or a slowdown in sales.

While we do not factor in a downturn into our base case, our high uncertainty rating captures Paychex's sensitivity to swings in economic conditions. This is magnified by the company's reliance on small business clients that are more likely to fail in an economic downturn. As an example, Paychex's client base shrank 6% between 2008 and 2010 before staging a gradual recovery to pre-Great Recession levels by 2014. In the event of weaker economic conditions relative to our base case, we expect both revenue and profitability would suffer as the client and employee base shrinks, leading to a bear case valuation of $80.

Paychex Continues to Capture Upside From the Economic Recovery, but Shares Screen as Overvalued Emma Williams, Equity Analyst, 30 Mar 2022

We have marginally upgraded our fiscal 2022 forecasts for wide-moat Paychex as we were too pessimistic about the COVID-19 omicron variant's potential impact on the small business and labor markets. We now expect fiscal 2022 adjusted diluted earnings per share to increase 23% over the prior year to $3.74, up from our previous forecast of $3.60 and in line with updated guidance. As tailwinds from the labor market recovery fade into fiscal 2023, we continue to expect revenue growth to revert to high-single digits underpinned by mid-single-digit industry growth, modest market share gains, low-single-digit price growth, and taking greater share of client's wallet. Our upgraded near-term forecasts are immaterial to our valuation, and we maintain our $110 fair value estimate. At current prices, Paychex screens as overvalued trading at a 25% premium to our valuation. We suspect the market may be extrapolating recent robust top line growth and margin expansion, relative to our view of conditions normalizing from 2023.

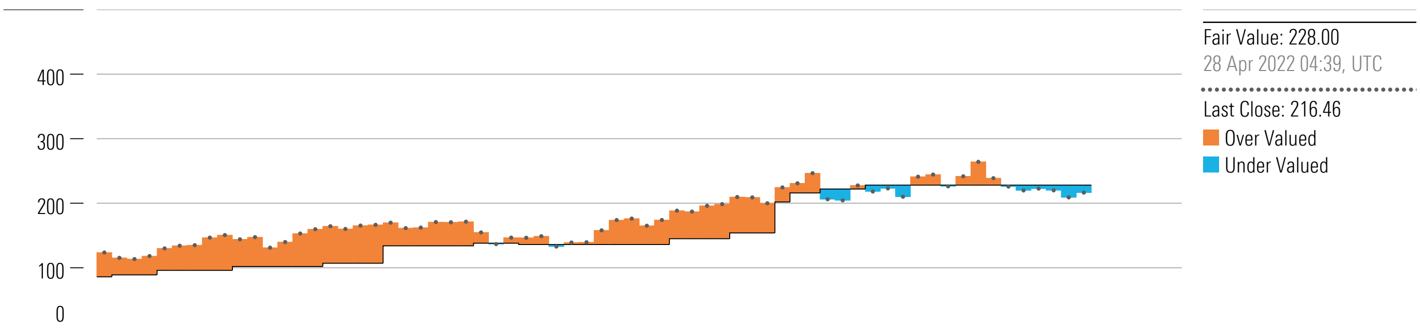
Paychex reported strong third-quarter fiscal 2022 results as the operating environment proved resilient despite widespread spikes in COVID-19 cases. This result follows two consecutive quarters of solid growth underpinned by a continued recovery in economic conditions and labor markets. Third-quarter adjusted operating income increased 20% on a COVID-19-affected prior-year period, outpacing group revenue growth of 15%. This reflects operating leverage supported by a continued normalization of employment levels and an uplift in payrolls per client.

Morningstar Equity Analyst Report | Report as of 30 Jun 2023 00:39, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NASDAQ - ALL MARKETS

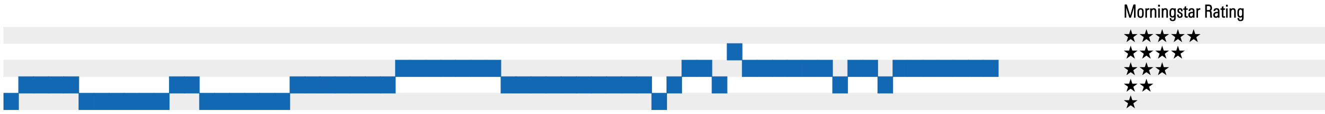
Paychex Inc PAYX ★★★ 29 Jun 2023 21:16, UTC

Competitors Price vs. Fair Value

Automatic Data Processing Inc ADP

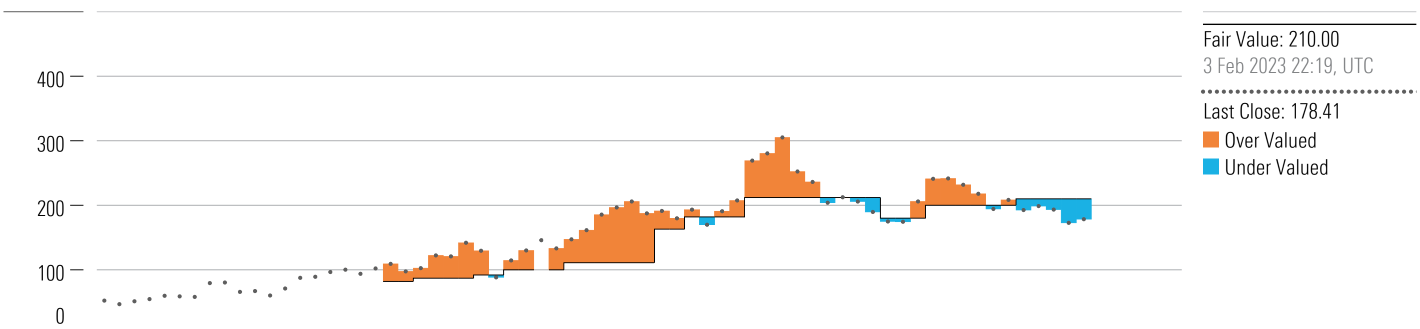


	2018	2019	2020	2021	2022	YTD	
	1.29	1.27	1.30	1.14	1.05	0.95	Price/Fair Value
	14.28	32.54	5.49	42.12	-1.36	-8.33	Total Return %

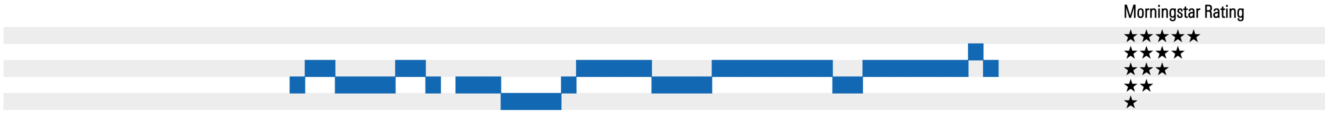


Total Return % as of 29 Jun 2023. Last Close as of 29 Jun 2023. Fair Value as of 28 Apr 2022 04:39, UTC.

Paylocity Holding Corp PCTY



	2018	2019	2020	2021	2022	YTD	
	—	1.39	1.86	1.11	0.97	0.85	Price/Fair Value
	27.67	100.66	70.43	14.69	-17.74	-8.16	Total Return %

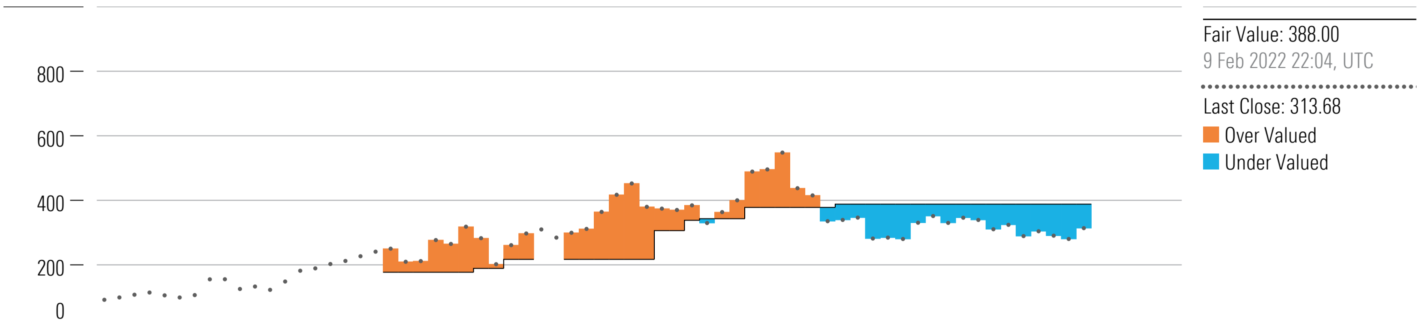


Total Return % as of 29 Jun 2023. Last Close as of 29 Jun 2023. Fair Value as of 3 Feb 2023 22:19, UTC.

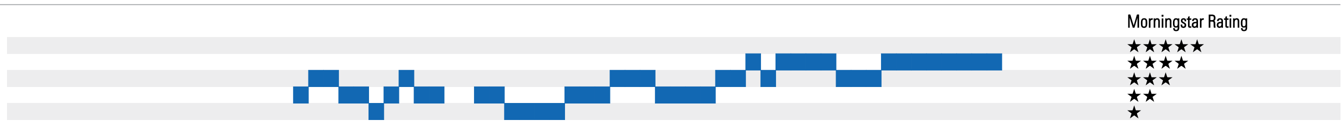
Morningstar Equity Analyst Report | Report as of 30 Jun 2023 00:39, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NASDAQ - ALL MARKETS

Paychex Inc PAYX ★★★ 29 Jun 2023 21:16, UTC

Paycom Software Inc PAYC



	2018	2019	2020	2021	2022	YTD	
	—	1.50	2.08	1.10	0.80	0.81	Price/Fair Value
	52.43	116.22	70.82	-8.19	-25.26	1.21	Total Return %



Total Return % as of 29 Jun 2023. Last Close as of 29 Jun 2023. Fair Value as of 9 Feb 2022 22:04, UTC.

Morningstar Equity Analyst Report | Report as of 30 Jun 2023 00:39, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NASDAQ - ALL MARKETS Page 14 of 20

Paychex Inc PAYX ★★★ 29 Jun 2023 21:16, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
109.33 USD 29 Jun 2023	120.00 USD 23 Dec 2022 05:03, UTC	0.91	39.94 USD Bil 28 Jun 2023	Wide	Positive	High	Exemplary	7 Jun 2023 05:00, UTC

Morningstar Historical Summary

Financials as of 28 Feb 2023

Fiscal Year, ends 31 May	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	YTD	TTM
Revenue (USD Mil)	2,326	2,519	2,740	2,952	3,153	3,378	3,773	4,041	4,057	4,612	3,778	4,922
Revenue Growth %	4.3	8.3	8.8	7.8	6.8	7.1	11.7	7.1	0.4	13.7	8.9	9.5
EBITDA (USD Mil)	1,010	1,094	1,167	1,267	1,389	1,442	1,567	1,686	1,662	2,053	1,744	2,191
EBITDA Margin %	43.4	43.4	42.6	42.9	44.0	42.7	41.5	41.7	41.0	44.5	46.2	44.5
Operating Income (USD Mil)	905	983	1,054	1,147	1,254	1,292	1,371	1,461	1,461	1,840	1,580	1,974
Operating Margin %	38.9	39.0	38.5	38.8	39.8	38.2	36.4	36.2	36.0	39.9	41.8	40.1
Net Income (USD Mil)	569	628	675	757	826	994	1,034	1,098	1,098	1,393	1,207	1,503
Net Margin %	24.5	24.9	24.6	25.6	26.2	29.4	27.4	27.2	27.1	30.2	32.0	30.5
Diluted Shares Outstanding (Mil)	365	366	365	363	363	362	362	361	362	363	362	363
Diluted Earnings Per Share (USD)	1.56	1.71	1.85	2.09	2.28	2.75	2.86	3.04	3.03	3.84	3.33	4.15
Dividends Per Share (USD)	0.65	1.40	1.52	1.68	1.84	2.06	2.30	2.48	2.52	2.77	2.37	3.16

Valuation as of 31 May 2023

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Recent Qtr	TTM
Price/Sales	6.9	6.4	6.8	7.2	7.6	6.7	7.6	8.5	11.4	8.7	8.4	7.7
Price/Earnings	28.2	26.1	26.3	28.3	29.3	23.4	28.6	31.8	38.8	28.6	27.6	25.3
Price/Cash Flow	22.2	19.0	21.1	21.8	23.1	18.8	23.0	25.8	35.7	25.6	25.5	23.4
Dividend Yield %	1.54	3.16	3.03	2.89	2.82	3.35	2.85	2.66	1.9	2.62	2.76	3.11
Price/Book	9.4	9.1	10.3	12.0	12.4	9.7	11.9	11.6	15.8	13.0	12.2	11.1
EV/EBITDA	16.0	14.8	16.0	17.1	17.5	15.7	19.7	19.9	29.6	20.1	0.0	0.0

Operating Performance / Profitability as of 28 Feb 2023

Fiscal Year, ends 31 May	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	YTD	TTM
ROA %	9.0	10.0	10.5	11.7	12.5	13.5	12.5	12.8	12.4	14.8	—	14.4
ROE %	33.7	35.4	37.9	40.9	42.7	46.1	41.6	40.7	38.3	46.2	—	45.0
ROIC %	33.4	35.1	37.6	40.7	42.5	45.8	31.5	31.4	29.8	36.3	—	35.7
Asset Turnover	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	—	0.5

Financial Leverage

Fiscal Year, ends 31 May	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Recent Qtr	TTM
Debt/Capital %	—	—	—	—	—	—	23.6	24.3	23.2	22.1	20.2	—
Equity/Assets %	28.8	27.9	27.6	29.7	28.6	29.8	30.2	32.5	31.9	32.0	32.1	—
Total Debt/EBITDA	—	—	—	—	—	—	0.5	0.5	0.5	0.4	0.5	—
EBITDA/Interest Expense	10,099.1	994.8	1,667.5	1,152.1	555.5	369.7	89.0	43.4	46.4	56.1	63.9	60.2

Morningstar Analyst Historical/Forecast Summary as of 29 Jun 2023

Financials

			Estimates		
Fiscal Year, ends 05-31-2023	2021	2022	2023	2024	2025
Revenue (USD Mil)	4,612	5,007	5,327	5,639	6,022
Revenue Growth %	13.7	8.6	6.4	5.9	6.8
EBITDA (USD Mil)	2,050	2,212	2,416	2,572	2,763
EBITDA Margin %	44.5	44.2	45.4	45.6	45.9
Operating Income (USD Mil)	1,840	2,033	2,195	2,361	2,550
Operating Margin %	39.9	40.6	41.2	41.9	42.3
Net Income (USD Mil)	1,368	1,548	1,682	1,800	1,944
Net Margin %	29.7	30.9	31.6	31.9	32.3
Diluted Shares Outstanding (Mil)	363	362	361	361	360
Diluted Earnings Per Share(USD)	3.77	4.27	4.65	4.99	5.40
Dividends Per Share(USD)	2.77	3.26	3.72	3.99	4.32

Forward Valuation

			Estimates		
	2021	2022	2023	2024	2025
Price/Sales	7.9	8.9	7.4	7.0	6.5
Price/Earnings	32.8	24.6	23.5	21.9	20.2
Price/Cash Flow	26.5	28.3	18.1	19.1	17.4
Dividend Yield %	2.2	3.1	3.4	3.7	4.0
Price/Book	14.6	10.9	10.6	9.9	9.2
EV/EBITDA	17.7	19.9	16.0	15.0	14.0

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Appendix
Historical Morningstar Rating

Paychex Inc PAYX 29 Jun 2023 21:16, UTC

Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
—	—	—	—	—	—	★★★	★★★	★★★	★★★	★★★	★★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★	★★	★★★	★★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★	★★	★★★	★★	★	★★	★★	★★	★★	★★	★★	★★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★	★★	★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★★	★★★	★★★	★★★	★	★	★	★	★	★★	★★	★★
Dec 2018	Nov 2018	Oct 2018	Sep 2018	Aug 2018	Jul 2018	Jun 2018	May 2018	Apr 2018	Mar 2018	Feb 2018	Jan 2018
★★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★

Automatic Data Processing Inc ADP 29 Jun 2023 21:16, UTC

Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
—	—	—	—	—	—	★★★	★★★	★★★	★★★	★★★	★★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★	★★	★★★	★★★	★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★	★★★	★★★	★★	★	★★	★★	★★	★★	★★	★★	★★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★	★★	★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★	★★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★	★★	★★	★★	★★	★	★	★	★	★	★	★★
Dec 2018	Nov 2018	Oct 2018	Sep 2018	Aug 2018	Jul 2018	Jun 2018	May 2018	Apr 2018	Mar 2018	Feb 2018	Jan 2018
★★	★	★	★	★	★	★	★★	★★	★★	★★	★

Paylocity Holding Corp PCTY 29 Jun 2023 21:16, UTC

Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
—	—	—	—	—	—	★★★	★★★★	★★★	★★★	★★★	★★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★	★★★	★★★	★★	★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★★	★★	★★	★★	★★	★★★	★★★	★★★	★★★	★★★	★★	★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★	★	★	★★	★★	★★	—	★★	★★★	★★★	★★	★★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★	★★	★★★	★★★	★★	—	—	—	—	—	—	—
Dec 2018	Nov 2018	Oct 2018	Sep 2018	Aug 2018	Jul 2018	Jun 2018	May 2018	Apr 2018	Mar 2018	Feb 2018	Jan 2018
—	—	—	—	—	—	—	—	—	—	—	—

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Paycom Software Inc PAYC 29 Jun 2023 21:16, UTC

Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
—	—	—	—	—	—	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★★	★★★★	★★★	★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★★	★★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★★	★★	★★	★★	★★	★★★	★★★	★★★	★★	★★	★★	★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★	★	★	★★	★★	—	—	★★	★★	★★★	★★	★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★	★★	★★★	★★★	★★	—	—	—	—	—	—	—
Dec 2018	Nov 2018	Oct 2018	Sep 2018	Aug 2018	Jul 2018	Jun 2018	May 2018	Apr 2018	Mar 2018	Feb 2018	Jan 2018
—	—	—	—	—	—	—	—	—	—	—	—

Research Methodology for Valuing Companies

Overview

At the heart of our valuation system is a detailed projection of a company's future cash flows, resulting from our analysts' research. Analysts create custom industry and company assumptions to feed income statement, balance sheet, and capital investment assumptions into our globally standardized, proprietary discounted cash flow, or DCF, modeling templates. We use scenario analysis, indepth competitive advantage analysis, and a variety of other analytical tools to augment this process. Moreover, we think analyzing valuation through discounted cash flows presents a better lens for viewing cyclical companies, high-growth firms, businesses with finite lives (e.g., mines), or companies expected to generate negative earnings over the next few years. That said, we don't dismiss multiples altogether but rather use them as supporting cross-checks for our DCF-based fair value estimates. We also acknowledge that DCF models offer their own challenges (including a potential proliferation of estimated inputs and the possibility that the method may miss shortterm market-price movements), but we believe these negatives are mitigated by deep analysis and our longterm approach.

Morningstar's equity research group ("we," "our") believes that a company's intrinsic worth results from the future cash flows it can generate. The Morningstar Rating for stocks identifies stocks trading at a discount or premium to their intrinsic worth—or fair value estimate, in Morningstar terminology. Five-star stocks sell for the biggest risk adjusted discount to their fair values, whereas 1-star stocks trade at premiums to their intrinsic worth.

Four key components drive the Morningstar rating: (1) our assessment of the firm's economic moat, (2) our estimate of the stock's fair value, (3) our uncertainty around that fair value estimate and (4) the current market price. This process ultimately culminates in our singlepoint star rating.

1. Economic Moat

The concept of an economic moat plays a vital role not only in our qualitative assessment of a firm's long-term investment potential, but also in the actual calculation of our fair value estimates. An economic moat is a structural feature that allows a firm to sustain excess profits over a long period of time. We define economic profits as returns on invested capital (or ROIC) over and above our estimate of a firm's cost of capital, or weighted average cost of capital (or WACC). Without a moat, profits are more susceptible to competition. We have identified five sources of economic moats: intangible assets, switching costs, network effect, cost advantage, and efficient scale.

Companies with a narrow moat are those we believe are more likely than not to achieve normalized excess returns for at least the next 10 years. Wide-moat companies are those in which we have very high confidence that excess returns will remain for 10 years, with excess returns more likely than not to remain for at least 20 years. The longer a firm generates economic profits, the higher its intrinsic value. We believe low-quality, no-moat companies will see their normalized returns gravitate toward the firm's cost of capital more quickly than companies with moats.

When considering a company's moat, we also assess whether there is a substantial threat of value destruction, stemming from risks related to ESG, industry disruption, financial health, or other idiosyncratic issues. In this context, a risk is considered potentially value destructive if its occurrence would eliminate a firm's economic profit on a cumulative or midcycle basis. If we deem the probability of occurrence sufficiently high, we would not characterize the company as possessing an economic moat.

To assess the sustainability of excess profits, analysts perform ongoing assessments of the moat trend. A firm's moat trend is positive in cases where we think its sources of competitive advantage are growing stronger; stable where we don't anticipate changes to competitive advantages over the next several years; or negative when we see signs of deterioration.

2. Estimated Fair Value

Combining our analysts' financial forecasts with the firm's economic moat helps us assess how long returns on invested capital are likely to exceed the firm's cost of capital. Returns of firms with a wide economic moat rating are assumed to fade to the perpetuity period over a longer period of time than the returns of narrow-moat firms, and both will fade slower than no-moat firms, increasing our estimate of their intrinsic value.

Our model is divided into three distinct stages:

Stage I: Explicit Forecast

In this stage, which can last five to 10 years, analysts make full financial statement forecasts, including items such as revenue, profit margins, tax rates, changes in workingcapital accounts, and capital spending. Based on these projections, we calculate earnings before interest, after taxes (EBI) and the net new investment (NNI) to derive our annual free cash flow forecast.

Stage II: Fade

The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested ("RONIC")—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling the income statement, balance sheet, and cash flow statement as we do in Stage I. The length of the second stage depends on the strength of the company's economic moat. We forecast this period to last anywhere from one year (for companies with no economic moat) to 10–15 years or more (for wide-moat companies). During this period, cash flows are forecast using four assumptions: an average growth rate for EBI over the period, a normalized investment rate, average return on new invested capital (RONIC), and the number of years until perpetuity, when excess returns cease. The investment rate and return on new invested capital decline until a perpetuity value is calculated. In the case of firms that do not earn their cost of capital, we assume marginal ROICs rise to the firm's cost of capital (usually attributable to less reinvestment), and we may truncate the second stage.

Stage III: Perpetuity

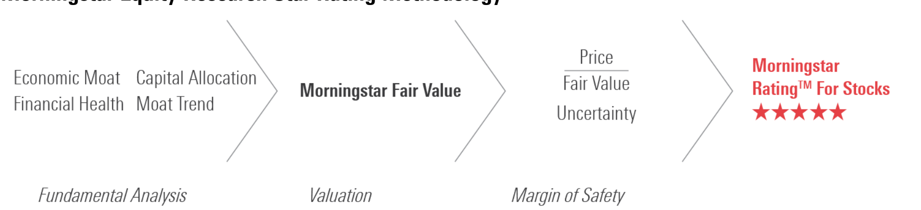
Once a company's marginal ROIC hits its cost of capital, we calculate a continuing value, using a standard perpetuity formula. At perpetuity, we assume that any growth or decline or investment in the business neither creates nor destroys value and that any new investment provides a return in line with estimated WACC.

Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total present value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return to all capital providers—we discount future cash flows using the WACC, which is a weighted average of the costs of equity, debt, and preferred stock (and any other funding sources), using expected future proportionate long-term, market-value weights.

3. Uncertainty Around That Fair Value Estimate

Morningstar's Uncertainty Rating is designed to capture the range of potential outcomes for a company's intrinsic value. This rating is used to assign the margin of safety required before investing, which in turn explicitly drives our stock star rating system. The Uncertainty Rating is

Morningstar Equity Research Star Rating Methodology



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Research Methodology for Valuing Companies

aimed at identifying the confidence we should have in assigning a fair value estimate for a given stock.

Our Uncertainty Rating is meant to take into account anything that can increase the potential dispersion of future outcomes for the intrinsic value of a company, and anything that can affect our ability to accurately predict these outcomes. The rating begins with a suggested rating produced by a quantitative process based on the trailing 12-month standard deviation of daily stock returns. An analyst overlay is then applied, with analysts using the suggested rating, historical rating data, and their own knowledge of the company to inform them as they make the final Uncertainty Rating decision. Ultimately, the rating decision rests with the analyst. Analysts take into account many characteristics when making their final decision, including cyclical factors, operational and financial factors such as leverage, company-specific events, ESG risks, and anything else that might increase the potential dispersion of future outcomes and our ability to estimate those outcomes.

Our recommended margin of safety—the discount to fair value demanded before we'd recommend buying or selling the stock—widens as our uncertainty of the estimated value of the equity increases. The more uncertain we are about the potential dispersion of outcomes, the greater the discount we require relative to our estimate of the value of the firm before we would recommend the purchase of the shares. In addition, the Uncertainty Rating provides guidance in portfolio construction based on risk tolerance.

Our Uncertainty Ratings are: Low, Medium, High, Very High, and Extreme.

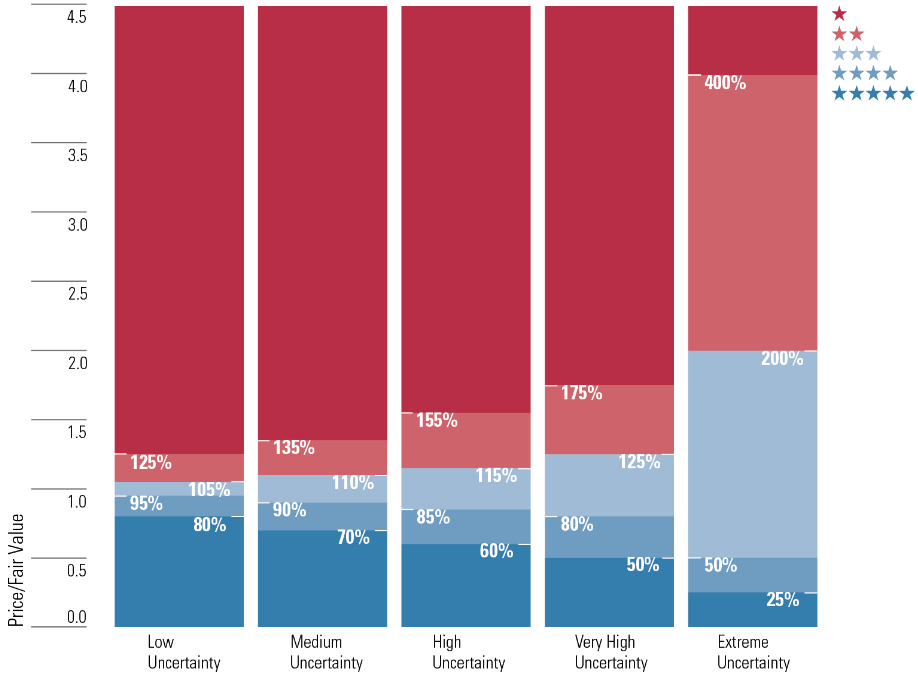
	Margin of Safety	
Qualitative Analysis Uncertainty Ratings	★★★★★Rating	★Rating
Low	20% Discount	25% Premium
Medium	30% Discount	35% Premium
High	40% Discount	55% Premium
Very High	50% Discount	75% Premium
Extreme	75% Discount	300% Premium

Our uncertainty rating is based on the interquartile range, or the middle 50% of potential outcomes, covering the 25th percentile–75th percentile. This means that when a stock hits 5 stars, we expect there is a 75% chance that the intrinsic value of that stock lies above the current market price. Similarly, when a stock hits 1 star, we expect there is a 75% chance that the intrinsic value of that stock lies below the current market price.

4. Market Price

The market prices used in this analysis and noted in the report come from exchange on which the stock is listed which we believe is a reliable source.

Morningstar Equity Research Star Rating Methodology



For more details about our methodology, please go to https://shareholders.morningstar.com

Morningstar Star Rating for Stocks

Once we determine the fair value estimate of a stock, we compare it with the stock's current market price on a daily basis, and the star rating is automatically re-calculated at the market close on every day the market on which the stock is listed is open. Our analysts keep close tabs on the companies they follow, and, based on thorough and ongoing analysis, raise or lower their fair value estimates as warranted.

Please note, there is no predefined distribution of stars. That is, the percentage of stocks that earn 5 stars can fluctuate daily, so the star ratings, in the aggregate, can serve as a gauge of the broader market's valuation. When there are many 5-star stocks, the stock market as a whole is more undervalued, in our opinion, than when very few companies garner our highest rating.

We expect that if our base-case assumptions are true the market price will converge on our fair value estimate over time generally within three years (although it is impossible to predict the exact time frame in which market prices may adjust).

Our star ratings are guideposts to a broad audience and individuals must consider their own specific investment goals, risk tolerance, tax situation, time horizon, income needs, and complete investment portfolio, among other factors.

The Morningstar Star Ratings for stocks are defined below:

★★★★★ We believe appreciation beyond a fair risk adjusted return is highly likely over a multiyear time frame. Scenario analysis developed by our analysts indicates that the current market price represents an excessively pessimistic outlook, limiting downside risk and maximizing upside potential.

★★★★ We believe appreciation beyond a fair risk-adjusted return is likely.

★★★ Indicates our belief that investors are likely to receive a fair risk-adjusted return (approximately cost of equity).

★★ We believe investors are likely to receive a less than fair risk-adjusted return.

★ Indicates a high probability of undesirable risk-adjusted returns from the current market price over a multiyear time frame, based on our analysis. Scenario analysis by our analysts indicates that the market is pricing in an excessively optimistic outlook, limiting upside potential and leaving the investor exposed to Capital loss.

Other Definitions

Last Price: Price of the stock as of the close of the market of the last trading day before date of the report.

Research Methodology for Valuing Companies

Capital Allocation Rating: Our Capital Allocation (or Stewardship) Rating represents our assessment of the quality of management's capital allocation, with particular emphasis on the firm's balance sheet, investments, and shareholder distributions. Analysts consider companies' investment strategy and valuation, balance sheet management, and dividend and share buyback policies. Corporate governance factors are only considered if they are likely to materially impact shareholder value, though either the balance sheet, investment, or shareholder distributions. Analysts assign one of three ratings: "Exemplary", "Standard", or "Poor". Analysts judge Capital Allocation from an equity holder's perspective. Ratings are determined on a forward looking and absolute basis. The Standard rating is most common as most managers will exhibit neither exceptionally strong nor poor capital allocation.

Capital Allocation (or Stewardship) analysis published prior to Dec. 9, 2020, was determined using a different process. Beyond investment strategy, financial leverage, and dividend and share buyback policies, analysts also considered execution, compensation, related party transactions, and accounting practices in the rating.

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Sustainalytics ESG Risk Rating Assessment: The ESG Risk Rating Assessment is provided by Sustainalytics; a Morningstar company.

Sustainalytics' ESG Risk Ratings measure the degree to which company's economic value at risk is driven by environment, social and governance (ESG) factors. Sustainalytics analyzes over 1,300 data points to assess a company's exposure to and management of ESG risks. In other words, ESG Risk Ratings measures a company's unmanaged ESG Risks represented as a quantitative score. Unmanaged Risk is measured on an open-ended scale starting at zero (no risk) with lower scores representing less unmanaged risk and, for 95% of cases, the unmanaged ESG Risk score is below 50.

Based on their quantitative scores, companies are grouped into one of five Risk Categories (negligible, low, medium, high, severe). These risk categories are absolute, meaning that a 'high risk' assessment reflects a comparable degree of unmanaged ESG risk across all subindustries covered.

The ESG Risk Rating Assessment is a visual representation of Sustainalytics ESG Risk Categories on a 1 to 5 scale. Companies with Negligible Risk = 5 Globes, Low Risk = 4, Medium Risk = 3 Globes, High Risk = 2 Globes, Severe Risk = 1 Globe. For more information, please visit sustainalytics.com/esg-ratings/

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