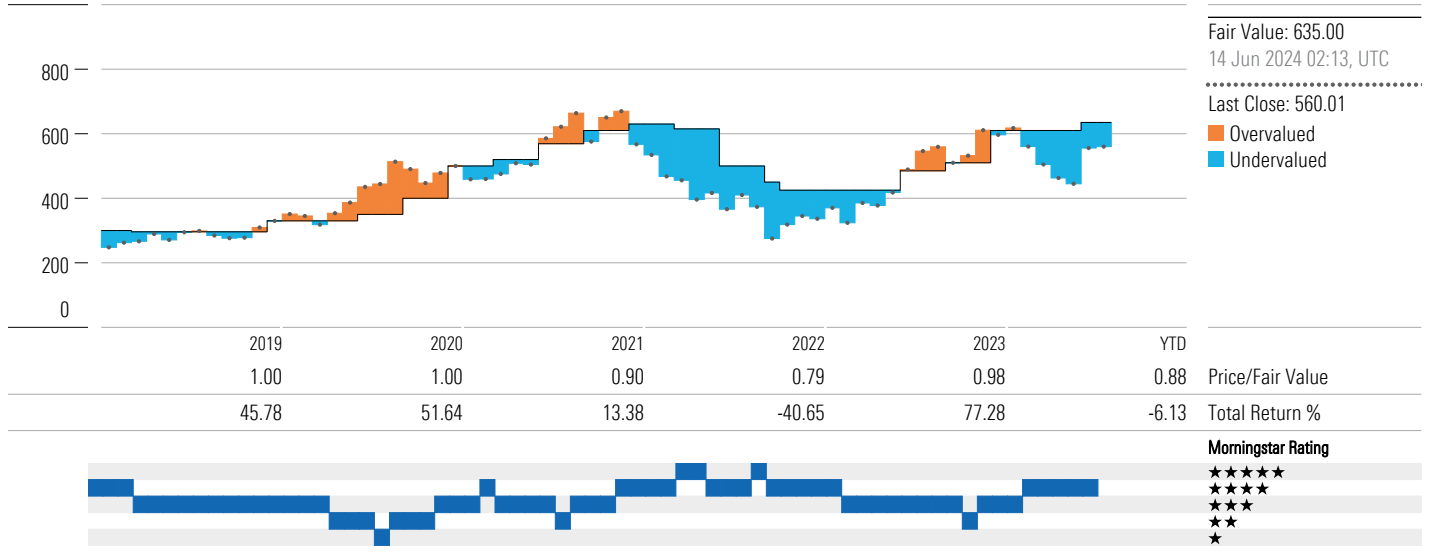


# Adobe Inc ADBE ★★★ 1 Jul 2024 21:24, UTC

<b>Last Price</b> 560.01 USD 1 Jul 2024	<b>Fair Value Estimate</b> 635.00 USD 14 Jun 2024 02:13, UTC	<b>Price/FVE</b> 0.88	<b>Market Cap</b> 246.33 USD Bil 28 Jun 2024	<b>Economic Moat™</b> Wide	<b>Equity Style Box</b> Large Growth	<b>Uncertainty</b> High	<b>Capital Allocation</b> Exemplary	<b>ESG Risk Rating Assessment¹</b> 5 Jun 2024 05:00, UTC
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## Price vs. Fair Value



Total Return % as of 1 Jul 2024. Last Close as of 1 Jul 2024. Fair Value as of 14 Jun 2024 02:13, UTC.

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The primary analyst covering this company does not own its stock.

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

## Adobe Earnings: Adobe Express Drawing in New Users, Contributing to Net New ARR Strength

**Analyst Note** Dan Romanoff, CPA, Senior Equity Analyst, 14 Jun 2024

We are raising our fair estimate to \$635 per share from \$610 after wide-moat Adobe reported good second-quarter results and raised its outlook for the full year on all headline numbers. After last quarter's big selloff, which we think was driven by disappointing net new annual recurring revenue, management also raised its full-year outlook for this metric. We were steadfast in our belief in our Adobe thesis after the past quarter and are encouraged by financial progress through the second quarter. We think recent price increases, recent and pending important product launches, and rapid generative artificial intelligence adoption should help drive growth over the next several quarters. Changes to our model were short-term fine-tuning, while our longer-term estimates are unchanged, and we continue to see shares as undervalued.

Revenue performance was solid overall, with no obvious weak spots and notable strength in digital media. Adobe's strategy of creating a broad demand funnel at the top with express and driving AI usage to help convert users seems to be working, as management noted strength in both new users on the digital front, better-than-expected conversions to higher-price solutions, and better retention of existing clients. The firm also saw strength in digital, large enterprise customers, small and medium business, and international. Second-quarter revenue increased by 11% year over year in constant currency (10% as reported) to \$5.31 billion, exceeding the top end of guidance at \$5.30 billion. Digital media increased by 11% year over year, as reported, and effectively drove all of the upside in the quarter relative to our

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<b>Sector</b> Technology	<b>Industry</b> Software - Infrastructure
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## Business Description

Adobe provides content creation, document management, and digital marketing and advertising software and services to creative professionals and marketers for creating, managing, delivering, measuring, optimizing, and engaging with compelling content multiple operating systems, devices, and media. The company operates with three segments: digital media content creation, digital experience for marketing solutions, and publishing for legacy products (less than 5% of revenue).

model, while digital experience increased by 9%.

After last quarter's net new ARR hiccup, this quarter's strength should allay concerns about a rapid drop-off in growth. Net new ARR in digital media was \$487 million, compared with guidance of \$440 million, which we view as very good.

## Business Strategy & Outlook Dan Romanoff, CPA, Senior Equity Analyst, 18 Apr 2024

Adobe has come to dominate in content creation software with its iconic Photoshop and Illustrator solutions, both now part of the broader Creative Cloud. The company has added new products and features to the suite through organic development and bolt-on acquisitions to drive the most comprehensive portfolio of tools used in print, digital, and video content creation. The December 2021 launch of Adobe Express helps further broaden the company's funnel, as it incorporates popular features of the full Creative Cloud but comes in lower cost and free versions. The 2023 introduction of Firefly marks an important artificial intelligence solution that should also attract new users. We think Adobe is properly focusing on bringing new users under its umbrella and believe that converting these users will become more important over time.

CEO Shantanu Narayen provided Adobe with another growth leg in 2009 with the acquisition of Omniture, a leading web analytics solution that serves as the foundation of the digital experience segment that Adobe has used as a platform to layer in a variety of other marketing and advertising solutions. Adobe benefits from the natural cross-selling opportunity from Creative Cloud to the business and operational aspects of marketing and advertising. On the heels of the Magento, Marketo, and Workfront acquisitions, we expect Adobe to continue to focus its M&A efforts on the digital experience segment and other emerging areas.

The Document Cloud is driven by one of Adobe's first products, Acrobat, and the ubiquitous PDF file format created by the company; it is now a \$2.8 billion business. The rise of smartphones and tablets, coupled with bring-your-own-device and a mobile workforce, has made a file format that is usable on any screen more relevant than ever.

Adobe believes it is attacking an addressable market well in excess of \$200 billion. The company is introducing and leveraging features across its various cloud offerings (like Sensei artificial intelligence) to drive a more cohesive experience, win new clients, upsell users to higher-price-point solutions, and cross-sell digital media offerings.

## Bulls Say Dan Romanoff, CPA, Senior Equity Analyst, 14 Jun 2024

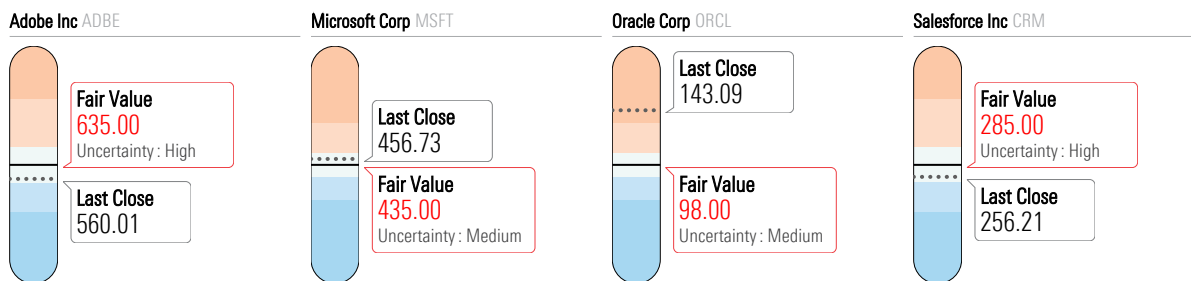
- ▶ Adobe is the de facto standard in content creation software and PDF file editing, categories it created and still dominates.
- ▶ Shift to subscriptions eliminates piracy and makes revenue recurring, while removing the high upfront

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## Competitors



	Adobe Inc ADBE	Microsoft Corp MSFT	Oracle Corp ORCL	Salesforce Inc CRM
Economic Moat	Wide	Wide	Narrow	Wide
Currency	USD	USD	USD	USD
Fair Value	635.00 14 Jun 2024 02:13, UTC	435.00 26 Apr 2024 07:04, UTC	98.00 12 Jun 2024 02:36, UTC	285.00 30 May 2024 14:43, UTC
1-Star Price	984.25	587.25	132.30	441.75
5-Star Price	381.00	304.50	68.60	171.00
Assessment	Undervalued 30 Jun 2024	Fairly Valued 1 Jul 2024	Significantly Overvalued 30 Jun 2024	Fairly Valued 30 Jun 2024
Morningstar Rating	★★★ 1 Jul 2024 21:24, UTC	★★★ 1 Jul 2024 21:24, UTC	★ 1 Jul 2024 21:24, UTC	★★★ 1 Jul 2024 21:24, UTC
Analyst	Dan Romanoff, Senior Equity Analyst	Dan Romanoff, Senior Equity Analyst	Julie Bhusal Sharma, Equity Analyst	Dan Romanoff, Senior Equity Analyst
Capital Allocation	Exemplary	Exemplary	Poor	Standard
Price/Fair Value	0.88	1.05	1.46	0.90
Price/Sales	12.41	14.11	7.53	7.07
Price/Book	16.60	13.12	44.71	4.17
Price/Earning	50.00	38.73	38.06	46.24
Dividend Yield	—	0.66%	1.13%	0.16%
Market Cap	246.33 Bil	3,321.87 Bil	389.13 Bil	249.13 Bil
52-Week Range	433.97 — 638.25	309.45 — 456.17	99.26 — 145.32	193.68 — 318.72
Investment Style	Large Growth	Large Growth	Large Growth	Large Growth

price for customers. Growth has accelerated and margins are expanding from the initial conversion inflection.

- ▶ Adobe is extending its empire in the creative world from content creation to marketing services more broadly through the expansion of its digital experience segment. This segment should drive growth in the coming years.

### Bears Say Dan Romanoff, CPA, Senior Equity Analyst, 14 Jun 2024

- ▶ Momentum is slowing in Creative Cloud after elevated growth driven largely by the model transition to software as a service.
- ▶ Digital experience is an emerging space and one that Adobe neither created nor dominates. Growth could be slower than we anticipate or margin expansion may not materialize.
- ▶ Digital experience has been built largely through acquisition, including Magento and Marketo in 2018. This raises the possibility of disruption from inadequate integration efforts and lends credence to concerns that Adobe may overpay for increasingly large deals.

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## Economic Moat Dan Romanoff, CPA, Senior Equity Analyst, 18 Apr 2024

For Adobe overall, we assign a wide economic moat rating arising from switching costs. Based on the company's segments, we believe digital media has a wide moat based on switching costs and digital experience has a narrow moat also arising from switching costs. We believe Adobe's moat will allow the company to earn returns in excess of its cost of capital over the next 20 years.

Switching costs for software are often driven by several factors, in our view. The more critical the function and the more touch points across an organization a software vendor has, the higher the switching costs. There is also the direct time and expense of implementing a new software package for the customer while maintaining the existing platform and retraining employees on a new system. Additionally, there is operational risk of changing software vendors, including business process re-engineering, loss of data during the changeover, and overall project execution. A major implementation is likely to involve a system integrator and can take in excess of a year in bad cases. Lastly, lost productivity is likely to be an issue as customers move up a learning curve on the new system along with the distraction of users involved in the function where the change is occurring.

Retention metrics typically help inform investors on both the presence and the durability of a moat. These come in two flavors: gross, which describes what percentage of the customer base remains customers after a given period, and net, which highlights what percentage of customer spending is retained by the software provider after a given period. Adobe does not provide retention metrics because its user base has a large percentage of small-business users and periodic subscribers. Software firms regularly see lower retention rates for small-business users than for enterprise customers. Further, in the case of Adobe, many creative professionals work on a contract basis, meaning that they might subscribe to Creative Cloud for a month, not subscribe for the next month, and subscribe again the following month. We believe Adobe experiences customer retention of 85%-90%, but we also do not think this is particularly relevant for the company, given the dynamics at play with the customer base.

We believe the digital media segment enjoys a wide moat based on switching costs. Digital media represents approximately 70%-75% of revenue. This segment contains Creative Cloud, which is nearly 50% of total revenue, and Document Cloud, which is approximately 10% of revenue. Creative Cloud is composed of iconic products Photoshop, Premiere, Illustrator, and After Effects, among others, and a variety of mobile versions of these products and additional discrete mobile solutions. Document Cloud consists of the Acrobat family of products, including Sign.

We believe Creative Cloud enjoys the widest moat under the Adobe umbrella. Like most software solutions, once Creative Cloud or any of the individual applications contained therein is inserted into the workflow of creative professionals, it becomes very difficult to change solutions. Further, while there is no shortage of competitive point solutions, Adobe Creative Cloud is so pervasive in the creative world

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that replacing it would be an insurmountable barrier, in our view. Because nearly all creative professionals rely on the Creative Cloud, all other creative professionals must also use it. While the Creative Cloud has its issues, particularly premium pricing, and any one organization or freelance professional might be willing to switch, they would find it difficult to work in an industry that has generally standardized around it. Similarly, Adobe's large installed base helps ensure that when the company releases or acquires a related new solution, it immediately faces a substantial and welcoming audience.

Since its introduction in the late 1980s, Photoshop quickly became the industry leader and eventually the industry standard for image editing software. Rather than remaining complacent, Adobe has consistently invested in the solution, introducing new features and adding applications that could be sold to existing users of Photoshop. These features and products were both internally developed and from acquisitions. For these reasons, Creative Cloud still finds itself at the forefront of the industry.

We believe Adobe's creation of the PDF file format, its first-mover advantage with Acrobat, and significant installed base have created a wide moat based on switching costs for the firm's Document Cloud. Within Document Cloud, Adobe created the portable document format as an evolution of its original product, PostScript. In 1990, there was no file format that was readily usable across operating system platforms, but by the mid-1990s, there were several products vying for widespread adoption. Adobe's PDF won, thanks in part to distributing Acrobat Reader for free to personal computer original equipment manufacturers, and has become the standard. Adobe then developed an enterprise Acrobat product as a PDF editor and workflow solution. We believe there are no truly competitive solutions to the PDF file format, even if there is a wide variety of PDF editors in free and paid versions. By any measure, Acrobat remains the gold standard in PDF editors. Over the years, the firm has added a variety of key features to Acrobat, including e-signatures, which became mainstream overnight during the covid lockdowns.

In our opinion, the digital experience segment enjoys a narrow moat based on switching costs. Digital experience represents approximately 25% of revenue. This segment contains Adobe Experience Platform, Adobe Analytics, Adobe Experience Manager, Marketo Engage, and Adobe Commerce, among other solutions. We view Digital Experience as a natural extension of the digital media segment and see the same switching costs that we see for most software companies. Once these applications are integrated into a business process workflow, we believe they are difficult to change. A digital experience platform, by its very nature, is complex, involving numerous applications and touching a wide range of systems and data repositories used by the customer.

Unlike the creative side, Adobe does not have a first-mover advantage in digital experience. The company made its foray into this broad umbrella initially through acquisitions, notably of Omniture in

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2009. Since then, it has made other meaningful acquisitions, such as Marketo and Magento, both in 2018, and has also organically added solutions to the portfolio. Through these efforts, Adobe has established itself as a leader in various categories that fall under the digital experience umbrella, including digital marketing analytics, campaign management, and customer engagement, among others.

Digital experience solutions are relatively new compared with the creative side, and unlike with Photoshop, where no serious competitive threats exist, there are a wide variety of large competitors in the various marketing analytics, campaign management, customer engagement, advertising platform, and related areas. While this has been a nascent and rapidly emerging area, more recently we see several companies starting to emerge as leaders with a holistic and complete platform. One of these leaders is Adobe. We believe Adobe's tightly integrated and robust platform, with its accelerated innovation based on customer feedback from its extensive creative customer base, is seen as a strong suite by the marketplace and well positioned to capture an outsize position in this young and growing market.

### Fair Value and Profit Drivers Dan Romanoff, CPA, Senior Equity Analyst, 13 Jun 2024

Our fair value estimate for Adobe is \$635 per share, which implies a fiscal 2024 enterprise value/sales multiple of 13 times, and an adjusted P/E multiple of 35 times.

We model a five-year revenue compound annual growth rate of approximately 11%. We foresee solid growth in digital media and digital experience even as both steadily slow over time. Digital experience should benefit from 2023 price increases that should filter in over the course of several years and increasing penetration into an enormous market as defined by Adobe. We believe a relatively frictionless cross-selling opportunity exists for the company, as creative professionals are already steeped in Adobe products. The desire to consolidate vendors makes Adobe an obvious choice for marketing software solutions, and the fact that Adobe's products are strong should help initially in what we believe is a large greenfield opportunity. In digital media, we have been impressed by Adobe's ability to draw in new users that many did not believe existed. We believe some of this is related to piracy, which is effectively eliminated in the SaaS model. Additionally, the company has had success upselling existing users to higher-price-point products and cross-selling acquired technologies, such as Workfront and Frame.io. We believe continued innovation, gathering new users, and upselling existing users in Creative Cloud should help drive strong growth for the next several years.

We model non-GAAP operating margin, which was 46% in fiscal 2023, to expand modestly on an annual basis, given increased scale. Management continues to talk about pushing margins higher over time, but given that the company's margins are already right near the top of the software group, we think expansion is likely but will be more incremental from here.

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## Risk and Uncertainty Dan Romanoff, CPA, Senior Equity Analyst, 18 Apr 2024

We assign Adobe a Morningstar Uncertainty Rating of High. It faces risks that vary by segment. Creative Cloud's high market share over the last 25 years means a significant portion of high margin revenue is at risk, however slight that risk may be, if a competitor were to make inroads in the space. The damping of cross-selling opportunities with digital experience would likely then be diminished, which would be problematic, as digital experience represents the larger growth opportunity over the next five years, in our view. While Adobe is generally considered a leader in the various categories included under its digital experience umbrella, it did not create any of these categories and does not dominate them the way it does with Creative Cloud.

Adobe has built the digital experience business largely through acquisitions. The acquisitions of Magento and Marketo also pose risks, as those were on the larger side for the company. Any integration missteps could cause delays in new contract signings. Further, material missteps could possibly result in substantial write-downs regarding these (or other) acquisitions. Further, while the margin structure may ultimately be lower in digital experience relative to Creative Cloud, the company has worked to improve margins over time, and we believe Adobe must continue to drive down costs and expand margins to meet investor expectations.

We generally model the publishing segment as modestly declining throughout our projections. This segment is largely composed of legacy products with very high margins. At this point, we believe this cash-cow business could be a potential source of disappointment if it were to begin to more rapidly deteriorate, which is not contemplated in our model.

While we do not see significant environmental, social, and governance risks, Adobe does face strong competition for software engineers on the hiring front as well as risks arising from a potential breach of its data centers.

## Capital Allocation Dan Romanoff, CPA, Senior Equity Analyst, 18 Apr 2024

We assign Adobe an Exemplary Capital Allocation Rating. This reflects our assessments of sound balance sheet, exceptional investment, and appropriate shareholder distributions. We think investments back into the business are most likely to be the key driver of total shareholder returns and are therefore appropriately prioritized over other capital returns such as dividends and buyback, although given the company's prodigious free cash flow generation, we see share buybacks and acquisitions continuing.

The balance sheet is sound, with a material net cash position with gross leverage under 1 times trailing EBITDA. Adobe's capital deployment strategy centers on reinvesting in the business and making generally small tuck-in acquisitions. We expect the balance sheet to remain sound as the company has typically maintained a conservative balance sheet and generates more than enough free cash flow to

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fund growth, buy back shares, and execute its acquisition strategy.

Shantanu Narayen joined the company in 1998 as senior vice president of worldwide product development. He was promoted to COO and then to CEO, a position he has had since 2007. Narayen has steered the company through a variety of critical changes over the years.

Narayen is responsible for initially bundling Photoshop, Illustrator, and other products into what was then known as the Creative Suite in 2003, which he ultimately converted to a subscription model in 2013. While moving to a SaaS model was not a novel move by 2013, it had never been attempted at a company the size of Adobe. After the initial margin and growth hit, both measures improved markedly, with growth remaining strong years after the transition and margins rebounding to pretransition levels within a few years.

While the transition to SaaS was a critical shift for Adobe, the acquisition of Omniture in 2009 represented a new strategic direction for the company. Omniture was purchased for \$1.7 billion and served as the foundation for what was initially Adobe Marketing and is now called the Adobe Analytics Cloud. At its core, Omniture is a web analytics platform. By virtue of moving beyond content creation for creative professionals, the company significantly expanded its total addressable market. Omniture also served as the core of what has become the Adobe Experience Cloud, which is a collection of leading solutions for marketing, analytics, advertising, and commerce, integrated on a single platform. It also allows Adobe to sell a wide variety of marketing technology solutions into a customer base that already thinks of Adobe as the clear leader in content creation. The strategy has paid off handsomely thus far, as momentum in Experience Cloud is undeniable in a market that is loosely 2 times the size of the market for the company's content creation solutions. Management recognizes this and has been directing M&A investment in this direction since the Omniture transaction, including large deals for Magento and Marketo in fiscal 2018. After some uneven performance early on, Narayen stepped into to personally oversee parts of the integration, which we believe improved the process. Adobe has also acquired its way into emerging areas like collaboration and workflow management with the Workfront deal in 2021.

Beyond business model and strategic shifts, Narayen has shrunk the share count and is likely to continue to do so, in our view.

## Analyst Notes Archive

### Adobe Earnings: Guidance Is Needlessly Unclear, but We Believe the Big Picture Is Largely Unchanged

Dan Romanoff, CPA, Senior Equity Analyst, 15 Mar 2024

We are maintaining our fair value estimate of \$610 per share after Adobe reported good first-quarter results, but offered perplexing guidance for the second quarter that is ultimately slightly disappointing.



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The problem with guidance is threefold in our opinion. First, management refused to simply reiterate its full-year outlook for net new annual recurring revenue, which it repeatedly said it “felt really good” about. Second, it implies the second half of the year will be even more back-end-loaded. Third, multiple moving parts made the outlook overly confusing. We think these factors are driving a steep after-hours selloff. However, given recent pricing actions that should roll out in the rest of the world, pending important product launches, and rapid generative artificial intelligence adoption, we are not making material changes to our model and think shares are back in the “attractive” category.

Revenue performance was solid and better than anticipated, with notable strength in digital media. The company’s strategy of creating a broad demand funnel at the top and driving usage to help convert users seems to be working. First-quarter revenue grew 12% year over year in constant currency (11% as reported) to \$5.18 billion, exceeding the top end of guidance at \$5.15 billion. Digital media grew 12% year over year as reported and effectively drove the vast majority of upside in the quarter relative to our model, while digital experience grew 10%. Within digital media, we see Creative Cloud and Acrobat doing well this quarter, with better subscriber growth and good consumption within Firefly for enterprise customers in creative, and strong mobile and Acrobat Sign performance. Many of these elements were present in last quarter’s solid results.

Profitability remains impressive, which is consistent with our long-term model, and therefore changes to our margin assumptions were minimal, even as we modestly lowered our near-term revenue estimates.

## Adobe: Termination of Figma Agreement Does Not Change Adobe’s Leadership Position Dan

Romanoff, CPA, Senior Equity Analyst, 18 Dec 2023

After a 15-month saga of claims and counterclaims with relevant oversight bodies, Adobe and Figma have agreed to terminate their \$20 billion merger agreement. We have consistently viewed the acquisition as strategically strong and financially challenging, so our reaction to the news is similarly mixed. We now expect Adobe to invest resources and take the time to improve its XD solution and introduce key functionality throughout its portfolio, mainly to bring its applications to the web and introduce the ability to have multiple users simultaneously editing a single work product. Adobe’s development team is excellent, so we view this as a matter of time without material margin pressure. From a financial perspective, we think investors will be pleased that Adobe will not be issuing approximately \$10 billion in new shares and utilizing \$10 billion in cash that could otherwise be used to buy back shares. There is no Figma impact contemplated in our model, so no changes are required. Our fair value estimate remains \$610 per share, leaving the stock fairly valued, in our view.

While we do not believe the termination of the Figma deal has a near-term impact on Adobe’s wide moat, it does create a nick in the company’s armor. Therefore, we think Adobe has some wood to chop from a software development and feature addition perspective, as Figma usage greatly outpaces Adobe XD usage. We note XD is one small product within the firm’s industry-leading (and industry defining)

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creative cloud. Even if the deal would have closed, Adobe would still have needed time to port web-based and multiple editor features from Figma to the broader portfolio. Over the last 25 years, we think the company has proven it is up to the task. Lastly, we do not view the \$1 billion breakup fee as material in the context of Adobe's cash hoard of \$7.8 billion and the company's \$272 billion market capitalization.

## Adobe Earnings: Good Period With Soft 2024 Guidance That Is Likely Just Conservative Dan

Romanoff, CPA, Senior Equity Analyst, 14 Dec 2023

Wide-moat Adobe reported fourth-quarter results, including revenue and non-GAAP EPS that exceeded both the top end of guidance and our expectations. On the surface, the outlook for fiscal 2024 is slightly below Street expectations. We attribute this to both conservatism and an imperfect understanding of prior guidance around when the impact of 2023 pricing increases will be felt, which skews more to 2025 than expected. We modestly lowered our near-term estimates based on guidance, while also modestly raising our medium-term growth assumptions, and advanced our model for the year-end. In turn, we increased our fair value estimate to \$610 from \$510 previously. Shares are selling off in the aftermarket, which we assume is based on the outlook and not surprising given the strong run the stock has had. We view shares as approximately fairly valued.

Revenue performance was solid and better than we expected, which we attribute to typically conservative guidance. Fourth-quarter revenue grew 13% year over year in constant currency (12% as reported) to \$5.05 billion, exceeding the top end of guidance at \$5.03 billion. Digital media grew 11% year over year as reported and effectively drove all of the upside in the quarter relative to our model, while digital experience grew 10%. Within digital media, we see both Creative Cloud and Acrobat as having strong quarters, with better subscriber growth and good consumption within Firefly for enterprise customers in creative, and strong mobile and Adobe Sign performance for Acrobat.

Profitability remains strong and is in line with our long-term model. Non-GAAP operating margin was 46.4%, compared with 44.7% a year ago. We have long been impressed with management's ability to drive margins, even in the face of the high investment levels needed to create and train foundational artificial intelligence models. We think margins can grind higher over time but will be limited by Adobe's already stellar profitability levels.

## Adobe: New AI Models Punctuate Analyst Day Featuring a Dizzying Array of Product

Announcements Dan Romanoff, CPA, Senior Equity Analyst, 11 Oct 2023

Wide-moat Adobe hosted its analyst day, which focused on innovation. With no new financial disclosures or an updated framework for guidance, we are maintaining our \$510 per share fair value estimate and see shares as fairly valued after strong performance throughout 2023. Still, the company announced a bevy of new products and general releases of previously announced solutions, as well as

# Adobe Inc ADBE ★★★ 1 Jul 2024 21:24, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment¹
560.01 USD 1 Jul 2024	635.00 USD 14 Jun 2024 02:13, UTC	0.88	246.33 USD Bil 28 Jun 2024	Wide	Large Growth	High	Exemplary	 5 Jun 2024 05:00, UTC

previewing some pending innovations. From a product standpoint, we came away impressed. We think the company's leadership position in serving the creative markets remains intact and we are incrementally confident in our long-term forecast.

Adobe announced new generative AI models, including Firefly Image 2, Firefly Vector, and Firefly Design. These models are all based on Adobe's pillar of trust for digital rights, which continue to believe will be a magnet for enterprise users. Firefly Image 2 represents a leap forward in capabilities and resolution from the original version, which was just released in March 2023. Firefly Vector, as the name implies, is based on vector graphics and is appropriate for Adobe Illustrator, which we think will be a welcome addition to the portfolio. The company also previewed some pending generative AI models, including both video and audio which, in our opinion, were beyond impressive.

Adobe also announced the launch of more than 100 new features throughout its portfolio, many centering around generative AI. Firefly has also now been incorporated into Adobe Express. We think the addition of next-generation AI capabilities further cements the company's leadership position.

The closest Adobe came to a financial update was to note it is investing in AI capabilities and product innovation, and that management believes the company can grow through adding new users, and expanding relationships through upselling and cross-selling, while still increasing operating margins. Given management's track record, we are on board with their assessment.

## **Adobe Earnings: Creative Cloud Drives Strength While Firefly AI Begins To Produce Revenue** Dan Romanoff, CPA, Senior Equity Analyst, 15 Sep 2023

Wide-moat Adobe reported good third-quarter results, including revenue and non-GAAP EPS that exceeded the top end of guidance and our expectations along with it. We characterize management's fourth-quarter guidance as in line with investor expectations, which given recent strength and with Firefly AI now generating revenue, could be interpreted as a slight disappointment. We think this mentality mainly misses the mark given such a short-term focus. Further, management will provide fiscal 2024 targets within its fourth-quarter results in December so in-line guidance for one quarter matters less to us here. To begin to accommodate recently announced price increases in the area of 10% for various Creative Cloud and single app instances, we are modestly raising our growth estimates over the next several years. Our fair value estimate therefore increases to \$510, from \$485 previously, although after a strong run, we see shares as fairly valued.

Adobe is juggling many balls at present, with the recent general availability of Firefly along with several other solutions, price increases, the looming Figma acquisition, and other changes on the pricing and packaging front. We see these as uniformly positive for the company, and we expect the company to remain the clear leader in the creative market as a result. We will be looking for more details on innovation, bundling, and growth opportunities at Adobe MAX, Adobe Summit, and fourth-quarter

# Adobe Inc ADBE ★★★ 1 Jul 2024 21:24, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment <sup>1</sup>
560.01 USD 1 Jul 2024	635.00 USD 14 Jun 2024 02:13, UTC	0.88	246.33 USD Bil 28 Jun 2024	Wide	Large Growth	High	Exemplary	 5 Jun 2024 05:00, UTC

results, which are all on the horizon. Net new creative ARR was \$464 million in the quarter, compared with guidance of \$410 million.

Third-quarter revenue grew 13% year over year in constant currency (10% as reported) to \$4.89 billion, exceeding the top end of guidance at \$4.87 billion. Digital media grew 11% year over year as reported and effectively drove all of the upside in the quarter relative to our model, while digital experience grew 10%. Within digital media, we see both Creative Cloud and Acrobat as having strong quarters.

### Adobe Earnings: Strong Results, Uptick in Guidance, and Clearer AI Roadmap Drive Estimates Higher

Dan Romanoff, CPA, Senior Equity Analyst, 16 Jun 2023

Wide-moat Adobe reported an excellent second quarter, including revenue and non-GAAP EPS that exceeded our expectations as well as the top end of guidance. The firm also raised its full-year outlook for total revenue and non-GAAP EPS, as management anticipates an uptick in both revenue and annual recurring revenue, or ARR, in both Creative and Document Cloud from previous estimates. The impressive results, coupled with our belief that management is reinforcing its leadership position with Firefly AI, lead to slight increases in our assumption for both margins and revenue over the intermediate term, which result in our fair value estimate increasing to \$485 per share, from \$425 previously. Despite this increase, we view shares as fairly valued.

Second-quarter revenue grew 13% year over year in constant currency (10% as reported) to \$4.82 billion, exceeding the top end of guidance at \$4.78 billion. Strength was broad-based in segments and geographies with digital experience revenue, or DX, growing 12% year over year as demand remains high for the Experience platform and native applications. The digital media segment remains robust as well, as segment revenue grew 10% year over year as reported.

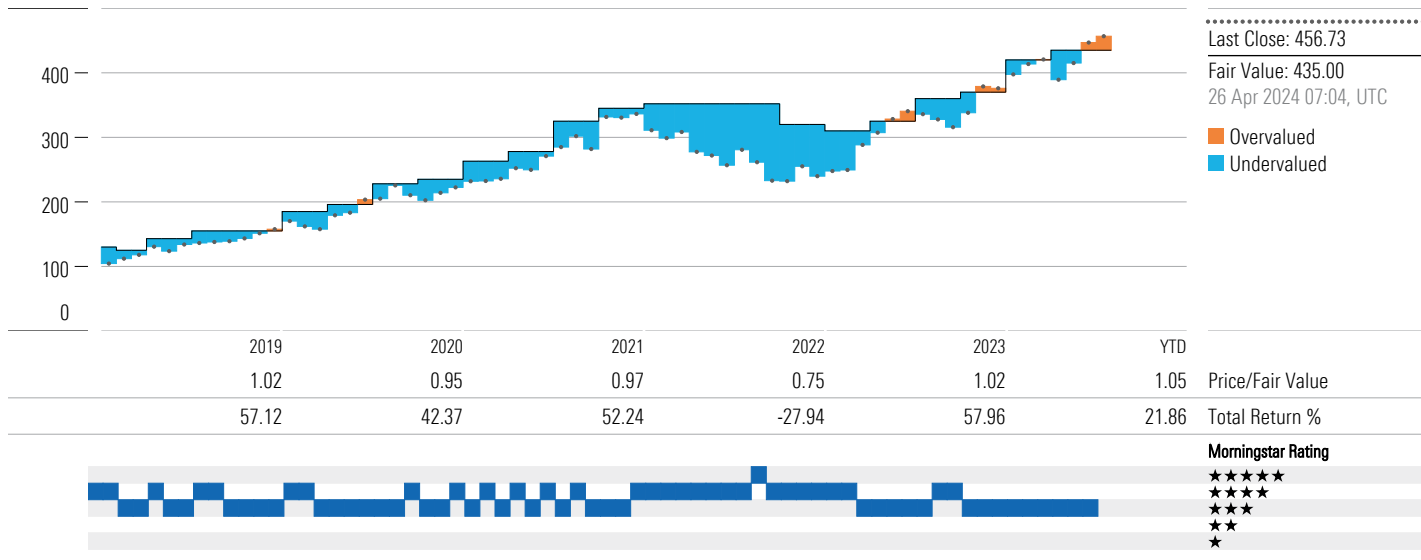
Profitability was again in line with our long-term model, with non-GAAP operating margin coming in at 45.3%, compared with 45.0% a year ago, and 45.8% last quarter. We have long been impressed with management's ability to drive margins, even in the face of high investment levels.

Unsurprisingly, artificial intelligence was the focus of the call, building off Adobe's recent Summit announcements. Firefly in particular drew attention, with management focusing on the potential for seamless integration into existing products with integration announcements for Photoshop, Illustrator, and Express already made. Since the Firefly Beta was launched in March, users have created over half a billion generations with creation from Photoshop being 80 times higher than Adobe had projected. ■■

# Adobe Inc ADBE ★★★ 1 Jul 2024 21:24, UTC

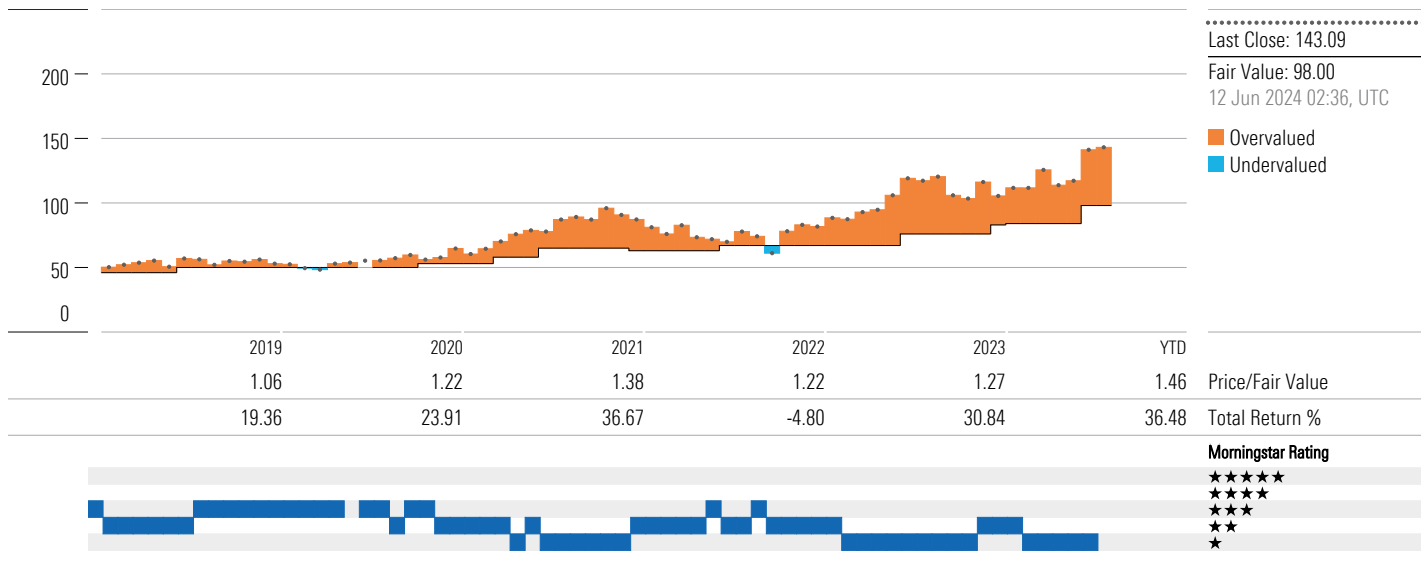
## Competitors Price vs. Fair Value

### Microsoft Corp MSFT



Total Return % as of 1 Jul 2024. Last Close as of 1 Jul 2024. Fair Value as of 26 Apr 2024 07:04, UTC.

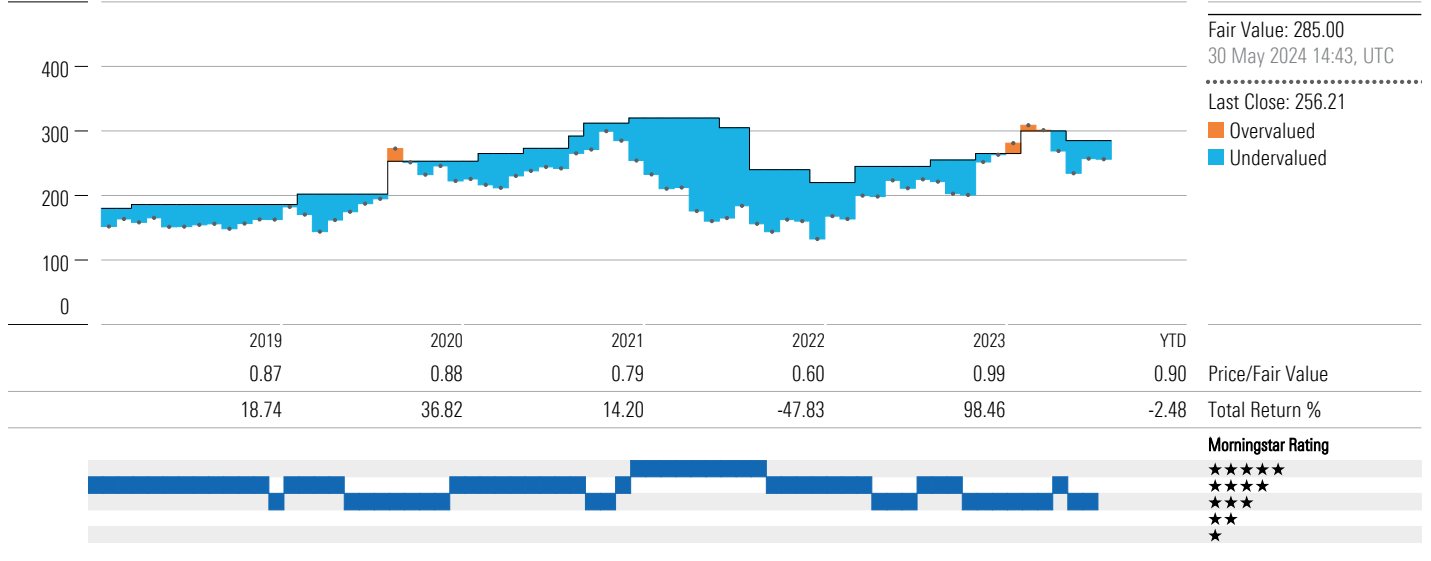
### Oracle Corp ORCL



Total Return % as of 1 Jul 2024. Last Close as of 1 Jul 2024. Fair Value as of 12 Jun 2024 02:36, UTC.

# Adobe Inc ADBE ★★★ 1 Jul 2024 21:24, UTC

## Salesforce Inc CRM



Total Return % as of 1 Jul 2024. Last Close as of 1 Jul 2024. Fair Value as of 30 May 2024 14:43, UTC.

# Adobe Inc ADBE ★★★ 1 Jul 2024 21:24, UTC

<b>Last Price</b> 560.01 USD 1 Jul 2024	<b>Fair Value Estimate</b> 635.00 USD 14 Jun 2024 02:13, UTC	<b>Price/FVE</b> 0.88	<b>Market Cap</b> 246.33 USD Bil 28 Jun 2024	<b>Economic Moat™</b> Wide	<b>Equity Style Box</b> Large Growth	<b>Uncertainty</b> High	<b>Capital Allocation</b> Exemplary	<b>ESG Risk Rating Assessment†</b> 5 Jun 2024 05:00, UTC
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## Morningstar Historical Summary

### Financials as of 31 May 2024

Fiscal Year, ends 30 Nov	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
Revenue (USD Bil)	4.15	4.80	5.85	7.30	9.03	11.17	12.87	15.79	17.61	19.41	10.49	20.43
Revenue Growth %	2.3	15.6	22.1	24.7	23.7	23.7	15.2	22.7	11.5	10.2	10.8	10.9
EBITDA (USD Mil)	735	1,277	1,837	2,538	3,229	4,119	5,049	6,606	6,976	7,784	3,392	7,438
EBITDA Margin %	17.7	26.6	31.4	34.8	35.8	36.9	39.2	41.9	39.6	40.1	32.3	36.4
Operating Income (USD Mil)	433	903	1,494	2,168	2,840	3,268	4,237	5,802	6,098	6,650	3,792	7,232
Operating Margin %	10.4	18.8	25.5	29.7	31.5	29.3	32.9	36.8	34.6	34.3	36.2	35.4
Net Income (USD Mil)	268	630	1,169	1,694	2,591	2,951	5,260	4,822	4,756	5,428	2,193	5,079
Net Margin %	6.5	13.1	20.0	23.2	28.7	26.4	40.9	30.6	27.0	28.0	20.9	24.9
Diluted Shares Outstanding (Mil)	508	507	504	501	498	492	485	481	471	459	454	457
Diluted Earnings Per Share (USD)	0.53	1.24	2.32	3.38	5.20	6.00	10.83	10.02	10.10	11.82	4.83	11.11
Dividends Per Share (USD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### Valuation as of 28 Jun 2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Price/Sales	8.9	9.9	8.9	12.0	12.5	14.5	18.8	17.3	9.0	14.1	12.4	12.4
Price/Earnings	144.9	75.8	44.4	51.8	43.5	54.9	46.1	56.5	33.3	50.5	50.0	50.0
Price/Cash Flow	28.7	32.5	23.6	30.1	27.9	36.6	42.4	37.7	20.2	37.5	38.5	38.5
Dividend Yield %	—	—	—	—	—	—	—	—	—	—	—	—
Price/Book	5.4	6.7	6.9	10.2	11.8	15.1	18.1	18.2	11.1	16.4	16.6	16.6
EV/EBITDA	46.2	35.0	26.1	32.4	34.4	38.6	47.2	40.6	22.1	34.4	0.0	0.0

### Operating Performance / Profitability as of 31 May 2024

Fiscal Year, ends 30 Nov	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
ROA %	2.5	5.6	9.6	12.4	15.6	14.9	23.4	18.7	17.5	19.1	7.3	17.6
ROE %	4.0	9.1	16.2	21.3	29.1	29.7	44.2	34.4	33.0	35.5	14.0	34.2
ROIC %	3.6	7.9	13.0	17.3	21.7	19.4	32.6	26.2	25.1	27.0	10.8	26.0
Asset Turnover	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.4	0.7

### Financial Leverage

Fiscal Year, ends 30 Nov	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Debt/Capital %	11.9	21.4	20.3	18.2	30.6	8.6	25.8	23.6	22.4	19.5	23.4	—
Equity/Assets %	62.8	59.7	58.5	58.2	49.9	50.7	54.6	54.3	51.7	55.5	49.5	—
Total Debt/EBITDA	2.1	1.5	1.0	0.7	1.3	1.0	0.9	0.7	0.7	0.5	1.8	—
EBITDA/Interest Expense	12.3	19.9	26.1	34.1	36.3	26.2	43.5	58.5	62.3	68.9	49.9	60.5

## Morningstar Analyst Historical/Forecast Summary as of 13 Jun 2024

Financials	Estimates					Forward Valuation	Estimates					
	2022	2023	2024	2025	2026		2022	2023	2024	2025	2026	
Fiscal Year, ends 30 Nov 2023												
Revenue (USD Mil)	17,606	19,409	21,443	23,904	26,724	Price/Sales	9.1	14.3	11.6	10.4	9.3	
Revenue Growth %	11.5	10.2	10.5	11.5	11.8	Price/Earnings	25.2	38.0	30.7	27.0	23.2	
EBITDA (USD Mil)	6,954	7,522	7,672	9,752	10,770	Price/Cash Flow	—	—	—	—	—	
EBITDA Margin %	39.5	38.8	35.8	40.8	40.3	Dividend Yield %	—	—	—	—	—	
Operating Income (USD Mil)	6,098	6,650	6,793	8,843	9,834	Price/Book	11.6	17.0	14.3	11.3	8.8	
Operating Margin %	34.6	34.3	31.7	37.0	36.8	EV/EBITDA	22.9	36.5	32.1	25.3	22.9	
Net Income (USD Mil)	6,457	7,377	8,203	9,143	10,540							
Net Margin %	36.7	38.0	38.3	38.3	39.4							
Diluted Shares Outstanding (Mil)	471	459	449	441	437							
Diluted Earnings Per Share(USD)	13.71	16.07	18.26	20.76	24.11							
Dividends Per Share(USD)	0.00	0.00	0.00	0.00	0.00							

# Adobe Inc ADBE ★★★ 1 Jul 2024 21:24, UTC

<b>Last Price</b> 560.01 USD 1 Jul 2024	<b>Fair Value Estimate</b> 635.00 USD 14 Jun 2024 02:13, UTC	<b>Price/FVE</b> 0.88	<b>Market Cap</b> 246.33 USD Bil 28 Jun 2024	<b>Economic Moat™</b> Wide	<b>Equity Style Box</b> Large Growth	<b>Uncertainty</b> High	<b>Capital Allocation</b> Exemplary	<b>ESG Risk Rating Assessment<sup>1</sup></b> 5 Jun 2024 05:00, UTC
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## ESG Risk Rating Breakdown

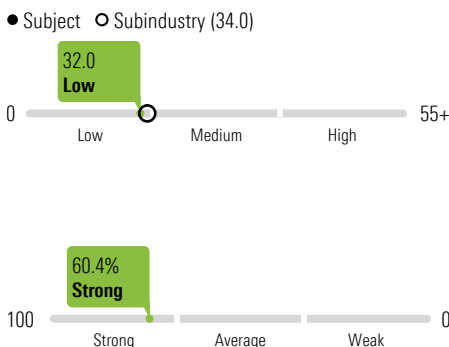
### Exposure

Company Exposure <sup>1</sup>	32.0	
- Manageable Risk	29.8	
<b>Unmanageable Risk<sup>2</sup></b>	<b>2.2</b>	

### Management

Manageable Risk	29.8	
- Managed Risk <sup>3</sup>	18.0	
<b>Management Gap<sup>4</sup></b>	<b>11.8</b>	

**Overall Unmanaged Risk 14.0**



- ▶ Exposure represents a company's vulnerability to ESG risks driven by their business model
- ▶ Exposure is assessed at the Subindustry level and then specified at the company level
- ▶ Scoring ranges from 0-55+ with categories of low, medium, and high-risk exposure
- ▶ Management measures a company's ability to manage ESG risks through its commitments and actions
- ▶ Management assesses a company's efficiency on ESG programs, practices, and policies
- ▶ Management score ranges from 0-100% showing how much manageable risk a company is managing

## ESG Risk Rating



ESG Risk Ratings measure the degree to which a company's value is impacted by environmental, social, and governance risks, by evaluating the company's ability to manage the ESG risks it faces.

1. A company's Exposure to material ESG issues 2. Unmanageable Risk refers to risks that are inherent to a particular business model that cannot be managed by programs or initiatives 3. Managed Risk = Manageable Risk multiplied by a Management score of 60.4% 4. Management Gap assesses risks that are not managed, but are considered manageable 5. ESG Risk Rating Assessment = Overall Unmanaged Risk = Management Gap plus Unmanageable Risk

## ESG Risk Rating Assessment<sup>5</sup>



ESG Risk Rating is of Jun 05, 2024. Highest Controversy Level is as of Jun 08, 2024. Sustainalytics Subindustry: Enterprise and Infrastructure Software. Sustainalytics provides Morningstar with company ESG ratings and metrics on a monthly basis and as such, the ratings in Morningstar may not necessarily reflect current Sustainalytics' scores for the company. For the most up to date rating and more information, please visit: [sustainalytics.com/esg-ratings/](https://sustainalytics.com/esg-ratings/).

## Peer Analysis 05 Jun 2024

Peers are selected from the company's Sustainalytics-defined Subindustry and are displayed based on the closest market cap values

Company Name	Exposure		Management		ESG Risk Rating	
<b>Adobe Inc</b>	32.0   Low	0 —●— 55+	60.4   Strong	100 —●— 0	14.0   Low	0 —●— 40+
Microsoft Corp	33.8   Low	0 —●— 55+	62.4   Strong	100 —●— 0	14.2   Low	0 —●— 40+
Salesforce Inc	33.0   Low	0 —●— 55+	60.7   Strong	100 —●— 0	14.4   Low	0 —●— 40+
Oracle Corp	33.8   Low	0 —●— 55+	60.6   Strong	100 —●— 0	14.7   Low	0 —●— 40+
Digital Turbine Inc	32.6   Low	0 —●— 55+	41.2   Average	100 —●— 0	20.3   Medium	0 —●— 40+



# Appendix

## Historical Morningstar Rating

### Adobe Inc ADBE 1 Jul 2024 21:24, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	—	—	★★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★
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
★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★★	★★★★	★★★★

### Microsoft Corp MSFT 1 Jul 2024 21:24, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	—	—	★★★	★★★	★★★	★★★	★★★	★★★	★★★
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
★★★	★★★	★★★	★★★★	★★★★	★★★	★★★	★★★★	★★★	★★★	★★★★	★★★★

### Oracle Corp ORCL 1 Jul 2024 21:24, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	—	—	★	★	★	★	★	★★	★★
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
★★★★	★★★★	★★★★	★★★★	★★★★	★★	★★	★★	★★	★★	★★	★★★★

**Salesforce Inc CRM** 1 Jul 2024 21:24, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	—	—	★★★	★★★	★★★★	★★★	★★★	★★★	★★★
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
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★

# 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, in-depth 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 short-term market-price movements), but we believe these negatives are mitigated by deep analysis and our long-term 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 re-

turns 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.

### 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 de-

rive 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 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 any-

## Morningstar Equity Research Star Rating Methodology



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thing 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	★★★★★ Rating	★ Rating
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.

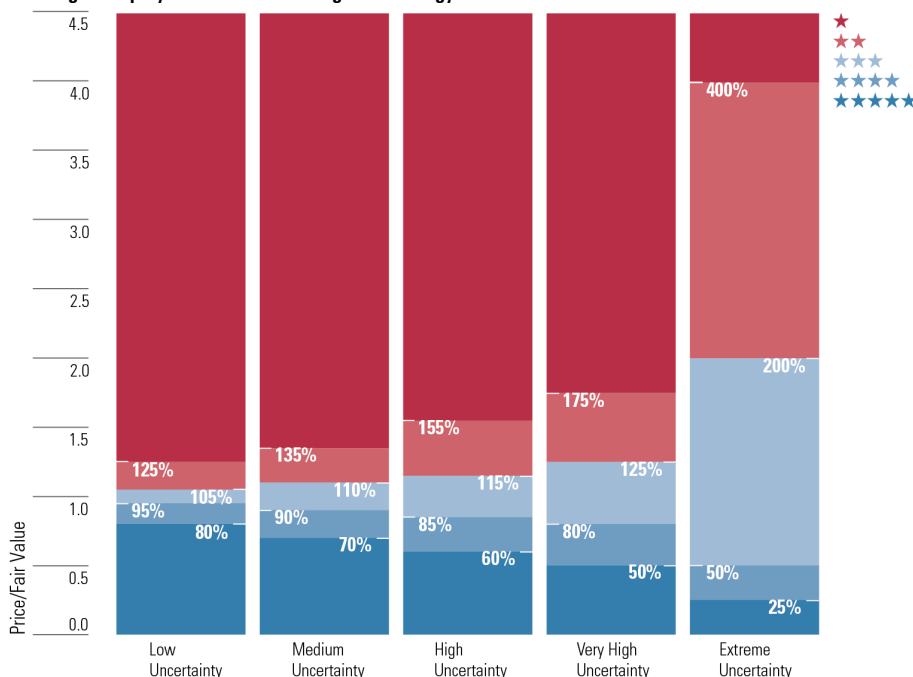
## 4. Market Price

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.

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

## Morningstar Star Rating for Stocks

Morningstar Equity Research Star Rating Methodology



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 ad-

justed 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.

**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 compan-

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ies' 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.

**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.

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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/](https://sustainalytics.com/esg-ratings/)

Ratings should not be used as the sole basis in evaluating a company or security. Ratings involve unknown risks and uncertainties which may cause our expectations not to occur or to differ significantly from what was expected and should not be considered an offer or solicitation to buy or sell a security.

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