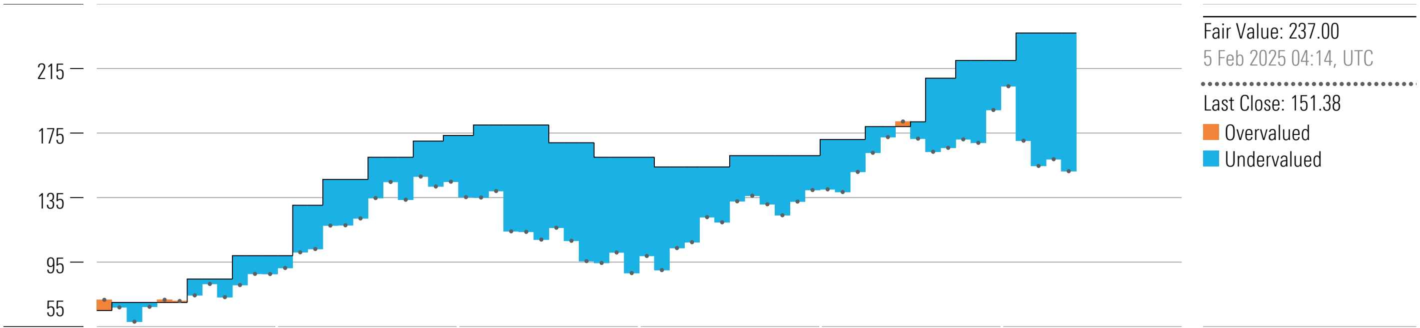
Morningstar Equity Analyst Report | Report as of 8 May 2025 02:42, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NASDAQ - ALL MARKETS

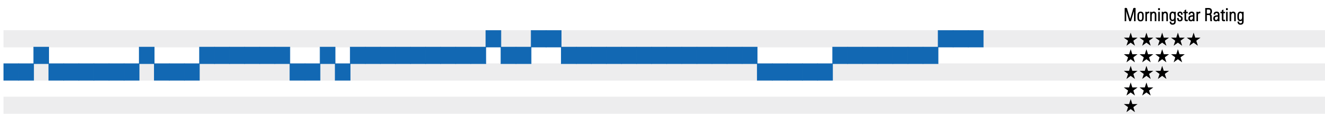
Alphabet Inc Class A GOOGL ★★★★★ 7 May 2025 21:28, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
151.38 USD 7 May 2025	237.00 USD 5 Feb 2025 04:14, UTC	0.64	1.84 USD Tril 7 May 2025	Wide	Large Value	Medium	Exemplary	2 Apr 2025 05:00, UTC

Price vs. Fair Value



2020	2021	2022	2023	2024	YTD	
0.89	0.83	0.55	0.87	0.86	0.64	Price/Fair Value
30.85	65.30	-39.09	58.32	35.94	-19.93	Total Return %



Total Return % as of 07 May 2025. Last Close as of 07 May 2025. Fair Value as of 5 Feb 2025 04:14, UTC.

Contents

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

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

Alphabet: Apple Search Executive's Testimony Makes Investors Restive About Search's Future

Analyst Note Malik Ahmed Khan, CFA, Equity Analyst, 8 May 2025

On May 7, Apple's senior vice president of services, Eddy Cue, testified in the Department of Justice's lawsuit against Alphabet that Apple was considering a Safari revamp which would include an end to its long-term Google Search partnership. Also, he noted April Safari search queries were down.

Why it matters: With around 20% market share of the global mobile browser market, Safari's default placement of Google Search has been at the center of the DOJ antitrust lawsuit against Google. Any change in this partnership would be material to both Alphabet and Apple.

- Alphabet's revenue sharing agreement with Apple costs the firm around $20 billion annually. Part of this payment is for the default placement of Google Search as Safari's search engine, while the remaining portion is a cut of ad revenue generated by Safari searches.
- We believe Apple is unlikely to end its RSA with Alphabet without having a plan to claw back the $20 billion. In the long term, we could see an equilibrium where Google is among a list of options users can choose from, with each search provider having a nonexclusive RSA with Apple.

The bottom line: We maintain our $237 fair value estimate for wide-moat Alphabet. We think investors' reaction to Eddy Cue's comments is overblown. While we expect queries to migrate over to artificial intelligence search bots, we continue to model Google holding on to the vast majority of monetizable queries.

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Sector	Industry
Communication Services	Internet Content & Information

Business Description

Alphabet is a holding company that wholly owns internet giant Google. The California-based company derives slightly less than 90% of its revenue from Google services, the vast majority of which is advertising sales. Alongside online ads, Google services houses sales stemming from Google's subscription services (YouTube TV, YouTube Music among others), platforms (sales and in-app purchases on Play Store), and devices (Chromebooks, Pixel smartphones, and smart home products such as Chromecast). Google's cloud computing platform, or GCP, accounts for roughly 10% of Alphabet's revenue with the firm's investments in up-and-coming technologies such as self-driving cars (Waymo), health (Verily), and internet access (Google Fiber) making up the rest.

- We don't view Google as a passive observer in this dynamic search space. The firm's investments in AI Overviews, AI Mode, and Circle to Search are showing promise. While we expect some search query migration, we believe investors are pricing in material value destruction in the search business.
- We do, however, envision Google Search growing at a lower compound annual growth rate (6%) than the broader digital advertising market (10%) over the next five years due to a mixture of AI-infused search engines and fewer ads being placed on text-based search.

Business Strategy & Outlook Malik Ahmed Khan, CFA, Equity Analyst, 30 Oct 2024

We view Alphabet as a conglomerate of stellar businesses. With solutions ranging from advertising to cloud computing and self-driving cars, Alphabet has built itself into a true technology behemoth, generating tens of billions of dollars in free cash flow annually. While antitrust concerns around Alphabet's core search business have made headlines, we retain our confidence in Alphabet's overall strength and foresee the firm remaining at the forefront of a variety of verticals including search, artificial intelligence, video, and cloud computing.

Alphabet's core strategy is to preserve its strong advertising business, with the majority of advertising revenue coming from Google Search. To that end, the firm has invested considerably over the years to improve its search capabilities, ensuring that its search engine remains deeply embedded in how hundreds of millions of users access information on the web.

We see the firm's investments in AI as a continuation of this effort to safeguard its core product, Google Search. We believe that by leveraging generative AI, Google can not only improve its own search quality via features such as AI overviews, but also improve its advertising business by augmenting its ability to target customers with relevant ads.

On the antitrust front, we don't foresee a material deterioration in Google's search business resulting from governmental or judicial intervention. While there is a range of possible outcomes depending on what remedial steps are imposed, we think it is likely that Google will maintain its leadership position in search and text-based advertising in the long term.

Beyond search, we have a positive outlook on Alphabet's cloud computing platform, Google Cloud Platform. We believe increased migration of workloads to the public cloud and an uptick in the deployment and usage of AI are key growth drivers for GCP over the next five years. At the same time, we believe that as GCP scales, it will become a more important part of Alphabet's overall business, both from a top-line and profitability perspective.

Bulls Say Malik Ahmed Khan, CFA, Equity Analyst, 5 Feb 2025

- Alphabet's core advertising business is deeply entrenched in advertising budgets, allowing the firm to benefit from a secular increase in digital advertising spending

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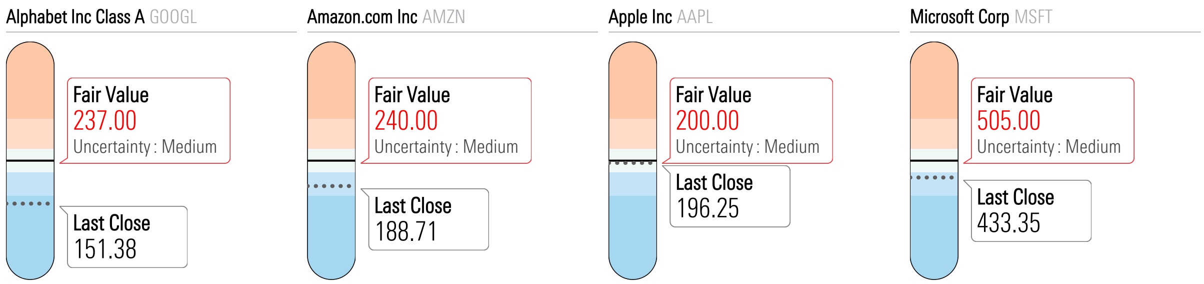
Competitors



	Alphabet Inc Class A GOOGL	Amazon.com Inc AMZN	Apple Inc AAPL	Microsoft Corp MSFT
Economic Moat	Wide	Wide	Wide	Wide
Currency	USD	USD	USD	USD
Fair Value	237.00 5 Feb 2025 04:14, UTC	240.00 7 Feb 2025 06:46, UTC	200.00 1 Nov 2024 00:07, UTC	505.00 1 May 2025 01:56, UTC
1-Star Price	319.95	324.00	270.00	681.75
5-Star Price	165.90	168.00	140.00	353.50
Assessment	Undervalued 7 May 2025	Undervalued 7 May 2025	Fairly Valued 7 May 2025	Undervalued 7 May 2025
Morningstar Rating	★★★★★7 May 2025 21:28, UTC	★★★★7 May 2025 21:28, UTC	★★★7 May 2025 21:28, UTC	★★★★7 May 2025 21:27, UTC
Analyst	Malik Ahmed Khan, Equity Analyst	Dan Romanoff, Senior Equity Analyst	William Kerwin, Senior Equity Analyst	Dan Romanoff, Senior Equity Analyst
Capital Allocation	Exemplary	Exemplary	Exemplary	Exemplary
Price/Fair Value	0.64	0.79	0.98	0.86
Price/Sales	5.56	3.06	7.54	11.98
Price/Book	5.75	6.42	44.40	10.01
Price/Earning	19.80	31.51	30.92	33.34
Dividend Yield	0.53%	0.00%	0.51%	0.73%
Market Cap	1,836.96 Bil	2,003.41 Bil	2,931.16 Bil	3,220.89 Bil
52-Week Range	140.53—207.05	151.61—242.52	169.21—260.10	344.79—468.35
Investment Style	Large Value	Large Blend	Large Blend	Large Blend

- The firm's advertising business generates substantial cash flows that it can reinvest in growth areas such as GCP, AI-infused search, and aspirational projects such as Waymo.
- Alphabet has a huge opportunity in the lucrative public cloud space as a key cloud vendor to enterprises looking to digitize their workloads.

Bears Say Malik Ahmed Khan, CFA, Equity Analyst, 5 Feb 2025

- While Alphabet is seeking to diversify its business away from search, text-based advertising remains the largest contributor to the firm's top line creating a concentration risk.
- Alphabet's continued investments in new, often unproven technologies, via its Other Bets business have been a drag on cash flows.
- Regulators around the world are keying in on Alphabet's search dominance and could upend the search market through the imposition of deep, structural changes in the search space.

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Economic Moat Malik Ahmed Khan, CFA, Equity Analyst, 21 Aug 2024

We believe Alphabet merits a wide economic moat rating owing to the intangible assets, network effect, cost advantage, and customer switching costs that permeate a variety of businesses that it owns.

While Alphabet's own reporting operating segments are split up in Google Services, Google Cloud, and Other Bets, we believe that for the purposes of analyzing the firm's economic moat and durable competitive advantage, a different split is more appropriate. In our moat analysis, we look at Google Search, YouTube, Google Cloud, Android and Google Play, Devices, and Other Bets (which includes Google's aspirational projects such as self-driving vehicles and internet access).

Google Search

We assign a wide moat rating to Alphabet's premier offering, its GSE, or general search engine, Google Search. We believe Google Search has built significant intangible assets, primarily via its brand, and a potent network effect that allows Alphabet to be the dominant player in the GSE space, with an engaged audience of both users and advertisers.

Google Search's dominance cannot be overstated. The firm's search engine has garnered and maintained ubiquity in the internet era to the degree that Merriam Webster recognizes "google" as a verb which is interchangeable with search. To "google" something is to search for something on the World Wide Web. Over the last two decades, Google Search has cemented its place as the most advanced GSE on the market, controlling more than 80% of the general search market since 2009 – a market share number that shoots past 90% when looking at only mobile devices.

Google Search's intangible assets are related to the firm's brand, the general recognition of its GSE as the most advanced out there, and technological expertise when it comes to search algorithms, pricing mechanisms, and gathering valuable data for its advertising client base. Google Search's intangible assets also bolster its network effect, as more users engage with Google Search on account of its search superiority, it can monetize those users by selling better ads, which then allows the firm to invest more in Google Search to improve its GSE, while also collecting better signals for its advertising clients.

Google Search simultaneously solves two key problems for its main stakeholders, users and advertisers. A user wants access to high-quality information in a fast, seamless manner. Google provides this by keeping its products free and by constantly adding more functionality to its offering such as live sports scores, shopping and travel tabs, and multimodal search options among other features. Google collects various signals a user provides such as clicks, time spent on a page, and time spent hovering over a link to inform its advertising business which sells real estate on the Google Search results page to advertisers.

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Advertisers, on the other hand, want users to purchase their products/services. They have a finite amount of dollars to drive these sales and care deeply about the return on ad spending, or ROAS. When a user searches for a specific keyword, such as “QLED Television,” on Google Search, there is a high likelihood that the user is interested in buying a TV. In advertising nomenclature, by searching for a specific keyword, a user has signaled their intent. By getting ads in front of this hypothetical user, advertisers can convert the intent of the user into action, the purchase of a TV. As a result, Google Search is a core part of almost every digital advertising campaign, underscoring the high ROAS advertisers are able to generate via Google Search.

Alphabet has successfully monetized its Google Search offering, with the firm generating tens of billions of dollars in profits annually. We believe the firm’s monetization also betrays a true sense of pricing power that stems from its intangible assets and network effect. By using a modified version of a second-price auction model, Google Search conducts auctions of the real estate on its main display page, with advertisers bidding on specific keywords. The auction itself is conducted in the milliseconds between a user search and the resulting display of results. Google has leveraged a series of “intentional pricing” maneuvers to increase bids and generating additional sales from its search engine. With its main competitor, Microsoft Bing, struggling to attract a critical mass of users, Google exercises significant pricing power in the general search market.

Google Search’s dominance within the search market is also bolstered by a series of exclusive contracts Alphabet has signed with device manufacturers, such as Apple and Samsung, and third-party browsers, such as Mozilla Firefox. While these exclusive contracts are subject to increased regulatory scrutiny, they continue to channel significant traffic to Google Search, with approximately 50% of all general search inquiries in the United States stemming from a search access point covered by an exclusive contract. Alphabet, in return, offers a portion of its advertising revenue generated by these search points via a revenue sharing agreement, or RSA. While anti-trust pressures may threaten Google Search’s hold on the general search market, we don’t believe there exists a scenario where an anti-trust remedy pushes Google Search’s returns on invested capital below its cost of capital.

When thinking of Google Search’s placement as the default search engine for Apple and Android devices, it is important to delineate between the impact of default settings and Google Search’s own product capabilities that bring users to its GSE by choice. One helpful illustration of the latter can be found in the PC market. While the majority of PCs in the world carry the Windows operating system which has Microsoft Edge preloaded on to them, the vast majority of Windows users opt to install Google Chrome and leverage Google Search instead of using Bing on Microsoft Edge.

Other competitive threats to Google Search come from specialized vendors such as Amazon, Meta, TikTok, Yelp and so forth. While Alphabet certainly competes with all of the above in various verticals such as retail and travel, Google Search's dominance in navigational queries (queries to go to specific website) and the general search market is unfazed by these specialized vendors. We also see them as competing in a slightly different market, with no reasonable user viewing Google Search and Meta as substitutes, for example. Similarly, advertisers view specialized vendors such as Amazon and Meta as complementary to ad spending on Google Search, with text-based ad budgets often controlled by different teams than Amazon/Meta ad placements.

Also, while generative search engines, such as SearchGPT by OpenAI, threaten to upend the general search market, we don't see those competitive threats resulting in a material deterioration of Google Search's excess returns. Irrespective of whether the new entrant is a well-capitalized player such as Apple or a venture-backed startup, the costs of building a GSE are cost-prohibitive. The new entrant has to simultaneously build the infrastructure to support a GSE, which requires billions of dollars, while simultaneously attracting users and advertisers. After the initial infrastructure and customer acquisition, the entrant then needs to spend billions of dollars maintaining the GSE and investing in new capabilities such as better ad targeting, signal collection, and data storage. All of these costs, in sum, provide a structural barrier to competition for Google Search which has scale that allows for cost-effective exposure to a large set of users and advertisers. Further, we believe Google's own generative AI offerings, such as Gemini, can avert any major customer/advertiser churn.

YouTube

We assign YouTube a wide moat rating owing to the business' strong network effect and intangible assets. Wrapped within Alphabet, we view YouTube as a streaming giant with an impressive brand, user base, and burgeoning advertising and subscription businesses.

YouTube, acquired by Alphabet in 2006 is one of the largest video sharing/streaming platforms in the world. YouTube's scale is staggering. The platform has more than 2 billion monthly users with 1 billion hours of YouTube content viewed daily on TV alone. YouTube has parlayed its ubiquity to enter the subscription business as well. The platform's subscriptions, including YouTube Music and YouTube Premium, have more than 100 million subscribers while YouTube TV, an offering that resembles the traditional TV bundle, also boasts more than 8 million subscribers.

We believe YouTube intangible assets, such as its large monetizable user base and brand, bolster its network effect. The platform's massive audience attracts creators seeking to monetize their videos, which, in turn, fuels more watch time. While more than 99% of YouTube's user base consists of free users, these users are critical for the platform's ad sales. By running a profitable advertising business, YouTube is able to invest in content, such as the seven-year deal to host the NFL Sunday Ticket, and boost its subscription offerings such as YouTube TV.

YouTube also offers Alphabet access to the top of the marketing funnel, allowing companies to create brand awareness that can spark a desire and intent to purchase a product. As a result, YouTube is a key part of Alphabet's overall advertising business as it is able to reach users in a medium very different than text-based search.

While the market landscape for YouTube is considerably more competitive than Google Search, we believe the firm's impressive ability to expand its reach across devices (phones, TVs, desktop) and its ability to innovate (creation of YouTube Shorts) should allow it to profitability run its platform and generate returns in excess of its cost of capital for the foreseeable future.

Google Cloud

While Alphabet's operating segments lump Google Workspace (productivity applications like Google Drive, Sheets, Docs) together with Google Cloud Platform, or GCP, we estimate that the vast majority of sales within Google Cloud stem from GCP, Alphabet's public cloud infrastructure arm. As a result, when investigating the competitive advantage for Google Cloud, we focus primarily on GCP.

We believe GCP merits a wide moat supported by high customer switching costs and cost advantages. While the Alphabet's public cloud platform is markedly smaller than Amazon's AWS or Microsoft's Azure, it is the third-largest public cloud vendor, controlling more than 10% of this lucrative market.

The cost advantages of GCP are obvious. The firm's continued investments in its cloud infrastructure, including AI, have enabled it to be one of three firms that have a global public cloud footprint. As compared with a customer building out their private cloud infrastructure, GCP, much like AWS and Azure, offers a significantly cheaper route that is analogous to renting real estate on GCP, helping the customer avoid massive capital expenditures associated with a private data center buildout. Further, as Alphabet has continued to invest in GCP, the economics of the business have improved dramatically. After generating substantial losses in prior years, GCP has since turned profitable, with improving profitability on the horizon. As the firm expands its customer base, by typically offering better prices than AWS and Azure, it can continue to spread costs across its data center footprint, allowing its existing cost advantage to get stronger.

Another source of GCP's cost advantage has been Alphabet's investment in its own proprietary semiconductors, its TPU, or tensor processing unit. In layman's terms, TPUs are custom-designed AI accelerators that can be leveraged for training and inference in the context of large AI models. While customers of GCP can opt to use third-party GPUs for their AI-related cloud workloads, all of Google's own AI development, such as the development of large language models, or LLMs, is done exclusively on its own TPUs. This represents a cost advantage over other peers using third-party GPUs to train their LLMs. While Microsoft and Amazon have been investing in their own AI chips, similar to Alphabet's TPUs, smaller public cloud vendors and customers choosing between public cloud or building their own data centers will likely remain cost-disadvantaged against GCP in this regard.

We also believe GCP benefits from high customer switching costs. Porting workloads from on-premises to the public cloud is not an easy lift, often requiring companies to rewire their IT infrastructure to allow for the transfer. This digital transformation is fraught with handover risk and cumbersome change management. Once a company, typically a large enterprise, has rolled into GCP, the costs of leaving GCP are significant. While data egress fees have been coming down throughout the public cloud space, the time and expense of application and database integrations has not. Similar to AWS and Azure, we think that the likelihood of customers changing mission-critical technology infrastructure is low. For context, when forecasting GCP's growth, we don't forecast AWS or Azure being customer donors to GCP, showcasing the high switching costs associated with public cloud vendors.

Android and Google Play

We believe Alphabet's Android operating system and Google Play, its application store present on all Android devices, enjoys a wide moat stemming from intangible assets and a network effect.

Android is the operating system for the majority of the world's smartphones with more than two-thirds of all smartphones in the world running it. Virtually all smartphones, other than those manufactured by Apple, run on Android with the smartphone operating system space functionally a duopoly.

We believe Android and Google Play's intangible assets stem from the deals Alphabet has made with all smartphone manufacturers using Android as the default operating system. These deals, known as mobile application distribution agreements, or MADAs, allow smartphone manufacturers to use Alphabet's proprietary mobile applications that it has developed for the Android ecosystem. One of these proprietary mobile applications is Google Play, the app store that allows Android users to download non-preloaded applications such as Facebook or Spotify. In exchange for providing its applications, including Google Play, Alphabet gets prominent product placements for its applications, many of which are monetizable via advertising such as the Google Search widget, YouTube, and the Chrome internet browser.

While these contracts are being challenged in courts as anti-competitive, final judgments remain far out in the future. We think that even if Alphabet was forced to open up its Android ecosystem by allowing smartphone manufacturers to leverage its applications on a different operating system, the successful entry of a new player in the operating system market is hard to envision.

The difficulty in creating an operating system is not simply tied to the expenses associated with engineering talent. The most crucial part of an operating system is its ability to connect its users to a wide range of applications beyond the ones that come preloaded with the device. This is where the network effect created by Google Play really comes to shine.

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Developers, from large companies and small, all know a basic truth: undertaking the costs of developing an application are only worth it if you can monetize the application by putting it in front of a large audience. The audience, in the case of smartphones, is almost exclusively controlled by Apple and Alphabet. This creates a virtuous cycle of developers working tirelessly to develop high-quality, bug-free applications for Android and iOS, which in turn attract more usage on these applications as users download them via Google Play and the App Store.

For a new entrant to enter the operating system market and compete with Android and Google Play, the entrant would have to simultaneously attract a critical mass of developers and users, neither wishing to enter a space that is not already populated by the other.

From a return on invested capital perspective, Android and Google Play are lucrative businesses. For every sale on Google Play, Alphabet collects a fee from the developer. This fee, after accounting for the cost of running Google Play, is likely incredibly lucrative from an operating margin perspective, indicating positive excess returns on the business unit. Similarly, the MADAs Alphabet currently has with smartphone manufacturers include prominent placement of its own applications, serving as a funnel to its high-margin advertising business, which implies a high return on invested capital when it comes to operating and keeping Android up-to-date.

Devices

We believe that Alphabet’s hardware portfolio, which includes the Pixel and Nest group of products, Chromecast, and Fitbit among other products, do not merit an economic moat as a standalone business. We attribute this no-moat rating for the firm’s hardware portfolio primarily due to the lack of any material disclosure that would allow us to ascertain the business’ profitability and returns generated.

While Pixel smartphone sales have showed strength over the last few years, including a surprising pocket of strength in Japan where the smartphone constitutes roughly 10% of the overall smartphone market, we don’t have a reliable method to determine the returns on the firm’s invested capital in this space. We won’t be surprised if Alphabet’s hardware portfolio was generating excess returns and can see an argument for the presence of an economic moat, not too dissimilar to those built by other smartphone manufacturers, yet the obfuscation of granular data, an operational hazard when it comes to conglomerates such as Alphabet, precludes us from building a robust argument for an economic moat.

Other Bets

While Alphabet’s Other Bets portfolio includes some interesting companies, including Waymo which is one of the leaders in autonomous vehicles, the segment continues to burn capital, generating returns well below its cost of capital. As a result, we ascribe a no-moat rating to Alphabet’s Other Bets

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business.

We believe that as some of the technologies Alphabet has invested in mature, they could spin off to be standalone businesses or perhaps be a larger part of the Alphabet story. We have particularly high hopes for Waymo, that has consistently shown promising results and progress in the AV market. We also understand that Alphabet, as a large incumbent, continues to invest in aspirational technologies such as Waymo as a way to be at the forefront of technological innovation. At the same time, however, there is considerable uncertainty if any of Alphabet's aspirational investments will be economically successful.

Fair Value and Profit Drivers Malik Ahmed Khan, CFA, Equity Analyst, 5 Feb 2025

Our fair value estimate for Alphabet is $237 per share, implying a 2025 adjusted price/earnings multiple of 26 times and an enterprise value/adjusted EBITDA multiple of 19 times.

We forecast Alphabet's top line growing at an 10% compound annual growth rate over the next five years.

Drilling deeper into the firm's various segments, we expect Google Search to grow at a mid to high-single-digit level over the next five years as the digital advertising market matures and growth rates taper off after a robust few years following the pandemic. We expect YouTube to grow at a low-double-digit rate over the next five years with a strong advertising business being increasingly supported by a growing subscription business.

We view Google Cloud as a key growth driver for Alphabet's overall business. We project Google Cloud sales to grow 26% annually on average over the next five years as cloud migrations, increased usage of AI, and additional software add-ons all work together to bolster the firm's cloud sales. Alongside the firm's public cloud business, we believe Google Cloud will also benefit from increased usage of Google's Workspace productivity applications as the firm embeds more AI tools within them, improving their quality while attracting higher average revenue per user, or ARPU. Over the next five years, we expect Google Cloud to constitute around 25% of Alphabet's overall top line, up from 12% at the end of 2024.

On the profitability front, we foresee little improvement in Alphabet's gross or operating margins over the next five years. While the firm's scale and improving Google Cloud margin profile should enable it to improve its profitability, these potential improvements are offset by higher depreciation costs stemming from Alphabet's massive capital expenditures on data centers and AI capabilities.

As we model the trajectory of Alphabet's future revenue growth/profitability, we also look at hypothetical bear and bull cases for the firm.

The bear case includes a material deterioration in the firm's search revenue stemming from antitrust regulatory action. We model Google's search sales declining at a 4% annual rate over the next five years in our bear case as the firm loses search volumes and market share to rivals such as Microsoft's Bing. Some of the fair value impact implied by a decline in Google Search sales is offset by a decrease in traffic acquisition costs. Our fair value estimate for Alphabet in this hypothetical bear case is $175 per share.

The bull case for Google envisions a scenario where Google Search maintains its dominance in the online search market even as regulators prohibit the firm from having exclusive search agreements with the likes of Apple and Samsung. The result would be search revenue growing at a mid to high-single-digit rate without the firm having to pay roughly 20%-23% of its advertising revenue as traffic acquisition costs.

While we believe revenue sharing agreements will remain part of Google's overall cost structure, we believe that if antitrust regulators remove the exclusivity of Google Search's agreements with the likes of Apple and Samsung, Google will likely pay a smaller amount to these firms than it did when it was the exclusive search provider.

The fair value estimate for Alphabet in the bull-case scenario is $266 per share.

We also look at valuing Alphabet using a sum-of-the-parts approach. Using SOTP, we arrive at a $248 per share fair value estimate. While the majority of Alphabet's enterprise value continues to be driven by advertising, with Google Search being the largest advertising segment, we see a lot of potential value in other areas of Alphabet as well. According to our SOTP valuation, Google Cloud constitutes nearly 22% of the firm's overall intrinsic value. YouTube, ex ads, Play, and hardware sales all combined make up 7% of Alphabet's total value.

Risk and Uncertainty Malik Ahmed Khan, CFA, Equity Analyst, 21 Aug 2024

We assign Alphabet a Morningstar Uncertainty Rating of Medium. Our rating reflects our belief that despite the near-term uncertainty around antitrust regulation and potential competition in the AI-infused search market, Alphabet is well-positioned to expand its overall business while maintaining a rock-solid balance sheet.

As we look ahead, we believe Google's intangible assets and network effects will likely safeguard its dominance in the search space. Further, the firm's continued investments in AI, which Alphabet can leverage across nearly every business it operates, should be value-accretive. At the same time, however, we do think Google Search's status as the runaway leader in search could come under pressure primarily due to the antitrust scrutiny. While we don't see the firm's market leadership slipping due to antitrust concerns, this issue adds uncertainty to an otherwise stable business.

Alongside antitrust, the other key area of uncertainty for Alphabet as a whole is AI. The firm has

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Alphabet Inc Class A GOOGL ★★★★★ 7 May 2025 21:28, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
151.38 USD 7 May 2025	237.00 USD 5 Feb 2025 04:14, UTC	0.64	1.84 USD Tril 7 May 2025	Wide	Large Value	Medium	Exemplary	2 Apr 2025 05:00, UTC

invested, and continues to invest, a considerable amount of capital into new AI technologies such as generative AI. While we view these investments as value-additive, especially considering the myriad ways Alphabet can monetize its technological know-how in AI, we view them as adding more uncertainty to the range of possible outcomes for Alphabet's top line and profitability in the future.

The firm's high dependence on user behavior data represents an environmental, social, and governance risk. If it fails to maintain adequate data privacy and security, Google's advertising business would likely suffer and users' trust in the firm's other products would likely falter.

Capital Allocation Malik Ahmed Khan, CFA, Equity Analyst, 5 Feb 2025

We assign Alphabet an Exemplary Capital Allocation Rating based on its sound balance sheet, exceptional investments, and appropriate shareholder distributions.

Alphabet's financial health is enviable. With more than $96 billion in cash and cash equivalents, we are not concerned about the $11 billion in debt that currently sits on the firm's balance sheet. Alongside incredibly low leverage ratios, Alphabet's cash generation profile remains stellar.

Alphabet's investment strategy has also proven to be shrewd and value-accretive over the past two decades. Alongside smart M&A decisions, which include the acquisitions of Android, YouTube, DoubleClick, Fitbit, and Mandiant among others, Alphabet has aggressively invested in research and development over the years. The firm's research spending as a proportion of total sales has remained in the 14%-16% range over the last seven years, a trend we see continuing as the firm invests in nascent technologies such as generative AI.

With combative antitrust regulators scrutinizing Alphabet's every move, we think it is unlikely that Alphabet will be able to engage in any blockbuster M&A in the near future.

Alphabet's shareholder distributions have also been solid. The firm has a massive share buyback program that has enabled it to reduce its shares outstanding by 9% over the last five years. Further, Alphabet also pays a quarterly dividend of $0.20 on top of regular share repurchases. We expect the firm to leverage both its dividend and share repurchases as avenues of shareholder distributions in the future.

Larry Page and Sergey Brin co-founded Google. In December 2019, Page and Brin left their roles as CEO and president, respectively, but they remain on the board. Sundar Pichai, the CEO of Google, also became the CEO of Alphabet. Pichai joined Google in 2004 and was its product chief before becoming CEO in 2015. Although management's decisions have generated exceptional returns for shareholders in the past, we remain watchful regarding the high concentration of voting power. Page and Brin hold more than 50% voting power through Class B supervoting shares.

Analyst Notes Archive

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Alphabet: Cup Half Empty; Ad Tech Antitrust Decision Carries Weight but Not a Major Risk to Firm

Malik Ahmed Khan, CFA,Equity Analyst,17 Apr 2025

On April 17, US District Court Judge Leonie Brinkema issued her opinion on the Google Ad Tech antitrust case, finding the company to have an illegal monopoly in the sell-side ad market while rejecting the plaintiffs' claim that the firm monopolized the advertiser ad network market. Why it matters: Alphabet has built an integrated ad stack, with its presence on the supply, demand, and exchange parts of the advertising market. We believe the US Department of Justice, following Brinkema's opinion, will likely submit a proposal for the divesture of Alphabet's Google Network. Antitrust dark clouds have surrounded Alphabet's businesses, with the firm facing separate antitrust cases on Search, Play, and ad tech. While not as important as the firm's Search and YouTube ads business, open-web display ads provide key integration and data benefits to Alphabet. Akin to the Google Search antitrust case, Alphabet is planning to appeal the decision on the ad tech case, with the appeals process likely delaying any remedies into 2026. The bottom line: We retain our $237 fair value estimate for wide-moat Alphabet, and judging by the market's muted reaction to the antitrust decision April 17, we believe the market had largely priced in an adverse decision on the ad tech front. We continue to view Alphabet's shares as materially undervalued. As part of our analysis of this case's impact on Alphabet's business, we estimate that the firm's Google Network business can be loosely valued at $90 billion, around 5% of the firm's current market cap and not material to Alphabet's value as a whole. We also note that Alphabet's own strategic deprioritization of this business is reflected in the Google Network segment's sales declining for three years in a row as well as Alphabet's prior offer to regulators to spin off this business.

Alphabet: Broad-Based Selling Pushes Alphabet Into 5-Star Territory; Shares Undervalued Malik Ahmed Khan, CFA,Equity Analyst,7 Apr 2025

After weakness following the company's fourth-quarter earnings, Alphabet's stock continues to face downward pressure as the markets reel from a spectacular rout catalyzed by the imposition of tariffs by the new US administration. Why it matters: While there remains uncertainty on how long-lasting the US tariffs will be, we think Alphabet is competitively well-positioned even if digital advertising spending slows down. During periods of economic uncertainty, we see a disproportionate impact on top-funnel (brand awareness) advertising budgets. Alphabet, with its high-return-on-ad-spending search business, should be more resilient than its top-funnel digital advertising peers. Further, while tariffs continue to bring a lot of attention to Alphabet's digital advertising business, we believe investors should pay attention to the firm's cloud business which stands to accelerate sales in 2025 as capacity constraints ease, with more data center capacity coming online. The bottom line: We maintain our $237 fair value estimate for wide-moat Alphabet and continue to view the firm as materially undervalued. If the US tariffs persist, and we see a broad digital advertising spending slowdown, we'd expect a 10% fair value estimate decrease for Alphabet's shares, still valuing the firm well ahead of its current low-$140s price. As a reminder, Alphabet's current adjusted price-to-forward earnings multiple of 16 is not only lower than its Big Tech peers but also materially lower than the long-term S&P 500 average of 20, further amplifying our argument that the stock remains materially undervalued. Coming up: Alphabet's launch of Gemini 2.5, the firm's leading edge LLM, has catalyzed significant developer interest, and we expect the firm to monetize this interest in its cloud sales over 2025.

Alphabet: If Blessed by the Regulators, Acquisition of Wiz Would Bolster Firm's Cloud Platform

Malik Ahmed Khan, CFA,Equity Analyst,18 Mar 2025

Multiple news outlets, citing sources, reported that Alphabet is in advanced talks to purchase privately held cloud security firm Wiz for $30 billion. These talks come after Alphabet failed to buy Wiz for $23 billion last summer. Why it matters: As the third-largest public cloud vendor, Alphabet could boost its competitiveness against larger peers Amazon and Microsoft by incorporating Wiz's cloud security platform into its Google Cloud offering. While such a deal would be value-accretive for Alphabet's public cloud business and gives it competitive differentiation during a time when public cloud spending is booming due to increased adoption of generative artificial intelligence, real questions remain as to whether this deal will get regulatory approval. While there are no antitrust complaints against Google Cloud, we think regulators may seek to block the Wiz acquisition due to its meaty size of $30 billion. Also, we believe Alphabet's ongoing antitrust cases increase the odds of regulatory pushback against the Wiz deal. The bottom line: We keep our $237 per share fair value estimate for wide-moat Alphabet and don't see the Wiz acquisition affecting our Alphabet valuation due to its small relative size to Alphabet as a whole. Assuming Wiz is on track to hit its $1 billion in annual recurring revenue for 2025, Alphabet's offer would value Wiz at 30 times forward ARR, a material premium to other cybersecurity peers. Despite the rich valuation, we see strategic value in acquiring Wiz. Security is typically a very sticky area of tech spending, if Alphabet can embed more security solutions in its cloud offering, it can increase both its appeal to clients as well as their overall retention/spending on Google Cloud. Big picture: Much like Cisco’s acquisition of Splunk catalyzed further consolidation in security operations, we believe that if Alphabet's acquisition of Wiz goes through, we'd likely see a similar uptick in consolidation in the cloud security space.

We Forecast Autonomous Vehicles Will Be 50% of US and Canada Ride-Hails by 2035 Seth Goldstein, CFA,Strategist,10 Mar 2025

Robotaxi adoption is set to grow. Waymo and Tesla stand at the forefront of this technological shift, which offers both an opportunity and threat to ride-hailing vendors, Uber and Lyft. Why it matters: The market questions the winners and losers from robotaxis entering the ride-hail market. We see Alphabet's Waymo and Tesla's robotaxi as the biggest winners. However, traditional ride-hailing providers Uber and Lyft should also benefit from the transition. The bottom line: We forecast robotaxis

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will grow from less than 1% of the ride-hailing market today to 50% by 2035. Currently, Waymo is the only robotaxi provider, but we see Tesla entering the market in the coming years. We forecast Tesla and Waymo will lead the robotaxi transition. Robotaxis will see rapid adoption because they offer cheaper ride-hailing rides to consumers and are safer than the average human driver. They will also make around 50% more trips per day than the average human driver, meaning they will require fewer vehicles to capture market share. Wide-moat Alphabet is our top pick, trading in 4-star territory, as it offers the most upside of the names under our coverage with robotaxi exposure. Narrow-moat Tesla, narrow-moat, Uber, and no-moat Lyft trade in 3-star territory. Tesla would disproportionately benefit in a disruption scenario. Between the lines: We see two drivers that will speed up autonomous vehicle deployment: AV vendors becoming profitable and the creation of US federal regulations. Under the Trump administration, we expect a federal regulation will emerge, replacing the state-by-state approval process that is currently required. AV vendors using an asset-light model will improve profitability. This business model where AV vendors sell the AV and then run the AV software is the most profitable option based on our unit economics analysis, and also benefits the ride-hailing vendors, who will partner with AV vendors.

Alphabet Earnings: AI Monetization Across Firm's Businesses Isn't a Pipe Dream; Fair Value Up 8%

Malik Ahmed Khan, CFA,Equity Analyst,5 Feb 2025

Alphabet reported solid fourth-quarter earnings, with the firm's sales and operating margins growing 12% and 460 basis points year over year, respectively. Along with financial results, management gave an initial guidance of $75 billion for 2025's capital expenditures.Why it matters: We saw Alphabet's fourth-quarter earnings as further evidence of its sound artificial intelligence strategy, with the firm leveraging AI in its core advertising business as well as capitalizing on AI spending via Google Cloud. While advertising demand was seasonally strong, with ad sales up 11% year over year, we were particularly impressed by the firm's commentary on AI Overview monetization, which is approximately at par with traditional search monetization despite its launch just a few months ago. Google Cloud's revenue growth decelerated to 30% annual growth from 35% in the previous quarter. We attribute this deceleration primarily to Google Cloud being capacity-constrained (similar to Microsoft Azure). Once new capacity comes online in 2025, we forecast growth to inflect upward. The bottom line: We raise our fair value estimate for wide-moat Alphabet to $237 per share from $220 as we bake in the firm's strong fourth-quarter top line, which was well ahead of our prior estimate, as well as a reacceleration of Google Cloud sales as more capacity comes online in 2025. Shares traded down after hours as investors were likely left unimpressed by the cloud deceleration. We see this selloff as a buying opportunity and continue to view Alphabet's full-stack approach to AI—which includes infrastructure, software, applications, and ads—as a solid long-term strategy. On the margin front, we believe Alphabet's operating margins will likely stay flat at 32% over the next five years as depreciation charges from investments in AI offset any efficiency gains or headcount/real estate optimizations that the firm is planning.

Alphabet: Strong Advertising and Cloud Sales Should Make for a Strong Quarter Malik Ahmed Khan, CFA,Equity Analyst,4 Feb 2025

Alphabet reports fourth-quarter financial results tomorrow, Feb. 3, after markets close. While advertising demand is expected to be solid, partly as the fourth quarter includes holiday-driven ad spending, investors are likely keeping a keen eye on how Google Cloud revenue shapes up.Why it matters: We see fellow ad giant Meta's strong fourth-quarter earnings, reported last week, as a good omen for Alphabet's advertising sales. Beyond advertising, we also view Microsoft's strong Azure growth for the fourth calendar quarter as a good read-through for Google Cloud demand. For the fourth quarter, we expect advertising sales to clock in at $70 billion, up 6% year over year, with YouTube the fastest-growing ad business at Alphabet. On advertising, we expect management to provide commentary on AI Overviews monetization and the impact on user engagement. On the cloud infrastructure side, we expect Google Cloud sales to top $12 billion, up 35% year over year. We continue to expect cloud revenue to be driven by artificial intelligence-related workloads and are expecting some directional commentary on Gemini's (Alphabet's large language model) monetization trends. The bottom line: Going into earnings, we reiterate our $220 per share fair value estimate for wide-moat Alphabet and view shares as marginally undervalued. We believe outperformance on advertising, primarily via AI Overview monetization, and cloud growth could drive upside to our fair value. While investors have come around on the name, with Alphabet trading up 15% since the last earnings report, we continue to view the shares as attractively priced for investors seeking Big Tech exposure at a reasonable price. On the profitability side, we expect Alphabet's fourth-quarter operating margin to come in at 32%, up 270 basis points year over year, driven mostly by an improving margin profile for Google Cloud. On expenses, we expect Alphabet's capital expenditures for the quarter to be around $13 billion.

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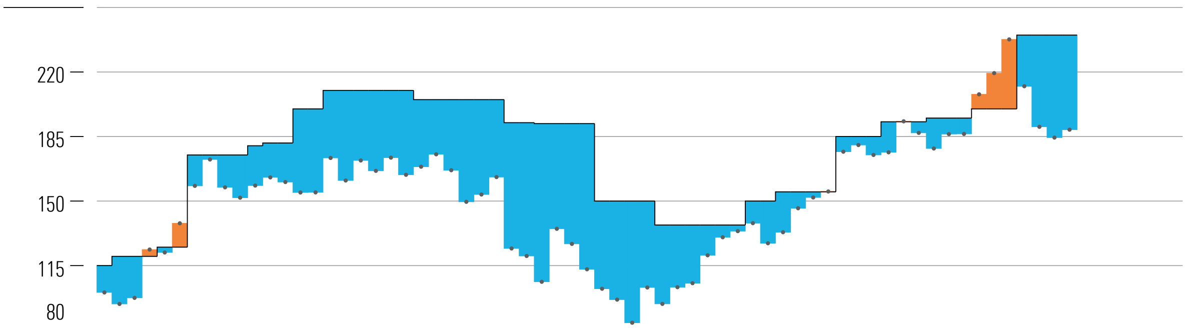
Alphabet Inc Class A GOOGL ★★★★★ 7 May 2025 21:28, UTC

Competitors Price vs. Fair Value

Amazon.com Inc AMZN

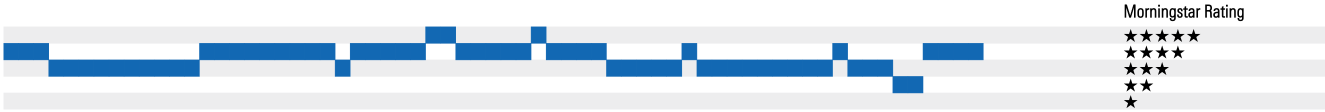


Fair Value: 240.00
7 Feb 2025 06:46, UTC

Last Close: 188.71
Overvalued
Undervalued

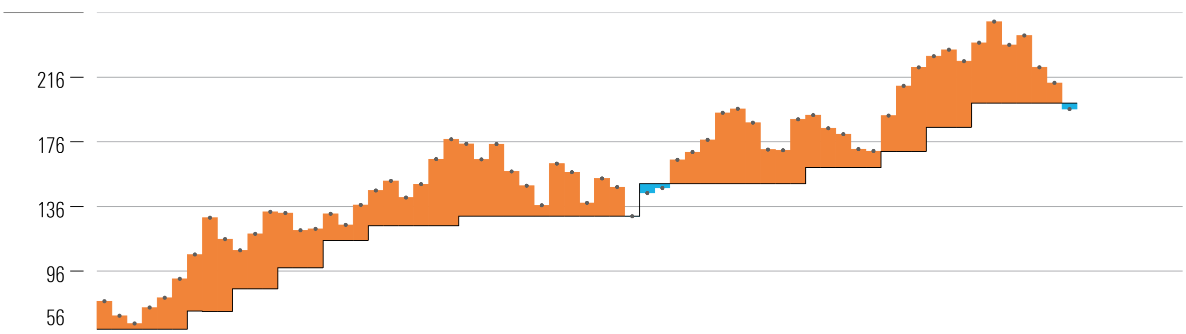
	2020	2021	2022	2023	2024	YTD	
	0.90	0.81	0.56	0.98	1.10	0.79	Price/Fair Value
	76.26	2.38	-49.62	80.88	44.39	-13.98	Total Return %

Morningstar Rating



Total Return % as of 07 May 2025. Last Close as of 07 May 2025. Fair Value as of 7 Feb 2025 06:46, UTC.

Apple Inc AAPL

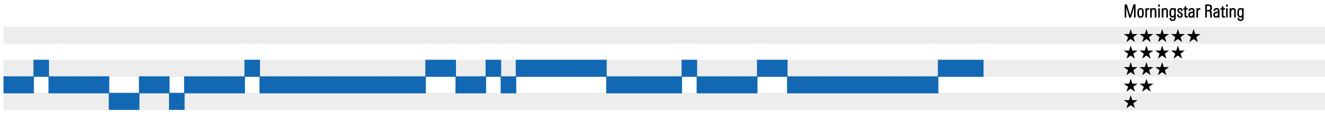


Fair Value: 200.00
1 Nov 2024 00:07, UTC

Last Close: 196.25
Overvalued
Undervalued

	2020	2021	2022	2023	2024	YTD	
	1.56	1.43	1.00	1.20	1.25	0.98	Price/Fair Value
	81.85	34.48	-26.32	48.91	30.58	-21.53	Total Return %

Morningstar Rating



Total Return % as of 07 May 2025. Last Close as of 07 May 2025. Fair Value as of 1 Nov 2024 00:07, UTC.

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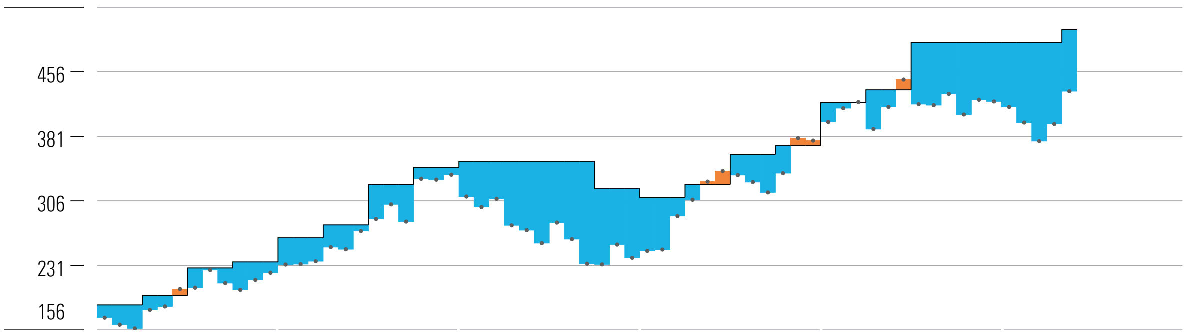
Alphabet Inc Class A GOOGL ★★★★★ 7 May 2025 21:28, UTC

Competitors Price vs. Fair Value

Microsoft Corp MSFT



Fair Value: 505.00
1 May 2025 01:56, UTC

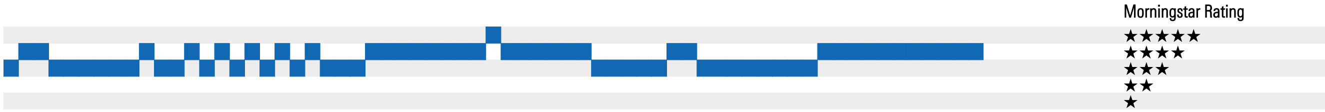
Last Close: 433.35

Overvalued

Undervalued

	2020	2021	2022	2023	2024	YTD	
	0.95	0.97	0.75	1.02	0.86	0.86	Price/Fair Value
	42.37	52.24	-27.94	57.96	12.91	3.01	Total Return %

Morningstar Rating



Total Return % as of 07 May 2025. Last Close as of 07 May 2025. Fair Value as of 1 May 2025 01:56, UTC.

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151.38 USD 7 May 2025	237.00 USD 5 Feb 2025 04:14, UTC	0.64	1.84 USD Tril 7 May 2025	Wide	Large Value	Medium	Exemplary	2 Apr 2025 05:00, UTC

Morningstar Valuation Model Summary

Financials as of 24 Apr 2025	Actual			Forecast				
Fiscal Year, ends 31 Dec	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Revenue (USD Mil)	282,836	307,394	350,018	389,792	431,394	474,644	519,493	566,095
Operating Income (USD Mil)	74,842	84,293	112,390	126,591	133,843	149,895	164,489	180,516
EBITDA (USD Mil)	88,317	96,239	127,701	148,029	164,472	187,867	203,451	220,709
Adjusted EBITDA (USD Mil)	88,317	96,239	127,701	148,029	164,472	187,867	203,451	220,709
Net Income (USD Mil)	59,972	73,795	100,118	126,171	133,472	147,116	159,521	173,144
Adjusted Net Income (USD Mil)	59,972	73,795	100,118	126,171	133,472	147,116	159,521	173,144
Free Cash Flow To The Firm (USD Mil)	40,455	54,702	53,627	55,230	69,120	86,772	98,990	113,307
Weighted Average Diluted Shares Outstanding (Bil)	13	13	12	12	12	12	11	11
Earnings Per Share (Diluted) (USD)	4.56	5.80	8.04	10.34	11.19	12.61	13.96	15.47
Adjusted Earnings Per Share (Diluted) (USD)	4.56	5.80	8.04	10.34	11.19	12.61	13.96	15.47
Dividends Per Share (USD)	0.00	0.00	0.80	0.84	0.88	0.93	0.97	1.02

Margins & Returns as of 24 Apr 2025		Actual			Forecast					
	3 Year Avg	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**5 Year Avg**
Operating Margin %	28.7	26.5	27.4	32.1	32.5	31.0	31.6	31.7	31.9	31.7
EBITDA Margin %	—	31.2	31.3	36.5	38.0	38.1	39.6	39.2	39.0	—
Adjusted EBITDA Margin %	—	31.2	31.3	36.5	38.0	38.1	39.6	39.2	39.0	38.8
Net Margin %	24.6	21.2	24.0	28.6	32.4	30.9	31.0	30.7	30.6	31.1
Adjusted Net Margin %	24.6	21.2	24.0	28.6	32.4	30.9	31.0	30.7	30.6	31.1
Free Cash Flow To The Firm Margin %	15.8	14.3	17.8	15.3	14.2	16.0	18.3	19.1	20.0	17.5

Growth & Ratios as of 24 Apr 2025		Actual			Forecast					
	3 Year CAGR	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**5 Year CAGR**
Revenue Growth %	10.8	9.8	8.7	13.9	11.4	10.7	10.0	9.5	9.0	10.1
Operating Income Growth %	12.6	-4.9	12.6	33.3	12.6	5.7	12.0	9.7	9.7	9.9
EBITDA Growth %	13.6	-0.8	9.0	32.7	15.9	11.1	14.2	8.3	8.5	11.6
Adjusted EBITDA Growth %	12.8	-0.8	9.0	32.7	15.9	11.1	14.2	8.3	8.5	11.6
Earnings Per Share Growth %	12.8	-18.8	27.3	38.7	28.5	8.2	12.7	10.8	10.8	14.0
Adjusted Earnings Per Share Growth %	12.8	-18.8	27.3	38.7	28.5	8.2	12.7	10.8	10.8	14.0

Valuation as of 24 Apr 2025	Actual			Forecast				
	2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Price/Earning	19.3	24.1	23.5	14.6	13.5	12.0	10.8	9.8
Price/Sales	4.0	5.7	6.6	4.7	4.3	3.9	3.6	3.3
Price/Book	4.5	6.3	7.2	5.0	4.3	3.7	3.1	2.7
Price/Cash Flow	—	—	—	—	—	—	—	—
EV/EBITDA	12.0	17.3	17.6	12.0	10.8	9.4	8.7	8.0
EV/EBIT	14.1	19.7	20.0	14.0	13.2	11.8	10.8	9.8
Dividend Yield %	—	—	0.4	0.5	0.6	0.6	0.6	0.7
Dividend Payout %	0.0	0.0	10.0	8.1	7.9	7.4	7.0	6.6
Free Cash Flow Yield %	—	—	—	—	—	—	—	—

Operating Performance / Profitability as of 24 Apr 2025	Actual			Forecast				
Fiscal Year, ends 31 Dec	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
ROA %	16.4	18.3	22.2	25.0	23.5	23.0	22.1	21.1
ROE %	23.4	26.0	30.8	34.2	31.9	30.6	28.9	27.3
ROIC %	36.5	34.0	35.5	33.1	29.4	28.5	27.5	26.8

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Financial Leverage (Reporting Currency)	Actual			Forecast				
Fiscal Year, ends 31 Dec	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Debt/Capital %	2.5	1.5	1.1	0.4	0.3	0.3	0.3	0.3
Assets/Equity	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3
Net Debt/EBITDA	-1.0	-0.9	-0.5	-0.5	-0.5	-0.6	-0.7	-0.8
Total Debt/EBITDA	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.0
EBITDA/ Net Interest Expense	25.1	-67.6	-17.2	-6.4	-7.1	-8.1	-8.8	-9.5

Forecast Revisions as of 24 Apr 2025	2025		2026		2027	
Prior data as of 4 Feb 2025	**Current**	**Prior**	**Current**	**Prior**	**Current**	**Prior**
Fair Value Estimate Change (Trading Currency)	237.00	236.99	—	—	—	—
Revenue (USD Mil)	389,792	389,843	431,394	431,552	474,644	474,382
Operating Income (USD Mil)	126,591	125,831	133,843	136,107	149,895	152,125
EBITDA (USD Mil)	148,029	147,272	164,472	166,747	187,867	190,076
Net Income (USD Mil)	126,171	112,026	133,472	120,791	147,116	134,407
Earnings Per Share (Diluted) (USD)	10.34	9.17	11.19	10.09	12.61	11.45
Adjusted Earnings Per Share (Diluted) (USD)	10.34	9.17	11.19	10.09	12.61	11.45
Dividends Per Share (USD)	0.84	0.00	0.88	0.00	0.93	0.00

Key Valuation Drivers as of 24 Apr 2025	
Cost of Equity %	9.0
Pre-Tax Cost of Debt %	5.5
Weighted Average Cost of Capital %	9.0
Long-Run Tax Rate %	15.0
Stage II EBI Growth Rate %	9.0
Stage II Investment Rate %	18.0
Perpetuity Year	20

Additional estimates and scenarios available for download at https://pitchbook.com/.

Discounted Cash Flow Valuation as of 24 Apr 2025	**USD Mil**
Present Value Stage I	248,468
Present Value Stage II	1,232,958
Present Value Stage III	1,223,278
Total Firm Value	**2,704,705**
Cash and Equivalents	95,657
Debt	10,883
Other Adjustments	0
Equity Value	**2,789,479**
Projected Diluted Shares	12
Fair Value per Share (USD)	**237.00**

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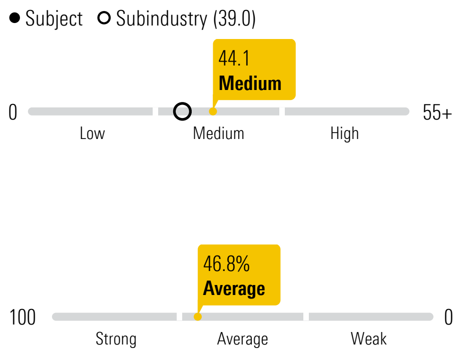
Alphabet Inc Class A GOOGL ★★★★★ 7 May 2025 21:28, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
151.38 USD 7 May 2025	237.00 USD 5 Feb 2025 04:14, UTC	0.64	1.84 USD Tril 7 May 2025	Wide	Large Value	Medium	Exemplary	2 Apr 2025 05:00, UTC

ESG Risk Rating Breakdown

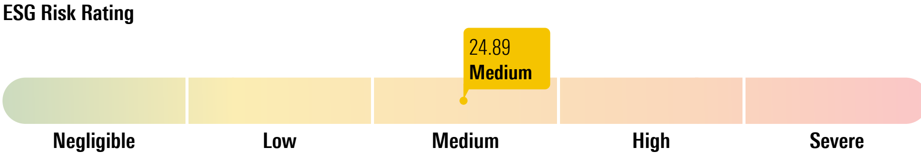
Exposure	
Company Exposure[1]	44.1
– Manageable Risk	41.0
Unmanageable Risk[2]	**3.1**
Management	
Manageable Risk	41.0
– Managed Risk[3]	19.2
Management Gap[4]	**21.8**
Overall Unmanaged Risk	**24.9**



- 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 46.8% 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[5]

ESG Risk Rating is of Apr 02, 2025. Highest Controversy Level is as of Apr 08, 2025. Sustainalytics Subindustry: Internet Software and Services. 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/.

Peer Analysis 02 Apr 2025

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	
Alphabet Inc	44.1 | Medium	0 – 55+	46.8 | Average	100 – 0	24.9 | Medium	0 – 40+
Microsoft Corp	34.9 | Low	0 – 55+	54.1 | Strong	100 – 0	17.3 | Low	0 – 40+
Amazon.com Inc	39.2 | Medium	0 – 55+	36.4 | Average	100 – 0	26.1 | Medium	0 – 40+
Apple Inc	34.6 | Low	0 – 55+	49.4 | Average	100 – 0	18.7 | Low	0 – 40+
Meta Platforms Inc	49.7 | Medium	0 – 55+	36.9 | Average	100 – 0	32.7 | High	0 – 40+

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Appendix

Historical Morningstar Rating

Alphabet Inc Class A GOOGL 7 May 2025 21:28, UTC

Dec 2025	Nov 2025	Oct 2025	Sep 2025	Aug 2025	Jul 2025	Jun 2025	May 2025	Apr 2025	Mar 2025	Feb 2025	Jan 2025
—	—	—	—	—	—	—	★★★★★	★★★★★	★★★★★	★★★★	★★★★
Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
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Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
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Amazon.com Inc AMZN 7 May 2025 21:28, UTC

Dec 2025	Nov 2025	Oct 2025	Sep 2025	Aug 2025	Jul 2025	Jun 2025	May 2025	Apr 2025	Mar 2025	Feb 2025	Jan 2025
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Apple Inc AAPL 7 May 2025 21:28, UTC

Dec 2025	Nov 2025	Oct 2025	Sep 2025	Aug 2025	Jul 2025	Jun 2025	May 2025	Apr 2025	Mar 2025	Feb 2025	Jan 2025
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Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
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Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
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Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
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Dec 2025	Nov 2025	Oct 2025	Sep 2025	Aug 2025	Jul 2025	Jun 2025	May 2025	Apr 2025	Mar 2025	Feb 2025	Jan 2025
—	—	—	—	—	—	—	★★★★	★★★★	★★★★	★★★★	★★★★
Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
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Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
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Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
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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
★★★	★★★	★★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★★	★★★★	★★★

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.

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

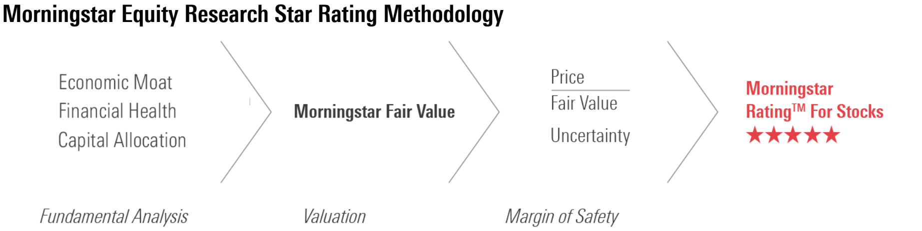
The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested ("RONIC")—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling 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.

Morningstar Equity Research Star Rating Methodology



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-

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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 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.

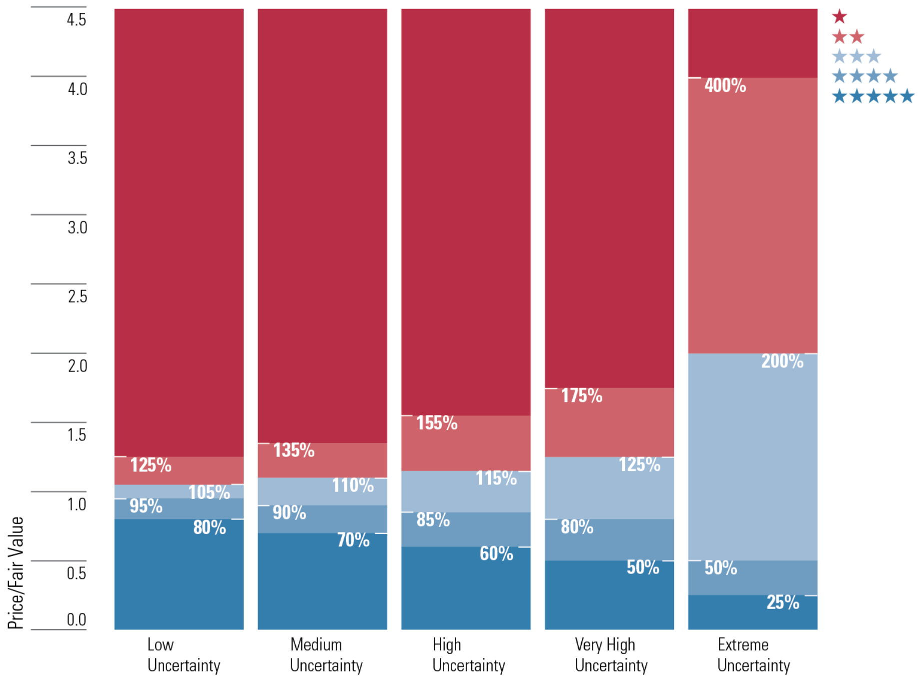
4. Market Price

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 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.

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-

Research Methodology for Valuing Companies

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.

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.

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/

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.

Risk Warning

Please note that investments in securities are subject to market and other risks and there is no assurance or guarantee that the intended investment objectives will be achieved. Past performance of a security may or may not be sustained in future and is no indication of future performance. A security investment return and an investor's principal value will fluctuate so that, when redeemed, an investor's shares may be worth more or less than their original cost. A security's current investment performance may be lower or higher than the investment performance noted within the report. Morningstar's Uncertainty Rating serves as a useful data point with respect to sensitivity analysis of the assumptions used in our determining a fair value price.

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