

Shopify Inc Registered Shs -A- Subord Vtg SHOP ★★★★★ 7 May 2025 21:46, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment¹
94.50 USD 7 May 2025	120.00 USD 11 Feb 2025 19:40, UTC	0.79	120.52 USD Bil 8 May 2025	Wide	Large Growth	Very High	Standard	 2 Apr 2025 05:00, UTC

Sector	Industry
 Technology	Software - Application

Business Description

Shopify offers an e-commerce platform primarily to small and medium-size businesses. The firm has two segments. The subscription solutions segment allows Shopify merchants to conduct e-commerce on a variety of platforms, including the company's website, physical stores, pop-up stores, kiosks, social networks (Facebook), and Amazon. The merchant solutions segment offers add-on products for the platform that facilitate e-commerce and include Shopify Payments, Shopify Shipping, and Shopify Capital.

15% of total GMV, while just 1% of GMV is related to imports from China.

Coming up: We see the second quarter outlook as mixed, with inline revenues and slightly light profitability. Total revenue is expected to grow in the mid-20% year over year, while gross profit should grow in the high-teens year over year, with operating expenses of 39% to 40% of revenue.

- Shopify noted no changes in consumer behavior and that strength continued through April and into March. The firm is seeing no price increases thus far.

Business Strategy & Outlook Dan Romanoff, CPA, Senior Equity Analyst, 11 Feb 2025

Shopify strives to be a one-stop shop for small retail businesses, especially those that are e-commerce primarily, only, or first, and has made great strides in addressing the needs of enterprise customers as well. The company offers a simple but robust e-commerce platform with a variety of related add-on functionalities that ultimately converge into a turnkey solution for small and midsize businesses, or SMBs. Shopify's rapid rise since its 2015 initial public offering underscores a nascent software niche that is rapidly increasing and demonstrates a winning solution. We believe the company has established a wide moat, as switching critical e-commerce platforms has financial and operational costs for an already resource-constrained customers. We forecast robust top-line growth benefiting from e-commerce trends over the next several years.

Our research suggests Shopify is the leading platform for SMBs, as supported by the largest number of merchants of any platform. More merchants and high attach rates from add-on features like payments, shipping, and capital should continue to drive strong revenue growth over the medium term. The company's focus on using search engine optimization, topical blogs, and network referrals to attract SMB users suggests to us that there should be leverage in the sales and marketing line to help increase operating margins over time. We also think scale will help drive margins higher.

Ease of use, a large expert support community, and an emerging developer ecosystem combine to make Shopify's platform attractive to users of all sizes. Add-ons such as Payments, Shipping, and Capital allow for upsells and provide another growth lever for the company. After establishing itself as the SMB leader Shopify has been pushing more into the enterprise with Shopify Plus, which allows online stores to remain on the platform as their needs become more advanced. We expect continued success as Shopify gathers additional enterprise customers and its existing customers grew in size and sophistication.

Bulls Say Dan Romanoff, CPA, Senior Equity Analyst, 8 May 2025

- Shopify's growth has been strong and is expected to remain so, with robust new merchant adds, increasing GMV, and high attach rates.
- We believe Shopify is attractive for SMBs because it is simple to use and has a wide variety of built-in features that make it a turnkey solution.

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Competitors

	Shopify Inc Re...-A- Subord Vtg SHOP	Adobe Inc ADBE	Amazon.com Inc AMZN	Salesforce Inc CRM
Economic Moat	Wide	Wide	Wide	Wide
Currency	USD	USD	USD	USD
Fair Value	120.00 11 Feb 2025 19:40, UTC	590.00 12 Dec 2024 05:50, UTC	240.00 7 Feb 2025 06:46, UTC	315.00 4 Dec 2024 02:31, UTC
1-Star Price	210.00	914.50	324.00	488.25
5-Star Price	60.00	354.00	168.00	189.00
Assessment	Undervalued 7 May 2025	Undervalued 7 May 2025	Undervalued 7 May 2025	Fairly Valued 7 May 2025
Morningstar Rating	★★★★★ 7 May 2025 21:46, UTC	★★★★★ 7 May 2025 21:27, UTC	★★★★★ 7 May 2025 21:28, UTC	★★★ 7 May 2025 21:34, UTC
Analyst	Dan Romanoff, Senior Equity Analyst	Dan Romanoff, Senior Equity Analyst	Dan Romanoff, Senior Equity Analyst	Dan Romanoff, Senior Equity Analyst
Capital Allocation	Standard	Exemplary	Exemplary	Standard
Price/Fair Value	0.79	0.65	0.79	0.88
Price/Sales	13.85	7.78	3.12	7.15
Price/Book	10.58	12.79	6.55	4.38
Price/Earning	109.18	25.45	32.14	40.58
Dividend Yield	0.00%	0.00%	0.00%	0.58%
Market Cap	122.36 Bil	164.07 Bil	2,003.41 Bil	266.95 Bil
52-Week Range	48.56 — 129.38	332.01 — 587.75	151.61 — 242.52	212.00 — 369.00
Investment Style	Large Growth	Large Blend	Large Blend	Large Blend

- Shopify has been successful at moving upstream to increasingly attract mid-market and enterprise customers to the platform, which we think has been a worthwhile endeavor.

Bears Say Dan Romanoff, CPA, Senior Equity Analyst, 8 May 2025

- Shopify has traded at lofty valuations at times, and while it might continue to generate strong growth, the company may still fail to live up to optimistic assumptions embedded in the share price.
- Shopify is overexposed to the economic cycle, with the high failure rate for core SMB customers exacerbated by the fact retail volumes would likely decline in a downturn.
- As Shopify grows and expands its portfolio, it is increasingly likely that there will be more aggressive competitive responses from major competitors, like Amazon, Salesforce, and Adobe.

Economic Moat Dan Romanoff, CPA, Senior Equity Analyst, 31 May 2024

We assign a wide moat rating to Shopify, primarily driven by switching costs, with the network effect

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serving as a secondary moat source. We think both software and merchant solutions have a wide moat based on both moat sources. Given the company's history of generating excess returns, its complete portfolio of software and services, and strong competitive position, we think that Shopify will probably generate 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 the customer spending is retained by the software provider after a given period. Shopify does not provide retention metrics. We think these data points would not look favorable because Shopify primarily serves the small and medium sized business market. On the small end of clients, Shopify might see 75% retention, while according to management retention is north of 90% for larger Shopify Plus customers.

Shopify provides the core digital commerce engine for customers, including a front end that allows merchants to easily display, manage, and sell products over a variety of channels and an integrated back end that allows users to manage their e-commerce business across those same channels, including sourcing, inventory management, order processing, payments, warehousing, fulfilment, and shipping. We think merchant solutions are inseparable from software in that the software is the core, but the add-on services would not be needed without it. We believe this system is a core pillar of sales execution for customers and should be considered mission critical. As such, we believe this establishes switching costs as a moat source for Shopify.

Shopify's diverse client base should be viewed positively, but it complicates our moat analysis somewhat. The failure rate for startups and the smaller end of SMBs is high—generally 25%-75% over the first 10 years depending on the study. We believe a digital commerce platform is essential for a business-to-consumer model, and small shops would not have an IT support function, and therefore would be unlikely to take on the challenge of switching platforms. Again, Shopify offers a turnkey solution that spans both internal operations and customer-facing presentation layers. Critically, Shopify also allows merchants to maintain their own brand when selling in other marketplaces and build a

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massive data repository on customers. The fact that an SMB has a greater chance of failure does not mean it would be more likely to change its digital commerce platform. Additionally, the SMB focus ensures a wide funnel for customer gathering.

Larger enterprise users have a more clearly defined switching cost in our view given much higher complexity within the overall IT infrastructure and core software systems. Customer relationships tend to be long tailed here as is typical in enterprise software, especially for core software elements like e-commerce. Shopify has been moving upstream into this market for years and has solidified its position here as well. Feature additions to the platform, the emergence of commerce components, and a partnership with Manhattan Associates burnish the company’s enterprise credentials.

Digital commerce is evolving, which makes the competitive landscape somewhat unsettled, with Shopify mainly serving as the disruptive force. From a competitive standpoint, at the enterprise end of the spectrum, our analysis suggests Shopify carries a less robust feature set, and therefore is less expensive despite recent price increases, simpler to use, and enjoys faster implementation. Shopify’s management said that the competitor it sees the most in the market is BigCommerce.

Merchant solutions are add-on services to the core software package. This set of services is a natural extension of the software and represents a significantly larger portion of revenue than the underlying software. Penetration varies by country and product, but Payments is easily the most popular add-on. We believe these solutions make the solution particularly sticky for SMB customers, as these are services that SMB users need to conduct business but do not have the resources to handle internally.

We view network effect as a secondary moat source across software and merchant solutions. Like some other software companies, Shopify has established an app store, in which developers can sell their Shopify extensions and add-on applications. There are more than 10,000 applications on the platform, which suggests sufficient scale to lend itself to a network effect wherein the large user base attracts developers that make the software better, which in turn attracts more users.

The company also has a network of partners referring potential customers to the Shopify platform, with tens of thousands of partners who have referred at least one signed customer to the company. Such referrals tend to generate higher gross merchandise volume and have longer relationships with the company. In return, the company pays a referral fee to referring partners. Shopify also collects fees for referring Shopify users to its expert list of web designers, photographers, developers, and other creative professionals that might help launch a customer’s e-commerce website. Our research indicates that taken together, these factors are very important to potential customers as they are evaluating digital commerce platforms.

Fair Value and Profit Drivers Dan Romanoff, CPA, Senior Equity Analyst, 8 May 2025

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Our fair value estimate is \$120 per share, which implies an enterprise value/sales multiple of 14 times 2025 revenue and a 1% free cash flow yield.

Our forecast includes a continued shift to merchant solutions from subscriptions. We model a 21% compound annual growth rate for total revenue over the next five years. In our view, revenue growth will be driven by new merchants on the platform, Shopify Payments, Shopify Shipping, and Shopify Capital, point of sale, growing gross merchandise value on the platform, and international expansion. We also assume the introduction of unspecified new merchant solutions over time, such as more financial-related services, although we do not think this is a critical factor over the next several years. We believe the failure rate will remain high on the SMB side, but also that successful merchants will grow to become Shopify Plus enterprise customers. Our GAAP operating margin estimate expands from 12% in 2024 (actual) to the mid-teens area in 2029.

Risk and Uncertainty Dan Romanoff, CPA, Senior Equity Analyst, 13 Feb 2024

Shopify has a Very High Morningstar Uncertainty Rating. The company generally trades at high multiples relative to peers. While the firm is expected to produce revenue growth at the high end of peers and the premium may be justified, higher absolute valuation levels offer less room for missteps and therefore carry greater inherent risks.

Shopify caters to SMB customers, which generates a higher degree of churn. Management does not disclose an overall retention figure, but we believe it is well below the 90%-plus it has with its Shopify Plus users. The failure rate for new businesses is very high—between 25% and 75% depending on the study and the time period. While there may be 47 million potential users in the target market, they generate low average revenue per user.

Given the SMB customer base and the fact that the firm directly benefits from e-commerce sales on its platform, we believe Shopify is more susceptible to a recession than more enterprise-focused peers in two ways. First, SMB customers are more likely to fail in a recession, and second, the value of gross merchandise volume processed on the platform is likely to slow as consumers spend less.

Shopify faces a wide variety of competition on the SMB side, including BigCommerce, some of which are publicly traded. As the company moves up-market into enterprise accounts, it will increasingly bump up against Salesforce and Adobe, with their enterprise-grade marketing and commerce suites. Along these lines, we think the market is nebulous, with various third-party data providers sizing the market appreciably below the company’s estimation of market size.

While we do not see significant environmental, social, or governance risks, Shopify faces strong competition for software engineers on the hiring front and faces risks arising from a potential data breach within its data centers.

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Capital Allocation Dan Romanoff, CPA, Senior Equity Analyst, 11 Feb 2025

We assign Shopify a Standard Capital Allocation Rating. This rating reflects our assessments of a strong balance sheet, fair investments, 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 buybacks, which Shopify does not offer. We also assume a relatively modest level of acquisitions annually to bolster technology advancements. We acknowledge the risks involved with inorganic growth given the impairment on the Deliverr acquisition, and the related internal investment program around its broader logistics business.

CEO Tobi Luetke founded Shopify and has been its CEO since 2008. He created software as part of the launch of an online snowboard store and quickly pivoted to focus on the underlying software itself, which became the Shopify platform in 2006. Luetke has directed the firm through strong initial adoption and extremely rapid growth. Impressively, growth has been overwhelmingly organic, with maybe one or two small acquisitions in any given year. Luetke also oversaw strategic foundation of Shopify Payments, which has been a very strong growth driver since the IPO and is behind the organic and viral marketing approach to merchant acquisition.

Analyst Notes Archive

Shopify Earnings: Positive Demand Trends Continue Across All Products and Geographies Dan

Romanoff, CPA, Senior Equity Analyst, 11 Feb 2025

We are raising our fair value estimate to \$120 per share, from \$105 previously, for wide-moat Shopify after the firm reported good results and provided first-quarter guidance that was once again better than our expectations. Management commented that it thought the company was the right size to increase revenues in 2025 without meaningfully adding to headcount, which drives our margin assumptions slightly higher throughout our forecast. We acknowledge our profitability estimates have been and remain slightly below consensus given historic volatility. Our fair value estimate for Canadian shares rises to CAD 172 from CAD 141. We now see shares as fairly valued. We continue to believe that Shopify is well positioned as a leader in e-commerce and has a variety of irons in the fire to sustain durable and profitable growth in the coming years. Impressive fourth-quarter demand was driven by merchant additions, international expansion, success in offline sales, and overall GMV expansion. The sustained momentum is notable, especially with growing momentum with enterprise customers. We think this reflects the success of dynamic marketing investments and the company's growing leadership position. Fourth-quarter revenue accelerated to 31% year over year growth as reported to \$2.812 billion, more than \$100 million ahead of our above-consensus expectations. Relative to the prior-year period, subscription revenue grew 27% year over year, while merchant solutions increased 33%, and both lines were better than we anticipated. In our view, Shopify should continue to build on success in attracting

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larger brands to the platform, especially given the rash of recently launched features and products, including Markets Pro, Shopify Magic, and Commerce Components. Gross merchandise volume, accelerated to 26% year-over-year growth to \$94.5 billion, while gross payment volume processed through Shopify Payments was approximately \$60.8 billion, or 64% of GMV.

Shopify Earnings: Strength Abounds Across Growth, Margins, and KPIs; Guidance Similarly Strong Dan Romanoff, CPA,Senior Equity Analyst,12 Nov 2024

We are raising our fair value estimate to \$105 per share, from \$80 previously, for wide-moat Shopify after the firm reported strong results and provided fourth-quarter guidance that was meaningfully better than our expectations. Our fair value estimate for Canadian shares rises to CAD 141 from CAD 110. Performance for both revenue and profitability were strong for the second consecutive quarter, with guidance once again being appreciably better than the Street, including ourselves, were expecting. We raised our estimates throughout our forecast, including by more than 100 basis points in annual growth and approximately 50 basis points of margin expansion. Shares are jumping intraday based on strong results, and after a remarkable run since early August the stock has doubled, which we think leaves it fairly valued. We continue to believe that Shopify is well positioned as a leader in e-commerce and has a variety of irons in the fire to maintain durable growth.Third-quarter revenue strength was impressive, in our view, as Shopify continues to gather more merchants, expand internationally, succeed in offline sales, and drive overall gross merchandise volume, or GMV, expansion. We think this reflects the success of dynamic marketing investments and the company's growing leadership position. Third-quarter revenue accelerated to 26% year-over-year growth as reported to \$2.162 billion, ahead of our above-consensus expectations. Relative to the prior-year period, subscription revenue grew 26% year over year, while merchant solutions increased 26%, and both lines were better than we anticipated.In our view, Shopify should build on success in attracting larger brands to the platform, especially given the rash of recently launched features and products, including Markets Pro, Shopify Magic, and Commerce Components. GMV accelerated to 24% year-over-year growth to \$69.7 billion, while gross payment volume processed through Shopify Payments was \$42.9 billion, or 62% of GMV.

Shopify Earnings: Merchants Flocking to Platform in a Strong Quarter With Good Guidance Dan Romanoff, CPA,Senior Equity Analyst,7 Aug 2024

We are raising our fair value estimate to \$80 per share, from \$72 previously, for wide-moat Shopify after the firm reported strong results and provided third-quarter guidance that was meaningfully better than our expectations. Our fair value estimate for Canadian shares rises to CAD 110 from CAD 99. Shares are jumping intraday based on these positive results, but we still see upside based mainly on higher near-term growth contained in our new fair value estimate. Unlike the last couple of quarters, management delivered on cost containment and strong margins. We continue to believe that Shopify is well positioned as a leader in e-commerce and has a variety of irons in the fire to sustain durable growth.We

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are impressed by revenue strength in the quarter and have moved our estimates higher over the next several years. We think this reflects the success of dynamic marketing investments and the company's growing leadership position. Second-quarter revenue grew 21% year over year as reported to \$2.045 billion, ahead of our expectations. Normalizing for the sale of the logistics business, revenue expanded 25% year over year. Relative to the prior-year period, subscription revenue grew 27% year over year, while merchant solutions increased 19%. Subscriptions were considerably stronger than we anticipated, while merchant solutions were in line. Overall revenue strength was driven by a combination of continued merchant growth and performance; the impact from price increases; adoption of merchant solutions products like payments; strength in Europe; and offline performance. In our view, Shopify should build on success in attracting larger brands to the platform, especially given the rash of recently launched features and products, including Markets Pro, Shopify Magic, and Commerce Components. Gross merchandise volume, or GMV, grew 22% year over year to \$67.2 billion, while gross payment volume processed through Shopify Payments was \$41.1 billion, or 61% of GMV.

Shopify: Upgrading Moat to Wide, on the Increasing Enterprise Presence Dan Romanoff, CPA, Senior Equity Analyst, 31 May 2024

We are upgrading our moat rating for Shopify to wide from narrow, as we think the company used the covid lockdowns to prove its value proposition to all customers, meaningfully improve its solutions, and more firmly cement itself with larger merchants. We now believe Shopify will probably deliver excess returns beyond its cost of capital for the next 20 years. In our opinion, both subscriptions and merchant solutions are wide-moat businesses. Based on increased confidence in our long-term outlook, we are raising our fair value estimate to USD 72 per share, or CAD 99, from USD 68 or CAD 93, leaving shares undervalued, in our view. We continue to believe that Shopify is well-positioned within e-commerce platforms and has a variety of irons in the fire to maintain durable growth. Shopify has been pushing more into the enterprise segment with Shopify Plus, which allows online stores to remain on the platform as their needs become more advanced. During the covid pandemic, consumer companies that had not traditionally had direct relationships with their customers used Shopify Plus to quickly launch e-commerce sites to enable sales in what was a chaotic period. Shopify, its enterprise users, and investors all witnessed the transformation firsthand. We think the company should continue to find success in attracting larger brands to the platform, especially given the rash of new features and products, including Markets Pro, Shopify Magic, and Commerce Components. We also think the partnership with Manhattan Associates should start to bear fruit with enterprise customers over the next year or two.

Shopify Earnings: Weaker Near-Term Outlook Overshadows Good Results Dan Romanoff, CPA, Senior Equity Analyst, 8 May 2024

We are maintaining our fair value estimate of \$68 per share for narrow-moat Shopify after the company reported generally good first quarter results but offered guidance that was below our expectations.

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Given currency fluctuations, our fair value for Canadian shares rises to CAD 93 from CAD 91. We surmise that the sharp selloff in Shopify's shares stem from the weak guidance, although our prior estimates were more conservative than FactSet consensus, so it is less of a miss, in our view. Like last quarter, we are surprised by expense growth, particularly in sales and marketing, especially during a time when software companies have tightened up spending and have been overdelivering on margin performance. After thinking the shares were overvalued in recent months, we now see modest upside to the stock after today's selloff. We continue to believe that Shopify is well positioned and has various irons in the fire to sustain durable growth. Given limited guidance, we see revenue performance as solid. First-quarter revenue grew 23% year over year as reported to \$1.861 billion, ahead of our aggressive expectations. Normalizing for the sale of the logistics business, revenue expanded 29% year over year. Relative to the prior-year period, subscription revenue grew 34% year over year, while merchant solutions increased 20%. Subscriptions were considerably stronger than we anticipated, while merchant solutions were slightly weaker. Overall revenue strength was driven by a combination of continued merchant growth and performance, the impact from price increases, adoption of merchant solutions products like payments. Europe and offline revenue also contributed to solid revenue. While guidance for the second quarter was a little worse than anticipated on both the top and bottom lines, this has little bearing on our longer-term model assumptions. Management justified the growing sales and marketing line by pointing to merchant growth and lower customer acquisition costs.

Shopify Earnings: Strength Abounds but Expense Growth Guidance Is Concerning Dan Romanoff, CPA, Senior Equity Analyst, 13 Feb 2024

Narrow-moat Shopify reported strong fourth-quarter results, including better-than-expected revenue and meaningfully better profitability relative to our model. Guidance was also a little better than anticipated on the top and bottom lines. We have been expecting meaningful increases in profitability and Shopify has delivered. However, we think our profitability estimates skew below broader investor expectations on our more cautious views on the financial health of consumers, gross margin expansion, and results that have been volatile. We think the negative stock reaction is a function of elevated expectations around margins, as management guided operating expenses to increase in the low-teen percentage area sequentially despite a normal seasonal decline in revenue. Still, the outlook was better than we anticipated, so we continued to refine our near and medium-term profitability assumptions upward, which led us to raise our fair value estimate to \$68/CAD 91 per share from \$60/CAD 83. After the strong run the shares had throughout 2023, we now see shares as overvalued. Shopify is enjoying a plethora of growth drivers, which we think will have a long tail. Fourth-quarter revenue grew 24% year over year as reported to \$2.144 billion, ahead of our aggressive expectations. Normalizing for the sale of the logistics business, revenue expanded 30% year over year. Relative to the prior-year period, subscription revenue grew 31% year over year, while merchant solutions increased 21%. Both lines exceeded our estimates, but subscriptions drove most of the upside. Overall revenue strength was

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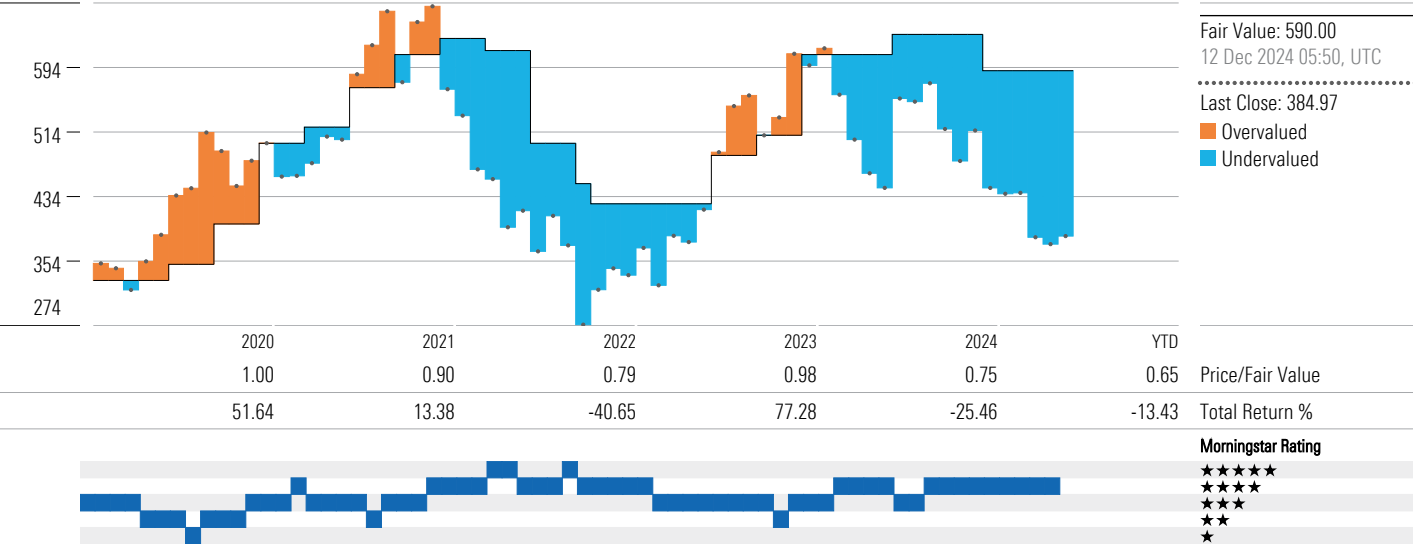
driven by a combination of continued merchant growth and performance, the impact of price increases, adoption of merchant solutions products like payments, capital, markets, and installments, strong Black Friday and Cyber Monday results, robust European performance, and rapidly expanding offline point of sale results. 

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Shopify Inc Registered Shs -A- Subord Vtg SHOP★★★★ 7 May 2025 21:46, UTC

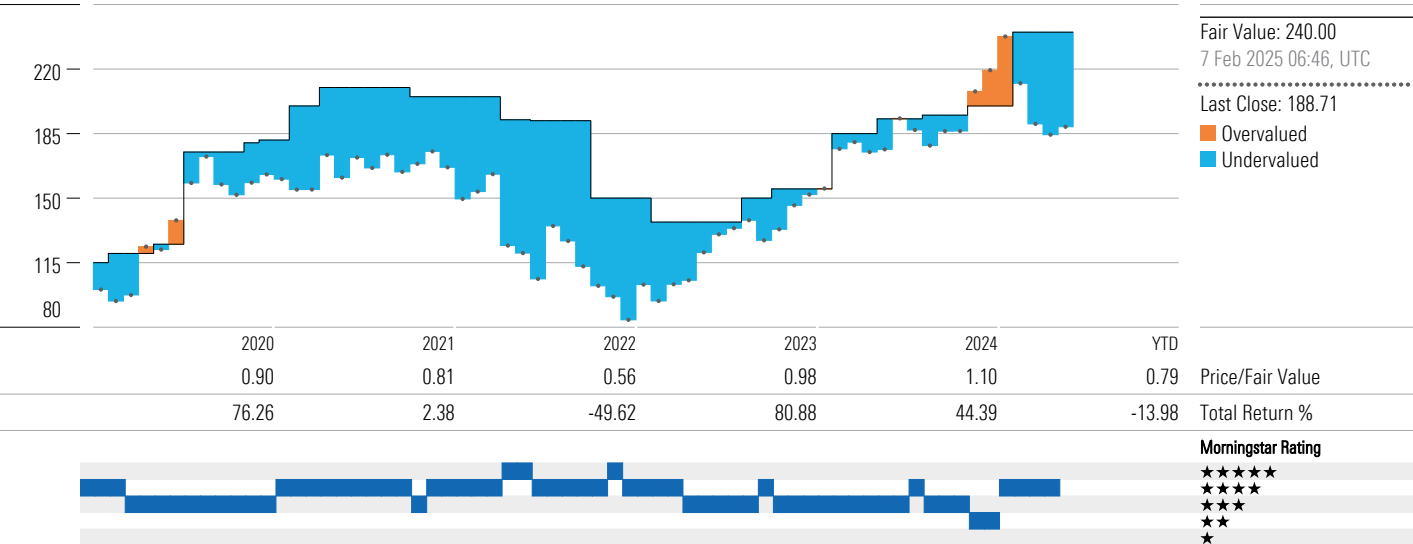
Competitors Price vs. Fair Value

Adobe Inc ADBE



Total Return % as of 07 May 2025. Last Close as of 07 May 2025. Fair Value as of 12 Dec 2024 05:50, UTC.

Amazon.com Inc AMZN



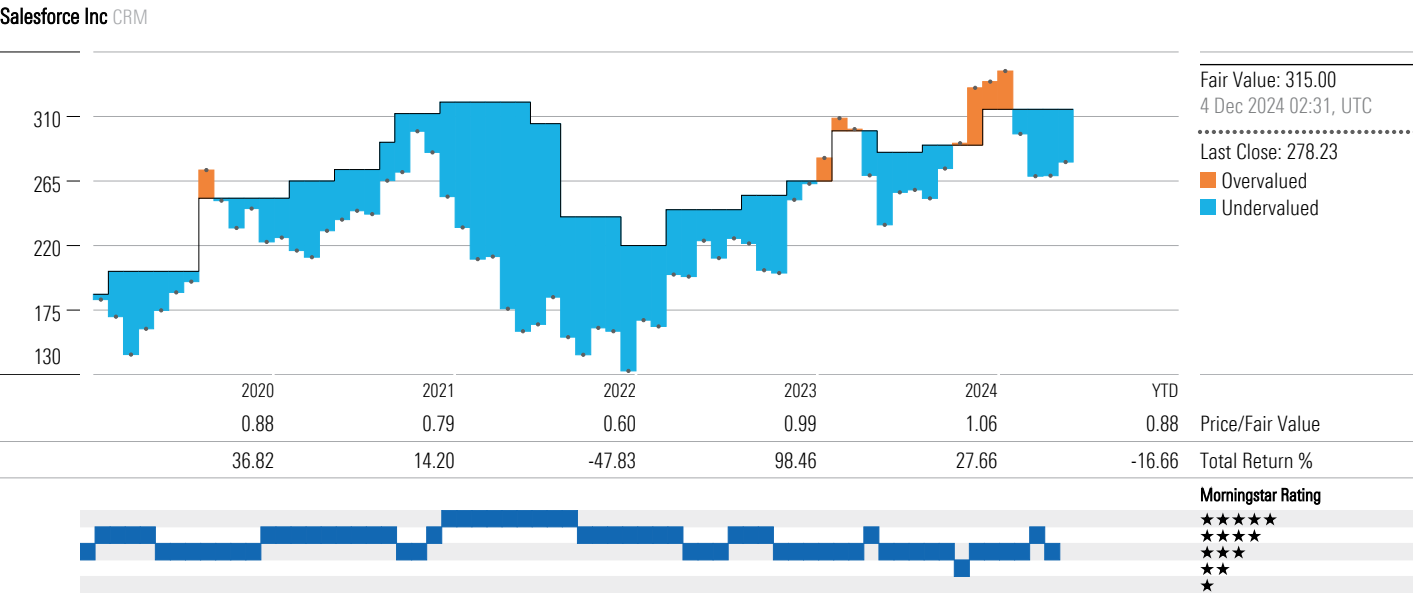
Total Return % as of 07 May 2025. Last Close as of 07 May 2025. Fair Value as of 7 Feb 2025 06:46, UTC.

Shopify Inc Registered Shs -A- Subord Vtg

SHOP★★★★★

7 May 2025 21:46, UTC

Competitors Price vs. Fair Value



Total Return % as of 07 May 2025. Last Close as of 07 May 2025. Fair Value as of 4 Dec 2024 02:31, UTC.

Shopify Inc Registered Shs -A- Subord Vtg SHOP ★★★★★ 7 May 2025 21:46, UTC

Last Price 94.50 USD 7 May 2025	Fair Value Estimate 120.00 USD 11 Feb 2025 19:40, UTC	Price/FVE 0.79	Market Cap 120.52 USD Bil 8 May 2025	Economic Moat™ Wide	Equity Style Box Large Growth	Uncertainty Very High	Capital Allocation Standard	ESG Risk Rating Assessment¹ 2 Apr 2025 05:00, UTC
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Morningstar Valuation Model Summary

Financials as of 11 Feb 2025

Fiscal Year, ends 31 Dec	Actual			Forecast				
	2022	2023	2024	2025	2026	2027	2028	2029
Revenue (USD Mil)	5,600	7,060	8,880	10,939	13,412	16,194	19,270	22,739
Operating Income (USD Mil)	-822	-1,418	1,075	1,511	1,990	2,494	3,064	3,741
EBITDA (USD Mil)	-732	-1,352	1,111	1,555	2,043	2,557	3,157	3,841
Adjusted EBITDA (USD Mil)	-732	-1,352	1,111	1,555	2,043	2,557	3,157	3,841
Net Income (USD Mil)	-3,460	132	2,019	1,282	1,680	1,954	2,396	2,919
Adjusted Net Income (USD Mil)	48	947	1,635	1,336	1,718	2,542	3,166	3,910
Free Cash Flow To The Firm (USD Mil)	125	-692	3,387	1,013	2,061	2,397	3,038	3,808
Weighted Average Diluted Shares Outstanding (Mil)	1,266	1,296	1,302	1,305	1,305	1,305	1,305	1,305
Earnings Per Share (Diluted) (USD)	-2.73	0.10	1.55	0.98	1.29	1.50	1.84	2.24
Adjusted Earnings Per Share (Diluted) (USD)	0.04	0.73	1.26	1.02	1.32	1.95	2.43	3.00
Dividends Per Share (USD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Margins & Returns as of 11 Feb 2025

	Actual				Forecast				
	3 Year Avg	2022	2023	2024	2025	2026	2027	2028	2029 5 Year Avg
Operating Margin %	-7.6	-14.7	-20.1	12.1	13.8	14.8	15.4	15.9	16.5 15.3
EBITDA Margin %	—	-13.1	-19.2	12.5	14.2	15.2	15.8	16.4	16.9 —
Adjusted EBITDA Margin %	—	-13.1	-19.2	12.5	14.2	15.2	15.8	16.4	16.9 15.7
Net Margin %	-12.4	-61.8	1.9	22.7	11.7	12.5	12.1	12.4	12.8 12.3
Adjusted Net Margin %	10.9	0.9	13.4	18.4	12.2	12.8	15.7	16.4	17.2 14.9
Free Cash Flow To The Firm Margin %	10.2	2.2	-9.8	38.1	9.3	15.4	14.8	15.8	16.8 14.4

Growth & Ratios as of 11 Feb 2025

	Actual				Forecast				
	3 Year CAGR	2022	2023	2024	2025	2026	2027	2028	2029 5 Year CAGR
Revenue Growth %	24.4	21.4	26.1	25.8	23.2	22.6	20.7	19.0	18.0 20.7
Operating Income Growth %	58.8	-406.1	72.4	-175.8	40.6	31.7	25.3	22.9	22.1 28.3
EBITDA Growth %	-138.6	-318.5	84.8	-182.2	39.9	31.4	25.1	23.5	21.7 28.3
Adjusted EBITDA Growth %	49.1	-318.5	84.8	-182.2	39.9	31.4	25.1	23.5	21.7 28.2
Earnings Per Share Growth %	-12.2	-219.4	-103.7	1422.5	-36.7	31.1	16.3	22.6	21.8 7.6
Adjusted Earnings Per Share Growth %	-12.2	-94.1	1845.2	71.9	-18.5	28.6	47.9	24.5	23.5 7.6

Valuation as of 11 Feb 2025

	Actual			Forecast				
	2022	2023	2024	2025	2026	2027	2028	2029
Price/Earning	867.8	106.7	84.4	92.6	71.6	48.5	38.9	31.5
Price/Sales	7.9	14.2	15.5	11.2	9.2	7.6	6.4	5.4
Price/Book	5.3	11.1	12.0	9.6	8.5	7.5	6.5	5.7
Price/Cash Flow	—	—	—	—	—	—	—	—
EV/EBITDA	-55.5	-71.3	120.8	76.3	58.1	46.4	37.6	30.9
EV/EBIT	-49.4	-68.0	124.9	78.5	59.6	47.6	38.7	31.7
Dividend Yield %	—	—	—	—	—	—	—	—
Dividend Payout %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Free Cash Flow Yield %	—	—	—	—	—	—	—	—

Operating Performance / Profitability as of 11 Feb 2025

Fiscal Year, ends 31 Dec	Actual			Forecast				
	2022	2023	2024	2025	2026	2027	2028	2029
ROA %	-32.2	1.2	14.5	9.0	10.2	10.2	10.8	11.3
ROE %	-42.0	1.5	17.5	10.0	11.6	11.9	12.7	13.4
ROIC %	13.3	3.9	19.2	20.5	21.6	22.7	23.4	23.7

Shopify Inc Registered Shs -A- Subord Vtg SHOP ★★★★★ 7 May 2025 21:46, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment¹
94.50 USD 7 May 2025	120.00 USD 11 Feb 2025 19:40, UTC	0.79	120.52 USD Bil 8 May 2025	Wide	Large Growth	Very High	Standard	2 Apr 2025 05:00, UTC

Financial Leverage (Reporting Currency)

Fiscal Year, ends 31 Dec	Actual			Forecast				
	2022	2023	2024	2025	2026	2027	2028	2029
Debt/Capital %	3.1	1.1	—	-0.5	-0.5	-0.5	-0.4	-0.4
Assets/Equity	1.3	1.2	1.2	1.1	1.1	1.2	1.2	1.2
Net Debt/EBITDA	5.0	2.9	—	-3.9	-3.3	-2.8	-2.6	-2.4
Total Debt/EBITDA	-1.9	-0.9	—	-0.6	-0.4	-0.4	-0.3	-0.2
EBITDA/ Net Interest Expense	-0.3	0.8	2.9	-14.0	-15.0	-15.5	-16.1	-16.6

Forecast Revisions as of 11 Feb 2025

Prior data as of 12 Nov 2024	2025		2026		2027	
	Current	Prior	Current	Prior	Current	Prior
Fair Value Estimate Change (Trading Currency)	120.00	104.85	—	—	—	—
Revenue (USD Mil)	10,939	8,768	13,412	10,741	16,194	13,051
Operating Income (USD Mil)	1,511	1,085	1,990	1,178	2,494	1,442
EBITDA (USD Mil)	1,555	1,120	2,043	1,220	2,557	1,493
Net Income (USD Mil)	1,336	1,845	1,718	1,179	2,542	1,775
Earnings Per Share (Diluted) (USD)	0.98	0.86	1.29	0.78	1.50	0.89
Adjusted Earnings Per Share (Diluted) (USD)	1.02	1.42	1.32	0.91	1.95	1.36
Dividends Per Share (USD)	0.00	0.00	0.00	0.00	0.00	0.00

Key Valuation Drivers as of 11 Feb 2025

Cost of Equity %	9.0
Pre-Tax Cost of Debt %	5.5
Weighted Average Cost of Capital %	8.8
Long-Run Tax Rate %	26.5
Stage II EBI Growth Rate %	14.8
Stage II Investment Rate %	35.0
Perpetuity Year	20

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

Discounted Cash Flow Valuation as of 11 Feb 2025

	USD Mil
Present Value Stage I	25,833
Present Value Stage II	34,925
Present Value Stage III	88,913
Total Firm Value	149,670
Cash and Equivalents	5,479
Debt	0
Other Adjustments	0
Equity Value	155,149
Projected Diluted Shares	1,305
Fair Value per Share (USD)	120.00

Shopify Inc Registered Shs -A- Subord Vtg SHOP★★★★★ 7 May 2025 21:46, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment¹
94.50 USD 7 May 2025	120.00 USD 11 Feb 2025 19:40, UTC	0.79	120.52 USD Bil 8 May 2025	Wide	Large Growth	Very High	Standard	2 Apr 2025 05:00, UTC

ESG Risk Rating Breakdown

Exposure

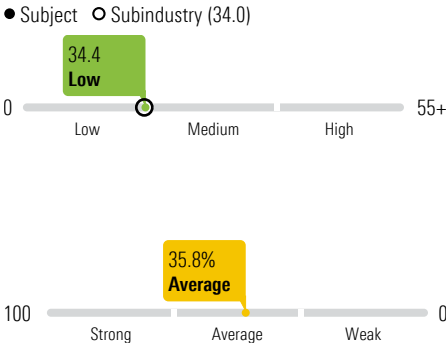
Company Exposure¹	34.4
– Manageable Risk	32.1
Unmanageable Risk²	2.3

Management

Manageable Risk	32.1
– Managed Risk³	11.5
Management Gap⁴	20.6

Overall Unmanaged Risk

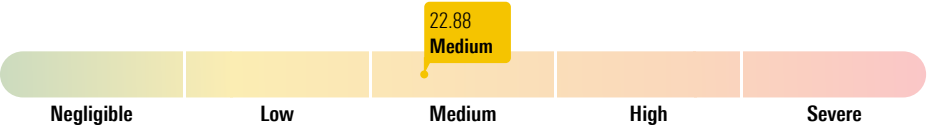
22.9



- ▶ 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 35.8% 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 Assessment⁵



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

Company Name	Exposure	Management	ESG Risk Rating
Shopify Inc	34.4 Low 0 —●— 55+	35.8 Average 100 —●— 0	22.9 Medium 0 —●— 40+
Salesforce Inc	35.2 Medium 0 —●— 55+	52.1 Strong 100 —●— 0	18.1 Low 0 —●— 40+
Adobe Inc	33.2 Low 0 —●— 55+	61.0 Strong 100 —●— 0	14.4 Low 0 —●— 40+
Amazon.com Inc	39.2 Medium 0 —●— 55+	36.4 Average 100 —●— 0	26.1 Medium 0 —●— 40+
—	— — 0 —●— 55+	— — 100 —●— 0	— — 0 —●— 40+

Appendix

Historical Morningstar Rating

Shopify Inc Registered Shs -A- Subord Vtg SHOP 7 May 2025 21:46, 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
★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★
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
★	★	★	★	★	★	★	★	★	★	★	★

Adobe Inc ADBE 7 May 2025 21:27, 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
★★★★	★★★★	★★★★	★★★★	★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★
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
★★★	★★	★★	★★	★	★★	★★	★★	★★★	★★★	★★★	★★★

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
—	—	—	—	—	—	—	★★★★	★★★★	★★★★	★★★★	★★
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
★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★★	★★★★	★★★★

Salesforce Inc CRM 7 May 2025 21:34, 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 ★★★
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 ★★★

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 single-point 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 working capital accounts, and capital spending. Based on these projections, we calculate earnings before interest, after taxes (EBIT) 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 EBIT 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		
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.

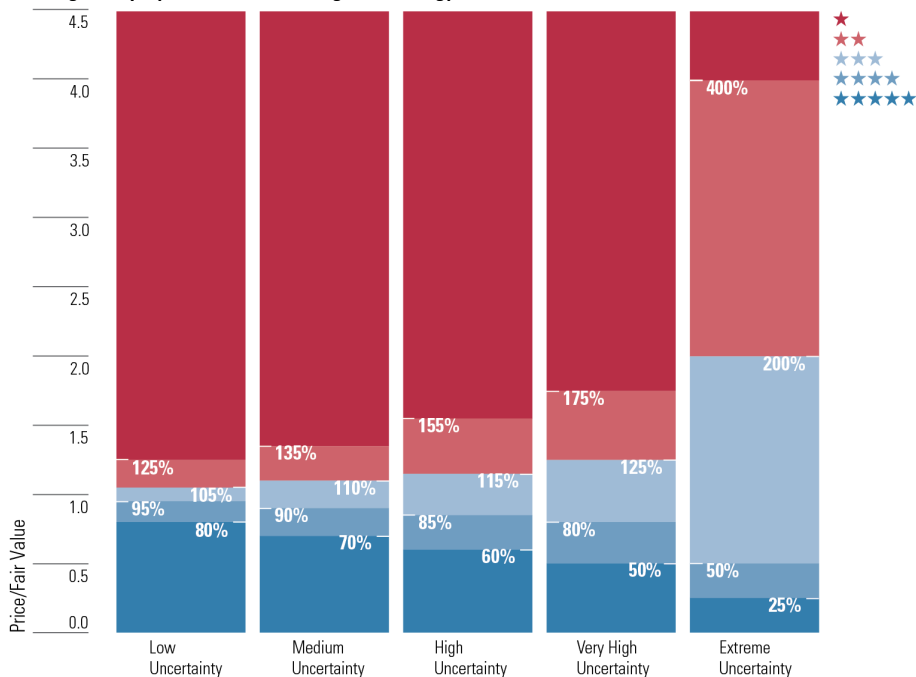
4. Market Price

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/

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