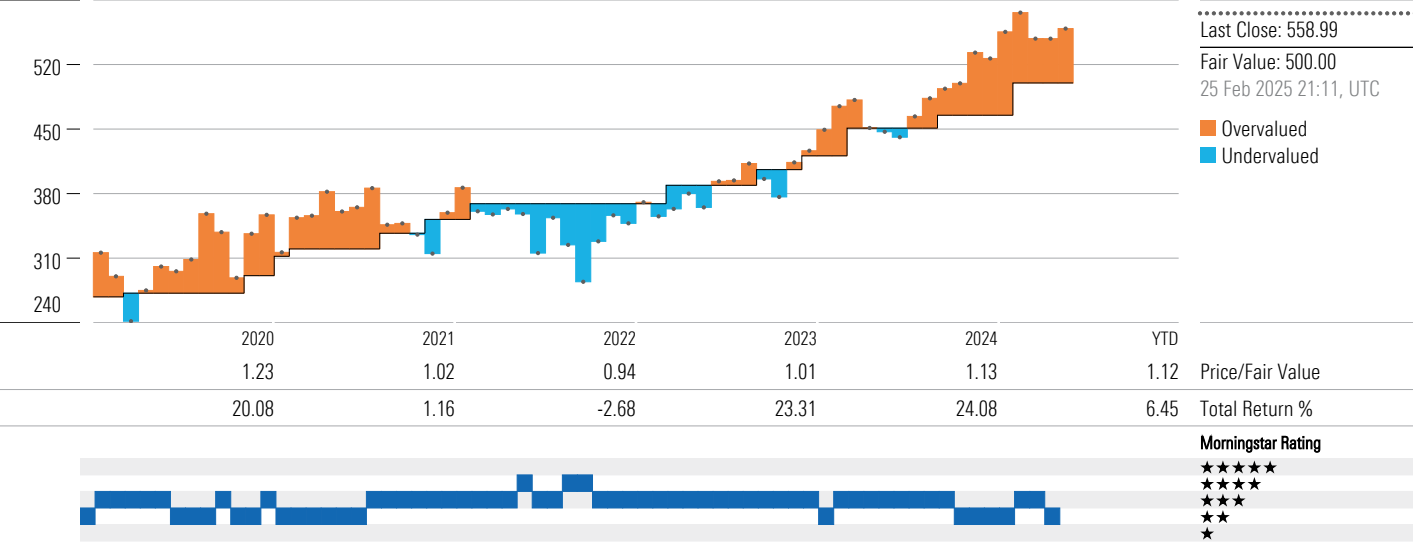


Mastercard Inc Class A MA★★7 May 2025 21:37, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment¹
558.99 USD 6 May 2025	500.00 USD 25 Feb 2025 21:11, UTC	1.12	514.27 USD Bil 7 May 2025	Wide	Large Growth	Medium	Standard	 2 Apr 2025 05:00, UTC

Price vs. Fair Value



Total Return % as of 06 May 2025. Last Close as of 06 May 2025. Fair Value as of 25 Feb 2025 21:11, UTC.

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

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

# Mastercard Earnings: Results Maintain Recent Trajectory, but Uncertainty Ahead

**Analyst Note** Brett Horn, CFA, Senior Equity Analyst, 1 May 2025

Mastercard's first-quarter results contained no major surprises and largely mirrored what we saw from Visa. While consumer spending is holding steady for now, we see uncertainty ahead.

**Why it matters:** On a constant-currency basis, net revenue grew 17% year over year, which was in line with the previous quarter. In our view, recent results highlight the strong growth the wide-moat company can achieve in a stable environment.

- Year-over-year gross dollar volume growth was 9% on a constant currency basis, with transactions up 9% as well. Volume growth dipped a bit sequentially but held within the range we've seen over the past year. Like Visa, Mastercard has also seen a slight uptick in growth in April.
- The tailwind from the bounce-back in travel has been falling off and that continued during the first quarter. Constant-currency cross-border volume excluding intra-Europe transactions—which are priced similarly to domestic transactions—grew 16% year over year in the March quarter, down from 20% growth in the fourth quarter. We believe most of the benefit from the travel recovery has been realized.

**The bottom line:** We will maintain our \$500 per share fair value estimate and see shares as modestly overvalued.

- Mastercard's management largely echoed comments we recently heard from Visa, suggesting

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Sector	Industry
 Financial Services	Credit Services

## Business Description

Mastercard is the second-largest payment processor in the world, having processed close to \$10 trillion in volume during 2024. Mastercard operates in over 200 countries and processes transactions in over 150 currencies.

consumer spending is holding steady for now. However, Mastercard's results remain leveraged to consumer spending, and particularly to some discretionary areas such as cross-border volume. In our view, tariffs create significant near-term uncertainty going forward, and it will take time for the impact to be seen.

- Mastercard saw solid margin improvement, with adjusted operating margins (based on net revenue) increasing 50 basis points year over year. Client incentive constant currency growth of 15% was relatively muted, and a bit below revenue growth.

## Business Strategy & Outlook Brett Horn, CFA, Senior Equity Analyst, 25 Feb 2025

Mastercard has multiple characteristics that should draw investors' attention. First, despite ongoing evolution in the payment space, we think a wide moat surrounds the business and view Mastercard's position in the current global electronic payment infrastructure as essentially unassailable. Second, Mastercard benefits from the ongoing shift toward electronic payments, which should provide plenty of opportunities to utilize its wide moat to create value over the long term. Digital payments, on a global basis, surpassed cash payments just a few years ago, suggesting that this trend still has a lot of room to run, and we think emerging markets could offer a further leg of growth even as growth in developed markets starts to slow. Finally, Mastercard is something of a tollbooth business, and the company is relatively agnostic to smaller shifts within the electronic payment space, as it earns fees regardless of whether payment is credit, debit, or mobile.

Mastercard has faced some volatility over the past few years. Cross-border transactions, which are particularly lucrative for the networks, came under heavy pressure due to the fallout from the pandemic and a reduction in global travel. We expected a full recovery, and we believe that has largely played out. Although the ongoing bounceback remains a modest tailwind, we think the benefit is now mostly realized. From a longer-term point of view, we think it is likely that smaller and more regional networks are building out capacity for cross-border transactions, which could eat into growth a bit in the coming years, but we haven't seen a material effect yet.

In the near term, we expect Mastercard's results to normalize to a level in line with the prepandemic period. We see the state of the economy as Mastercard's biggest risk. A downturn in the economy would slow overall growth, as Mastercard's revenue is sensitive to the volume and dollar amount of consumer transactions. But we don't see any secular industry trends that will impede Mastercard's ability to maintain double-digit growth in the coming years, and the company looks poised to continue to modestly outperform its larger peer, Visa.

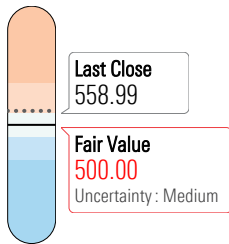
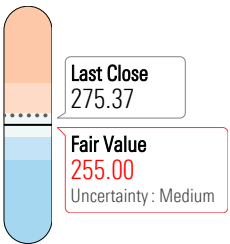
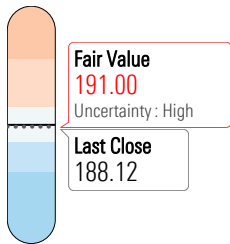
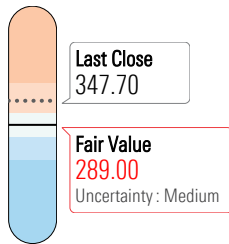
## Bulls Say Brett Horn, CFA, Senior Equity Analyst, 25 Feb 2025

- Mastercard historically has outperformed Visa in terms of growth. Its smaller size and some leveling in market share between the two could maintain this trend.

# Mastercard Inc Class A MA ★★ 7 May 2025 21:37, UTC

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## Competitors

	Mastercard Inc Class A MA	American Express Co AXP	Discover Financial Services DFS	Visa Inc Class A V
				
Economic Moat	Wide	Wide	Narrow	Wide
Currency	USD	USD	USD	USD
Fair Value	500.00 25 Feb 2025 21:11, UTC	255.00 24 Feb 2025 19:22, UTC	191.00 24 Mar 2025 19:08, UTC	289.00 13 Dec 2024 19:08, UTC
1-Star Price	675.00	344.25	296.05	390.15
5-Star Price	350.00	178.50	114.60	202.30
Assessment	Overvalued 7 May 2025	Fairly Valued 7 May 2025	Fairly Valued 7 May 2025	Overvalued 7 May 2025
Morningstar Rating	★★ 7 May 2025 21:37, UTC	★★★ 7 May 2025 21:28, UTC	★★★ 7 May 2025 21:36, UTC	★★ 7 May 2025 21:40, UTC
Analyst	Brett Horn, Senior Equity Analyst	Michael Miller, Equity Analyst	Michael Miller, Equity Analyst	Brett Horn, Senior Equity Analyst
Capital Allocation	Standard	Standard	Standard	Standard
Price/Fair Value	1.12	1.08	0.99	1.21
Price/Sales	17.73	2.90	2.63	18.46
Price/Book	76.24	6.19	2.64	17.98
Price/Earning	37.22	19.86	10.05	32.68
Dividend Yield	0.51%	1.06%	1.49%	0.64%
Market Cap	514.27 Bil	193.53 Bil	47.60 Bil	670.20 Bil
52-Week Range	428.86—582.23	220.43—326.28	119.95—205.76	252.70—366.54
Investment Style	Large Growth	Large Blend	Mid Growth	Large Growth

- There is still plenty of runway for growth in electronic payments. Electronic payments only surpassed cash payments on a global basis a few years ago.
- Management is appropriately focused on long-term growth opportunities and not near-term margins.

### Bears Say Brett Horn, CFA, Senior Equity Analyst, 25 Feb 2025

- Mastercard is a distant number-two player in a scalable industry, which could hamper long-term margins.
- The oligopolistic nature of the industry makes Visa and Mastercard a target for regulators, and the companies have historically paid some large fines.
- UnionPay provides an example of how governments could favor local networks, and this could shut Mastercard out of some emerging-market opportunities.

### Economic Moat Brett Horn, CFA, Senior Equity Analyst, 25 Feb 2025

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Payment networks such as Mastercard benefit, unsurprisingly, from a network effect. The more consumers that are plugged into a payment network, the more attractive that payment network becomes for merchants, which, in turn, makes the network more convenient for consumers and so on. In our view, this dynamic explains why a handful of networks have come to dominate electronic payments over time, and at this point, Mastercard has reached essentially universal acceptance in most developed markets. While the network effect is the initial and primary driver of economic moats in the space, the highly scalable nature of payment processing leads to sizable cost advantages for large payment networks, which further cements their competitive positions. For the dominant payment networks with global footprints, such as Mastercard, the network effect and resulting cost advantage is strong enough to lead to a wide moat, in our view.

Mastercard's origin lies in the formation of the Interbank Card Association by a group of banks that acquired Master Charge in 1969 and adopted the company's current logo. In the decades since, Mastercard has been one of the largest beneficiaries of the ongoing shift toward using electronic payments. During 2024, the company processed over \$8 trillion in purchase transactions. Visa, meanwhile, processes roughly twice as many transactions as Mastercard and leads it in terms of market share in every major global region. However, Mastercard has a similarly commanding lead over any other network and is the only other company with a truly global presence. Mastercard's global market share for credit and debit cards has been estimated at 29% and 24%, respectively, a level that dwarfs competitors outside of Visa. Mastercard may face some competition in processing domestic transactions, but we think the company's global presence is a relatively unique asset that allows the company to process cross-border transactions and charge materially higher fees in this area. We don't believe that building a new network with a comparable size and reach is realistic over any foreseeable time line and view Mastercard's position within the current global electronic payment infrastructure as essentially unassailable.

Mastercard has translated its dominant competitive position into an enviable level of profitability. Operating margins (using net revenue) in 2024 were 58%, and margins have generally trended upward over time due to the scalability of the business. Further, given the relatively asset-light nature of the business, returns on invested capital are multiple above any reasonable estimate of the cost of capital.

## Fair Value and Profit Drivers Brett Horn, CFA, Senior Equity Analyst, 25 Feb 2025

We are increasing our fair value estimate for Mastercard to \$500 per share from \$465, due to time value since our last update and some modest changes to our assumptions. Our new fair value estimate equates to 31.6 times projected 2025 earnings, adjusted for one-time expenses.

While revenue declined in 2020 due to the coronavirus and that issue bled into the start of 2021, growth bounced back quickly and Mastercard has enjoyed outside growth the past few years. We think

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conditions have now normalized and we expect a return to growth levels more in line with the prepandemic period. We think secular trends and improving share should allow Mastercard to maintain strong growth rates over the next five years. We project net revenue to grow at a 12% compound annual growth rate. We think growth will be increasingly fueled by international markets, and Mastercard's mix leaves it relatively well-positioned.

While margins were materially pressured in 2020, profitability has recovered since, and margins (based on net revenue) are now slightly ahead of the prepandemic level. In the future, we expect operating margins (based on net revenue) to improve from 58% in 2024 to 61% by 2029, based on the scalability of the business. This equates to an annual average improvement of about 70 basis points. On a gross revenue basis, we expect increasing client incentives to result in basically flat margins over the projection period. Given the company's history of fines and one-time charges, we include ongoing one-time costs roughly in line with historical averages in our projections, but these costs are excluded from the margin levels above.

We use a cost of equity of 9%.

## Risk and Uncertainty Brett Horn, CFA, Senior Equity Analyst, 25 Feb 2025

We assign Mastercard a Medium Morningstar Uncertainty Rating.

Mastercard's revenue is tied to the amount and volume of consumer purchases, which creates significant macroeconomic sensitivity. Cross-border transactions are highly lucrative for Mastercard, making the company particularly sensitive to any swings in these types of transactions. Cross-border transactions are disproportionately tied to travel and online transactions, both of which tend to be sensitive to macroeconomic conditions.

Both Visa and Mastercard have paid substantial fines historically related to the oligopolistic nature of the industry, and we see legal and regulatory risk as intrinsic to the business model, given merchants' desires to lower fees.

While Visa's and Mastercard's positions in the current electronic payment infrastructure are largely set, the payment industry continues to evolve in ways that could reduce their volume or profitability. Some governments have shown a preference for local payment networks, which could freeze Mastercard out of certain markets and impede the value it drives from its global network.

We see the company's largest environmental, social, and governance risk as data security. Any company involved in processing payments has potential exposure to breaches in its systems.

## Capital Allocation Brett Horn, CFA, Senior Equity Analyst, 25 Feb 2025

Our Morningstar Capital Allocation Rating for Mastercard is Standard. In our opinion, the company's balance sheet is sound, its capital investment decisions are fair, and its capital return strategy is

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appropriate. We have a favorable view of the management team at Mastercard, but we believe the company's wide moat and positive secular tailwinds have been the dominant factor behind its strong historical results.

Ajay Banga served as the company's CEO from 2010 until the end of 2020. Banga initially moved to the chairman position, but then retired at the end of 2021. Michael Miebach, who has been with the company for over 10 years and previously served as chief product officer, replaced Banga as CEO. We like that Miebach held leadership positions in the company across geographic regions, as we expect the company's growth to come increasingly from international markets over time. Still, given that the company turned to a company veteran for the CEO role, we didn't expect any major strategic pivots as a result of this change, and think this view has largely played out. We view staying the course as the right move for Mastercard.

While we attribute the company's strong historical performance primarily to the wide moat that surrounds the business and secular tailwinds, it is notable that Mastercard has generally outperformed Visa in terms of growth in recent years. This suggests management is effectively exploiting the growth opportunities the company has in front of it. Further, we like that management has been hesitant to commit to operating margin targets over the short term. We believe the company still has significant growth opportunities, and the nature of the business requires reinvestment through the income statement. We think focusing on near-term profitability targets could hamper long-term value creation, and we think management is right to maintain flexibility on this score, although we think the scalability of the business model will allow for margin improvement over time.

While Mastercard has completed some acquisitions, they have generally been small and sporadic. We think the company's competitive position argues against aggressive M&A, and we are pleased that management has shown discipline in this regard.

Management historically has returned essentially all of Mastercard's profitability to shareholders and we appreciate the company's diligence on this front. Dividends per share have doubled over the past five years. We like this trend and think committing to a larger dividend helps to signal management's commitment to returning capital.

## Analyst Notes Archive

### Mastercard Earnings: Growth Picks Up Brett Horn, CFA, Senior Equity Analyst, 30 Jan 2025

Mastercard's recent results suggested that consumer spending was largely holding steady as impacts from one-time issues started to fade. But fourth-quarter results suggest the environment may be improving a bit. We will maintain our \$465 fair value estimate. We see the shares as modestly overvalued. The quarter suggests the near-term outlook may be a little better than we had anticipated, and we think the market is reacting to that, but we believe significant uncertainty still exists on this

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front. On a constant-currency basis, net revenue grew 16% year over year, up from 14% last quarter. Payment volume grew 11.6% on a constant-currency basis, up from 10.5% in the previous quarter. Management pointed to low unemployment and moderate inflation as supportive of consumer spending. Cross-border volume has been a tailwind for the networks over the past couple of years, as the bounceback in travel from pandemic lows drove outsize growth. That tailwind has been fading in recent quarters, but this quarter bucked the trend. Constant-currency cross-border volume, excluding intra-Europe transactions—which are priced similarly to domestic transactions—grew 20% year over year, up from 17% last quarter. We believe most of the benefit from the travel recovery has been realized, but this quarter suggests there could be further upside. Still, we'd like to see more than one quarter to materially revise our view. Adjusted operating margin improved to 56.3% from 56.2% last year. For the full year, the company saw a 40-basis-point improvement. Margin improvement appears to have slowed, but we don't read much into near-term margin results, as we think lower margins are often driven by investments for growth. Client incentives grew 17% year over year on a constant-currency basis. We think incentives growing faster than revenue supports our view that Mastercard will not achieve margin improvement on a gross revenue basis over time.

## Mastercard Earnings: Settling Into a Groove Brett Horn, CFA, Senior Equity Analyst, 31 Oct 2024

We think Mastercard's third-quarter earnings largely mirrored what we saw from Visa, although Mastercard appears to be performing a bit better at the margin. In recent quarters, we've seen pandemic, political, and macro effects dissipate, and we see this quarter as further evidence of stability. We think Mastercard's attractive long-term growth prospects and its strong profitability become more clear in this type of situation. We will maintain our \$465 fair value estimate for the wide-moat company and see shares as about fairly valued. Constant currency net revenue increased 14% year over year, a 1-percentage-point improvement from the previous quarter. Payment volume was up 10% constant currency, also up slightly from last quarter. Overall, though, we think results from the networks suggest consumer spending is holding steady. Cross-border volume has been the one area seeing an ongoing tailwind over the past couple of years. But this tailwind has been fading, and this quarter provided further evidence. Constant-currency cross-border volume, excluding intra-Europe transactions—which are priced similarly to domestic transactions—grew 17% year over year in the quarter, down a bit from 18% in the last quarter. While Mastercard is seeing cross-border growth fade at a similar rate as Visa, its absolute growth is higher, suggesting its volumes might not have fully normalized yet. Adjusted operating margins (based on net revenue) improved to 59.3%, compared with 58.8% last year. The rate of margin improvement was in line with what we've seen from the company this year and with our long-term expectations. Mastercard is outperforming Visa on this front, but we don't read much into near-term margin results, as we think lower margins are often driven by investments for growth. Client incentives grew 19% year over year on a constant currency basis, highlighting how margin improvement on a gross revenue basis is a much more difficult task.



# Mastercard Inc Class A MA ★★ 7 May 2025 21:37, UTC

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## Mastercard: Buying Recorded Future for \$2.65 Billion Brett Horn, CFA, Senior Equity Analyst, 12 Sep 2024

Mastercard announced that it will acquire Recorded Future for \$2.65 billion. Recorded Future is a cyber defense company with 1,900 customers across 75 countries. Mastercard believes the addition of Recorded Future will add to its fraud prevention capabilities. Controlling fraud within its payment networks is an ongoing issue for Mastercard, so investing in this area seems appropriate. Due to its wide moat, we don't think Mastercard needs to be aggressive in terms of mergers and acquisitions, but smaller deals like this that add certain capabilities make sense, in our view. However, the deal is not large enough to have a material impact on our \$465 fair value estimate, which we maintain. We see Mastercard's shares as fairly valued at the moment.

## Mastercard Earnings: Results Suggest Consumer Spending Remains Steady Brett Horn, CFA, Senior Equity Analyst, 31 Jul 2024

While Mastercard's second-quarter results show many of the same dynamics we saw from Visa, Mastercard appears to be modestly outperforming its peer at the moment. We continue to believe that Mastercard has slightly stronger long-term prospects given its smaller size and lower exposure to relatively mature markets. We will maintain our \$451 fair value estimate for the wide-moat company and see shares as fairly valued at the moment. Net revenue increased 11% year over year, or 13% on a constant-currency basis. Gross dollar volume was up 9% on a constant-currency basis, and switched transactions were up 11%. This represented a slight decline from the previous quarter, but this appears to be mainly due to the inclusion of leap year last quarter. Overall, while we think macro conditions remain the biggest potential swing factor in the near term, these results suggest that consumer spending remains relatively stable for now. Cross-border volume is particularly lucrative for Mastercard and has been a significant tailwind recently. However, we've seen signs that the impact is tapering off for both Visa and Mastercard, and this quarter provided further evidence. Constant-currency cross-border volume, excluding intra-Europe transactions—which are priced similarly to domestic transactions—grew 18% year over year in the quarter, down slightly from 19% in the last quarter. While growth in this area is still healthy and Mastercard is modestly outperforming Visa, the recovery in cross-border volume increasingly looks to be largely realized. Adjusted operating margin for the quarter was 59.4% compared with 58.6% last year. With Mastercard seeing relatively strong growth, it appears to be benefiting from some scale benefits. Client incentives increased 16% year over year on a constant-currency basis. With client incentives resuming their historical upward path, margin improvement on a gross revenue basis will likely be harder to realize.

## Visa and Mastercard: Judge May Not Approve Settlement Brett Horn, CFA, Senior Equity Analyst, 14 Jun 2024



# Mastercard Inc Class A MA ★★ 7 May 2025 21:37, UTC

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In March, Visa and Mastercard announced that they had reached a settlement to a long-standing antitrust lawsuit. As part of the agreement, the networks would slightly lower credit interchange fees and cap these fees at the current level for five years. At the time, we were happy to see this lawsuit seemingly resolved. But according to The Wall Street Journal, the judge has now informed Visa and Mastercard that she deems these changes inadequate and is unlikely to approve the settlement. This would presumably force the networks to arrange a new settlement or go to trial. While this is an obvious setback and we would prefer to see this matter closed as quickly as possible, we believe Visa and Mastercard's unique competitive positions and their wide moats create ongoing legal and regulatory event risk, and this lawsuit represents just one piece of that. We will maintain our \$272 and \$451 fair value estimates for Visa and Mastercard, respectively, and see shares for both companies as about fairly valued.

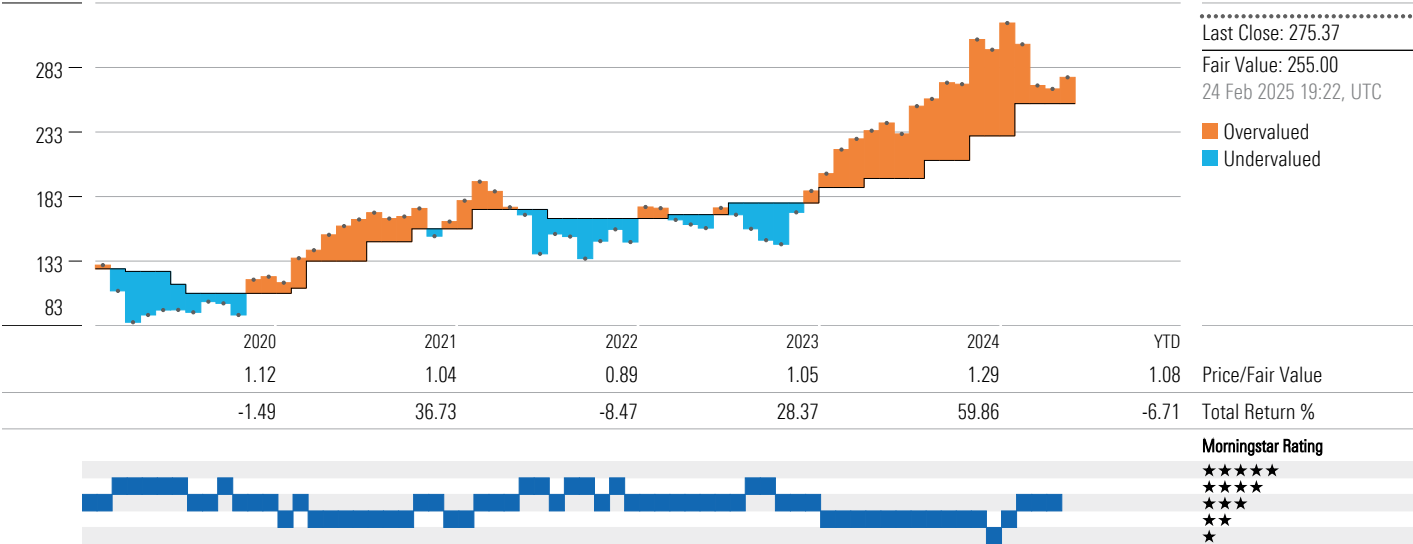
**Mastercard Earnings: A Stable Environment Highlights Mastercard's Strengths** Brett Horn,  
CFA, Senior Equity Analyst, 1 May 2024

Mastercard's first-quarter results show that the company is on a steady path and performing roughly in line with its peer Visa. Following the dramatic ups and downs of the pandemic and the ensuing recovery, we think Mastercard has settled into a more stable environment, and the company's first-quarter results are largely in line with our long-term expectations. We will maintain our \$451 fair value estimate and wide moat rating, and we consider shares fairly valued at the moment. Net revenue was up 11% year over year on a constant-currency basis. Gross dollar volume increased 10% on a constant-currency basis, and transactions were up 13%. While macro uncertainty exists, consumer spending appears to be holding for now, and we think the current environment highlights the solid growth the company can achieve over time, given favorable long-term secular tailwinds. Cross-border volume, which has been the most volatile area over the past few years, has now settled into a more stable groove. Constant-currency cross-border volume excluding intra-Europe transactions—which are priced similarly to domestic transactions—grew 19% year over year in the quarter, in line with the last quarter. Mastercard appears to be modestly outperforming Visa on this front. Cross-border growth is still a bit above our long-term expectations, but we think most of the benefit from the bounceback in travel has been realized. Adjusted operating margins (on a net revenue basis and excluding one-time items) increased to 58.8% from 58.2% last year. With solid growth, we think the scalability of the business is showing through. However, client incentives increased 20% year over year on a constant-currency basis. With incentives increasing again now that pandemic-related distortions have rolled off, margin improvement on a gross revenue basis will be much harder to come by. ■■

# Mastercard Inc Class A MA★★7 May 2025 21:37, UTC

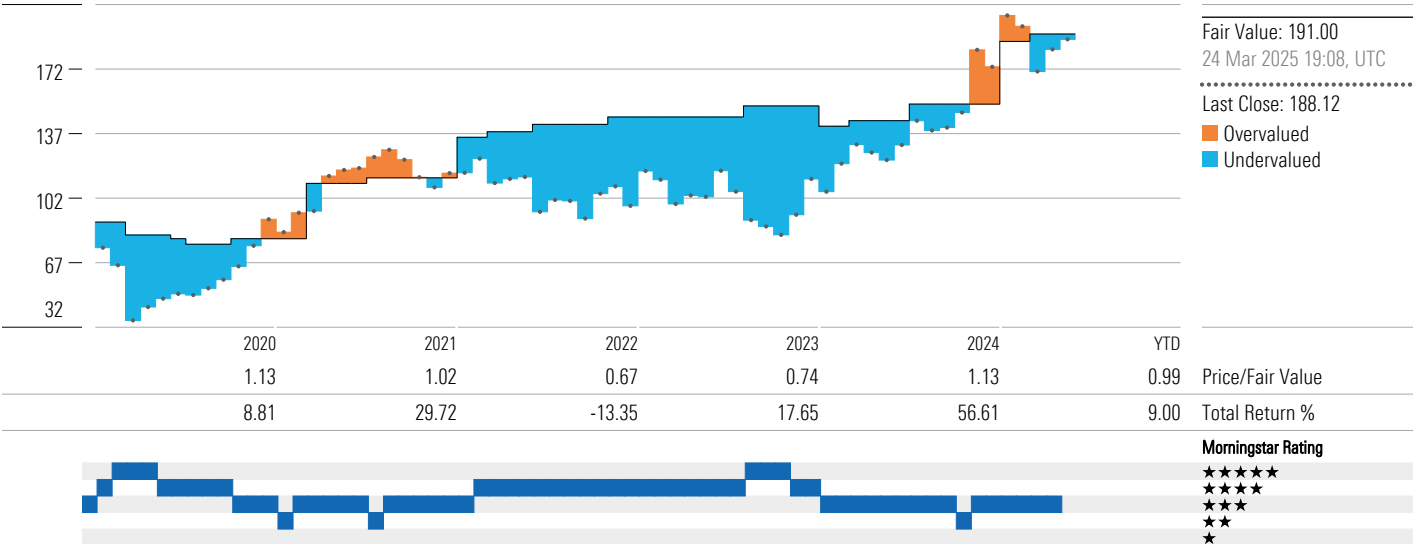
## Competitors Price vs. Fair Value

### American Express Co AXP



Total Return % as of 06 May 2025. Last Close as of 06 May 2025. Fair Value as of 24 Feb 2025 19:22, UTC.

### Discover Financial Services DFS



Total Return % as of 06 May 2025. Last Close as of 06 May 2025. Fair Value as of 24 Mar 2025 19:08, UTC.

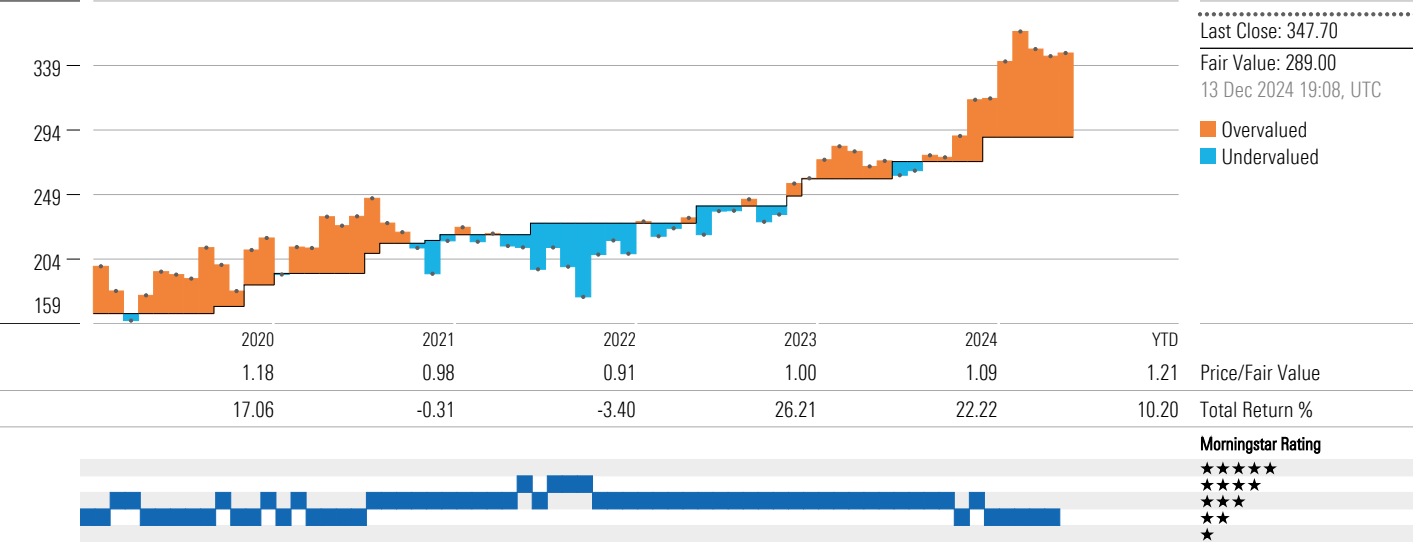
Mastercard Inc Class A

MA★★

7 May 2025 21:37, UTC

Competitors Price vs. Fair Value

Visa Inc Class A



Total Return % as of 06 May 2025. Last Close as of 06 May 2025. Fair Value as of 13 Dec 2024 19:08, UTC.

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## Morningstar Valuation Model Summary

### Financials as of 25 Feb 2025

Fiscal Year, ends 31 Dec	Actual			Forecast				
	2022	2023	2024	2025	2026	2027	2028	2029
Revenue (USD Mil)	35,321	40,279	45,796	51,608	58,193	65,677	73,732	82,572
Operating Income (USD Mil)	12,620	14,547	16,262	17,960	20,397	23,348	26,212	29,767
EBITDA (USD Mil)	12,953	15,013	16,797	18,808	21,341	24,401	27,381	31,064
Adjusted EBITDA (USD Mil)	12,953	15,013	16,797	18,808	21,341	24,401	27,381	31,064
Net Income (USD Mil)	9,930	11,195	12,874	14,101	16,054	18,206	20,430	22,973
Adjusted Net Income (USD Mil)	10,231	11,637	13,448	14,422	16,417	18,610	20,884	23,475
Free Cash Flow To The Firm (USD Mil)	10,243	11,292	13,628	13,918	16,223	18,325	20,574	23,077
Weighted Average Diluted Shares Outstanding (Mil)	971	946	927	906	882	860	836	812
Earnings Per Share (Diluted) (USD)	10.23	11.83	13.89	15.57	18.19	21.17	24.43	28.29
Adjusted Earnings Per Share (Diluted) (USD)	10.54	12.30	14.51	15.93	18.60	21.64	24.97	28.91
Dividends Per Share (USD)	1.96	2.28	2.64	3.04	3.49	4.02	4.62	5.31

### Margins & Returns as of 25 Feb 2025

	3 Year Avg	Actual			Forecast					5 Year Avg
		2022	2023	2024	2025	2026	2027	2028	2029	
Operating Margin %	34.8	35.7	36.1	35.5	34.8	35.1	35.6	35.6	36.1	34.8
EBITDA Margin %	—	36.7	37.3	36.7	36.4	36.7	37.2	37.1	37.6	—
Adjusted EBITDA Margin %	—	36.7	37.3	36.7	36.4	36.7	37.2	37.1	37.6	37.0
Net Margin %	28.0	28.1	27.8	28.1	27.3	27.6	27.7	27.7	27.8	27.6
Adjusted Net Margin %	29.1	29.0	28.9	29.4	28.0	28.2	28.3	28.3	28.4	28.2
Free Cash Flow To The Firm Margin %	28.9	29.0	28.0	29.8	27.0	27.9	27.9	27.9	28.0	27.7

### Growth & Ratios as of 25 Feb 2025

	3 Year CAGR	Actual			Forecast					2029 5 Year CAGR
		2022	2023	2024	2025	2026	2027	2028	2029	
Revenue Growth %	15.3	18.4	14.0	13.7	12.7	12.8	12.9	12.3	12.0	12.5
Operating Income Growth %	16.9	24.0	15.3	11.8	10.4	13.6	14.5	12.3	13.6	12.9
EBITDA Growth %	13.6	13.0	15.9	11.9	12.0	13.5	14.3	12.2	13.5	13.1
Adjusted EBITDA Growth %	13.6	13.0	15.9	11.9	12.0	13.5	14.3	12.2	13.5	13.1
Earnings Per Share Growth %	16.6	16.8	15.7	17.3	12.1	16.8	16.4	15.4	15.8	15.3
Adjusted Earnings Per Share Growth %	16.6	19.2	16.8	17.9	9.8	16.8	16.4	15.4	15.8	15.3

### Valuation as of 25 Feb 2025

	Actual			Forecast				
	2022	2023	2024	2025	2026	2027	2028	2029
Price/Earning	33.0	34.7	36.3	35.6	30.4	26.2	22.7	19.6
Price/Sales	9.5	9.9	10.5	10.0	8.8	7.8	7.0	6.2
Price/Book	53.6	58.3	75.2	85.2	96.3	95.0	97.0	97.1
Price/Cash Flow	—	—	—	—	—	—	—	—
EV/EBITDA	26.3	27.2	29.0	27.9	24.6	21.5	19.2	16.9
EV/EBIT	27.0	28.1	30.0	29.2	25.7	22.5	20.0	17.6
Dividend Yield %	0.6	0.5	0.5	0.5	0.6	0.7	0.8	0.9
Dividend Payout %	18.6	18.5	18.2	19.1	18.8	18.6	18.5	18.4
Free Cash Flow Yield %	—	—	—	—	—	—	—	—

### Operating Performance / Profitability as of 25 Feb 2025

Fiscal Year, ends 31 Dec	Actual			Forecast				
	2022	2023	2024	2025	2026	2027	2028	2029
ROA %	25.6	26.4	26.8	28.2	31.2	33.9	36.4	39.2
ROE %	155.7	160.0	197.6	232.9	307.8	353.0	415.7	482.3
ROIC %	73.5	72.0	79.9	112.4	198.9	236.9	270.1	302.4

# Mastercard Inc Class A MA ★★ 7 May 2025 21:37, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment¹
558.99 USD 6 May 2025	500.00 USD 25 Feb 2025 21:11, UTC	1.12	514.27 USD Bil 7 May 2025	Wide	Large Growth	Medium	Standard	 2 Apr 2025 05:00, UTC

Financial Leverage (Reporting Currency)	Actual			Forecast				
Fiscal Year, ends 31 Dec	2022	2023	2024	2025	2026	2027	2028	2029
Debt/Capital %	4.0	3.8	3.6	3.8	3.8	3.7	3.7	3.7
Assets/Equity	6.1	6.1	7.4	8.2	9.9	10.4	11.4	12.3
Net Debt/EBITDA	0.5	0.4	0.6	0.6	0.6	0.5	0.5	0.5
Total Debt/EBITDA	1.1	1.0	1.1	1.0	0.9	0.9	0.8	0.7
EBITDA/ Net Interest Expense	27.5	26.1	26.0	27.5	29.7	32.4	32.4	35.1

Forecast Revisions as of 25 Feb 2025	2025		2026		2027	
Prior data as of 10 Sep 2024	Current	Prior	Current	Prior	Current	Prior
Fair Value Estimate Change (Trading Currency)	500.00	464.99	—	—	—	—
Revenue (USD Mil)	51,608	45,537	58,193	51,253	65,677	57,678
Operating Income (USD Mil)	17,960	16,189	20,397	18,349	23,348	20,649
EBITDA (USD Mil)	18,808	16,949	21,341	19,192	24,401	21,585
Net Income (USD Mil)	14,422	13,156	16,417	14,944	18,610	16,848
Earnings Per Share (Diluted) (USD)	15.57	13.95	18.19	16.30	21.17	18.91
Adjusted Earnings Per Share (Diluted) (USD)	15.93	14.26	18.60	16.66	21.64	19.32
Dividends Per Share (USD)	3.04	2.51	3.49	3.01	4.02	3.61

## Key Valuation Drivers as of 25 Feb 2025

Cost of Equity %	9.0
Pre-Tax Cost of Debt %	5.8
Weighted Average Cost of Capital %	8.6
Long-Run Tax Rate %	20.0
Stage II EBI Growth Rate %	9.0
Stage II Investment Rate %	22.5
Perpetuity Year	20

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

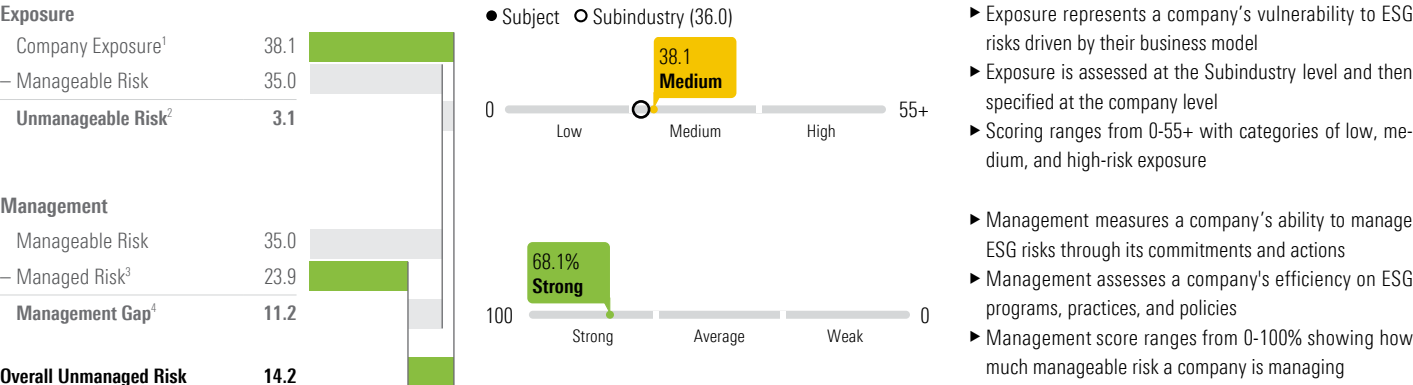
## Discounted Cash Flow Valuation as of 25 Feb 2025

	USD Mil
Present Value Stage I	59,208
Present Value Stage II	188,596
Present Value Stage III	212,328
<b>Total Firm Value</b>	<b>460,131</b>
Cash and Equivalents	8,772
Debt	18,226
Other Adjustments	0
<b>Equity Value</b>	<b>450,677</b>
Projected Diluted Shares	906
<b>Fair Value per Share (USD)</b>	<b>500.00</b>

Mastercard Inc Class A MA★★7 May 2025 21:37, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment¹
558.99 USD	500.00 USD	1.12	514.27 USD Bil	Wide	Large Growth	Medium	Standard	
6 May 2025	25 Feb 2025 21:11, UTC		7 May 2025					2 Apr 2025 05:00, UTC

ESG Risk Rating Breakdown



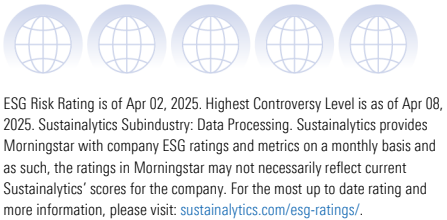
ESG Risk Rating



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 68.1% 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



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			
Mastercard Inc	38.1   Medium	0 —●— 55+	68.1   Strong	100 —●— 0	14.2   Low	0 —●— 40+		
American Express Co	39.2   Medium	0 —●— 55+	56.6   Strong	100 —●— 0	18.3   Low	0 —●— 40+		
The Western Union Co	34.3   Low	0 —●— 55+	53.3   Strong	100 —●— 0	17.4   Low	0 —●— 40+		
Discover Financial Services	38.8   Medium	0 —●— 55+	50.6   Strong	100 —●— 0	20.6   Medium	0 —●— 40+		
Visa Inc	36.8   Medium	0 —●— 55+	64.7   Strong	100 —●— 0	14.9   Low	0 —●— 40+		

# Appendix

## Historical Morningstar Rating

### Mastercard Inc Class A MA 7 May 2025 21:37, 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
★★	★★	★★★	★★	★★	★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★

### American Express Co AXP 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
★★★★	★★★★	★★★★★	★★★★	★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★	★★★★

### Discover Financial Services DFS 7 May 2025 21:36, 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
★★★★	★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★



Visa Inc Class A V 7 May 2025 21:40, 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



# Research Methodology for Valuing Companies

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.

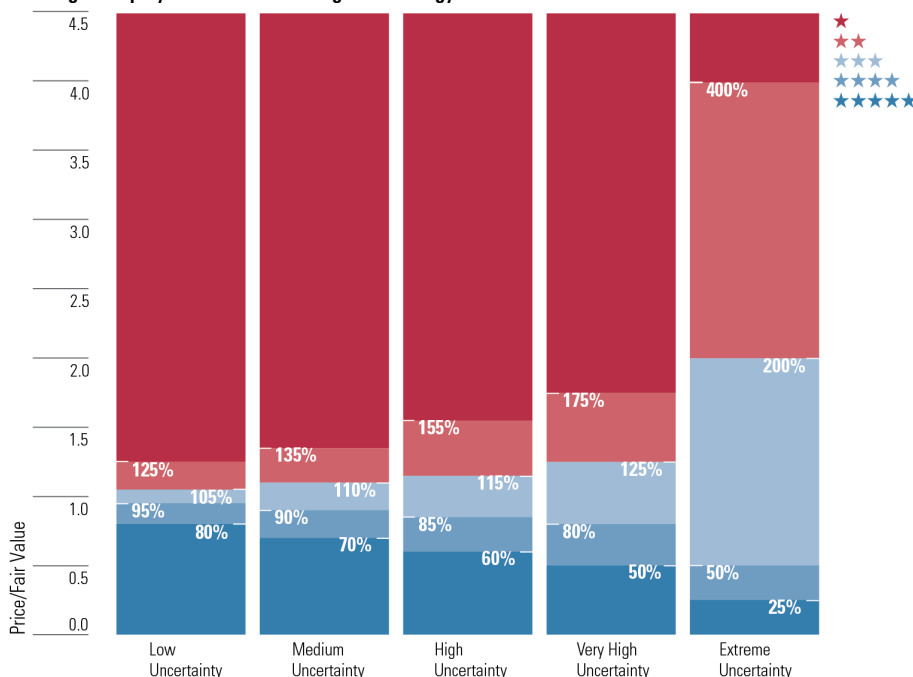
## 4. Market Price

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.

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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.

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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.

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