AT&T Inc T ★★★★ 25 Jan 2023 22:28, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
20.42 USD 25 Jan 2023	25.00 USD 11 Apr 2022 03:30, UTC	0.82	136.57 USD Bil 25 Jan 2023	Narrow	Stable	Medium	Poor	4 Jan 2023 06:00, UTC

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Contents

Reporting Currency: USD | Trading Currency: USD
Currency amounts expressed with "$" are in U.S. dollars (USD) unless otherwise denoted.

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

Competitors Slowed AT&T During Fourth Quarter, but Growth Remains Solid

Analyst Note Michael Hodel, CFA, Director, 25 Jan 2023

AT&T isn't attracting as many wireless customers as it was a year ago, but it continues to post solid results. Customer retention was strong, but Verizon and T-Mobile seem to have effectively countered AT&T's promotional efforts, which began in earnest about two years ago. Management expects wireless customer additions will decline in 2023 as industry growth slows from the torrid pace of the past couple years, which will benefit cash flow, but the firm also signaled that it will work to continue gaining share. We are maintaining our $25 fair value estimate and think the stock remains modestly undervalued.

AT&T added 656,000 postpaid phone customers during the fourth quarter, down from 884,000 a year ago and placing it between T-Mobile (927,000 net additions) and Verizon (217,000). The rate of customer defections (churn) was flat versus the prior quarter, bucking the usual seasonal uptick as the impact of price increases taken over the summer appears to have run its course. On the weak side, however, the firm's share of new customer decisions (gross customer additions) dipped during the quarter. Of the big three carriers, only AT&T attracted fewer gross additions than in the prior quarter.

Wireless service revenue increased 5.2% versus the prior year during the quarter. AT&T's postpaid phone customer base has grown 3.5% over the past year and revenue per customer was 2.5% higher. The slowdown in customer additions and a slower customer upgrade pace pulled equipment revenue lower but provided a lift to profitability. The wireless segment EBITDA margin increased nearly 3 percentage points versus a year ago to 38%.

Free cash flow hit $14.1 billion for the year, modestly topping management's revised target, which it cut from $16

Financial Summary and Key Statistics

	Actual		Forecast	
	2021	2022	2023	2024
Revenue (USD Mil)	118,208	120,741	121,939	124,557
Revenue Growth %	4.4	2.1	1.0	2.2
Operating Income (Mil)	22,116	22,911	25,381	26,565
Operating Margin %	18.7	19.0	20.8	21.3
Adjusted EBITDA (Mil)	39,849	13,434	42,956	44,640
Adjusted EBITDA Margin %	33.7	11.1	35.2	35.8
Earnings Per Share (Diluted) (USD)	3.01	-1.15	2.59	2.63
Adjusted Earnings Per Share (Diluted) (USD)	3.01	2.41	2.87	2.95
Adjusted EPS Growth %	91.5	-19.8	18.8	2.8
Price/Earnings	6.2	7.6	7.1	6.9
Price/Book	1.8	1.4	1.4	1.2
EV/EBITDA	9.4	26.5	6.7	6.4
Free Cash Flow Yield %	12.4	9.2	11.5	13.0

Source: Morningstar Valuation Model. Data as of 25 Jan 2023.

Morningstar Equity Analyst Note | Report as of 25 Jan 2023 23:04, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC.

AT&T Inc T ★★★★ 25 Jan 2023 22:28, UTC

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Sector	Industry
Communication Services	Telecom Services

Business Description

The wireless business contributes about two thirds of AT&T's revenue following the spinoff of WarnerMedia. The firm is the third-largest U.S. wireless carrier, connecting 69 million postpaid and 18 million prepaid phone customers. Fixed-line enterprise services, which account for about 20% of revenue, include internet access, private networking, security, voice, and wholesale network capacity. Residential fixed-line services, about 10% of revenue, primarily consist of broadband internet access service. AT&T also has a sizable presence in Mexico, serving 21 million customers, but this business only accounts for 2% of revenue. The firm still holds a 70% equity stake in satellite television provider DirecTV but does not consolidate this business in its financial statements.

billion over the summer. AT&T expects to generate $16 billion of free cash flow in 2023 while it continues to invest aggressively in its network but with slower customer growth easing working capital needs.

Consumer fixed-line revenue increased 2.2% year over year with broadband sales up 6.4%. Broadband net customer losses were modestly disappointing at 64,000, up from 20,000 a year ago despite continued expansion of the fiber footprint. We expect AT&T to add net broadband customers in 2023 as a growing portion of customers are on the fiber network. Broadband pricing remains solid, as average revenue per fiber customer increased 9% versus a year ago to nearly $65 per month. EBITDA margins in this segment also continue to expand nicely, hitting 37% during the quarter, up from 31% a year ago.

Management dialed back fiber network expansion plans somewhat, claiming it will build to around 2.0 million-2.5 million new customer locations annually through 2025, down from 3.5 million-4.0 million targeted previously and around 3 million built in 2022. The firm still plans to reach 30 million customer locations, though this figure includes both homes and businesses. AT&T is excited about its venture with BlackRock to build fiber networks outside of the traditional AT&T footprint and the prospects for winning government subsidies to build in rural areas, stating that it will invest capital in whichever format proves the most profitable. We agree that the firm should explore all options on the table, but we aren't clear yet why management is slowing the pace of the core network buildout.

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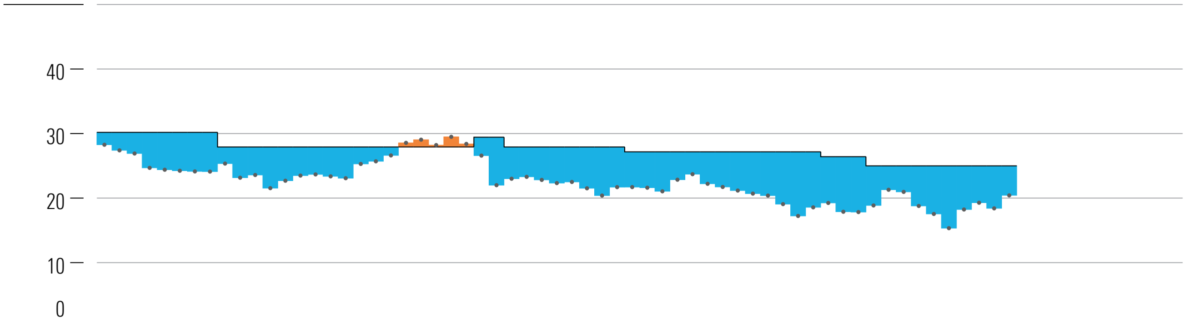
Price vs. Fair Value

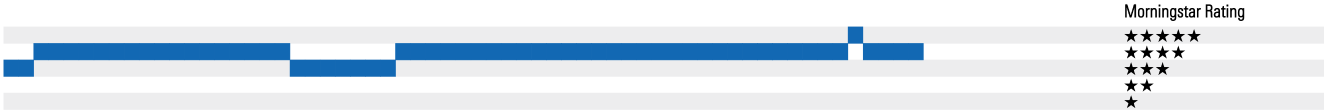


Fair Value: 25.00
11 Apr 2022 03:30, UTC

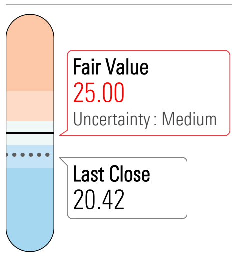
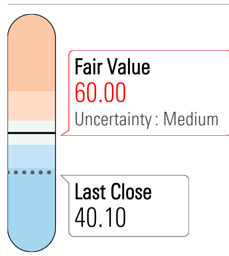
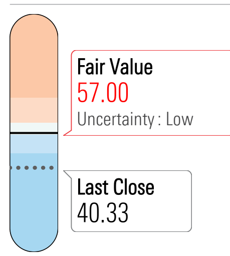
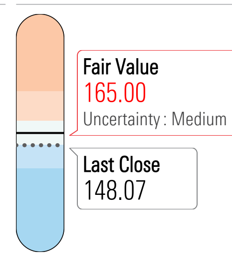
Last Close: 20.42
Over Valued
Under Valued

2018	2019	2020	2021	2022	YTD	
0.77	1.06	0.80	0.68	0.74	0.82	Price/Fair Value
-21.45	44.08	-21.08	-7.23	-1.33	12.43	Total Return %

Morningstar Rating



Competitors

	AT&T Inc T	Comcast Corp Class A CMCSA	Verizon Communications Inc VZ	T-Mobile US Inc TMUS
				
Economic Moat	Narrow	Wide	Narrow	Narrow
Moat Trend	Stable	Stable	Stable	Stable
Currency	USD	USD	USD	USD
Fair Value	25.00 11 Apr 2022 03:30, UTC	60.00 29 Jul 2021 17:13, UTC	57.00 24 Jan 2023 21:06, UTC	165.00 28 Oct 2022 19:59, UTC
1-Star Price	33.75	81.00	71.25	222.75
5-Star Price	17.50	42.00	45.60	115.50
Assessment	Under Valued 25 Jan 2023	Significantly Undervalued 24 Jan 2023	Significantly Undervalued 24 Jan 2023	Under Valued 24 Jan 2023
Morningstar Rating	★★★★25 Jan 2023 22:28, UTC	★★★★★25 Jan 2023 22:28, UTC	★★★★★25 Jan 2023 22:28, UTC	★★★★25 Jan 2023 22:28, UTC
Analyst	Michael Hodel, Director	Michael Hodel, Director	Michael Hodel, Director	Michael Hodel, Director
Capital Allocation	Poor	Standard	Standard	Standard
Price/Fair Value	0.82	0.67	0.71	0.90
Price/Sales	0.90	1.48	1.24	2.29
Price/Book	1.12	2.14	1.86	2.59
Price/Earnings	7.92	33.69	7.99	119.52
Dividend Yield	5.79%	2.72%	6.40%	—
Market Cap	136.57 Bil	171.86 Bil	169.76 Bil	181.41 Bil
52-Week Range	14.46—22.84	28.39—50.98	32.79—55.51	103.77—154.38
Investment Style	Large Value	Large Value	Large Value	Large Growth

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Morningstar Valuation Model Summary

Financials as of 25 Jan 2023	Actual			Forecast				
Fiscal Year, ends 31 Dec	2020	2021	2022	2023	2024	2025	2026	2027
Revenue (USD Mil)	113,238	118,208	120,741	121,939	124,557	128,196	132,267	136,747
Operating Income (USD Mil)	23,058	22,116	22,911	25,381	26,565	27,935	29,358	31,098
EBITDA (USD Mil)	51,574	44,978	13,434	46,956	47,988	49,327	50,148	52,216
Adjusted EBITDA (USD Mil)	40,570	39,849	13,434	42,956	44,640	46,510	48,633	51,073
Net Income (USD Mil)	11,284	21,661	-8,727	18,641	18,917	19,558	19,651	20,697
Adjusted Net Income (USD Mil)	11,284	21,661	18,311	20,651	21,231	22,197	21,911	22,877
Free Cash Flow To The Firm (USD Mil)	52,151	4,182	-27	11,474	13,581	15,032	16,393	16,776
Weighted Average Diluted Shares Outstanding (Mil)	7,183	7,199	7,587	7,200	7,200	7,200	7,200	7,200
Earnings Per Share (Diluted) (USD)	1.57	3.01	-1.15	2.59	2.63	2.72	2.73	2.87
Adjusted Earnings Per Share (Diluted) (USD)	1.57	3.01	2.41	2.87	2.95	3.08	3.04	3.18
Dividends Per Share (USD)	2.08	2.08	1.35	1.11	1.11	1.11	1.11	1.11

Margins & Returns as of 25 Jan 2023		Actual			Forecast					
	3 Year Avg	2020	2021	2022	2023	2024	2025	2026	2027	5 Year Avg
Operating Margin %	19.4	20.4	18.7	19.0	20.8	21.3	21.8	22.2	22.7	21.8
EBITDA Margin %	—	45.5	38.1	11.1	38.5	38.5	38.5	37.9	38.2	—
Adjusted EBITDA Margin %	26.9	35.8	33.7	11.1	35.2	35.8	36.3	36.8	37.4	36.3
Net Margin %	7.0	10.0	18.3	-7.2	15.3	15.2	15.3	14.9	15.1	15.2
Adjusted Net Margin %	14.5	10.0	18.3	15.2	16.9	17.1	17.3	16.6	16.7	16.9
Free Cash Flow To The Firm Margin %	16.5	46.1	3.5	0.0	9.4	10.9	11.7	12.4	12.3	11.3

Growth & Ratios as of 25 Jan 2023		Actual			Forecast					
	3 Year CAGR	2020	2021	2022	2023	2024	2025	2026	2027	5 Year CAGR
Revenue Growth %	—	—	4.4	2.1	1.0	2.2	2.9	3.2	3.4	2.5
Operating Income Growth %	—	—	-4.1	3.6	10.8	4.7	5.2	5.1	5.9	6.3
EBITDA Growth %	0.0	—	—	—	—	—	—	—	—	0.0
Adjusted EBITDA Growth %	-21.9	43.8	-1.8	-66.3	219.8	3.9	4.2	4.6	5.0	30.6
Earnings Per Share Growth %	—	—	—	—	—	—	—	—	—	5.7
Adjusted Earnings Per Share Growth %	—	—	91.5	-19.8	18.8	2.8	4.6	-1.3	4.4	5.7

Valuation as of 25 Jan 2023	Actual			Forecast				
	2020	2021	2022	2023	2024	2025	2026	2027
Price/Earnings	13.8	6.2	7.6	7.1	6.9	6.6	6.7	6.4
Price/Sales	2.5	1.7	1.5	1.1	1.1	1.1	1.0	1.0
Price/Book	1.0	1.8	1.4	1.4	1.2	1.1	1.0	0.9
Price/Cash Flow	10.3	8.1	10.9	8.7	7.7	6.9	6.5	6.4
EV/EBITDA	11.4	9.4	26.5	6.7	6.4	6.2	5.9	5.6
EV/EBIT	20.1	17.0	15.6	11.3	10.8	10.3	9.8	9.2
Dividend Yield %	9.6	11.2	7.3	5.4	5.4	5.4	5.4	5.4
Dividend Payout %	132.4	69.1	-117.4	42.9	42.3	40.9	40.7	38.6
Free Cash Flow Yield %	9.7	12.4	9.2	11.5	13.0	14.4	15.4	15.7

Operating Performance / Profitability as of 25 Jan 2023	Actual			Forecast				
Fiscal Year, ends 31 Dec	2020	2021	2022	2023	2024	2025	2026	2027
ROA %	2.1	4.5	-2.1	4.6	4.5	4.5	4.4	4.5
ROE %	6.6	18.7	-10.7	19.1	17.4	16.3	15.0	14.4
ROIC %	4.7	5.8	-1.6	8.1	8.1	8.2	8.3	8.6

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Financial Leverage (Reporting Currency)	Actual			Forecast				
Fiscal Year, ends 31 Dec	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Debt/Capital %	49.3	70.0	58.3	55.3	53.6	51.2	48.8	47.2
Assets/Equity	3.3	5.6	4.1	3.8	3.6	3.4	3.2	3.0
Net Debt/EBITDA	2.8	3.5	9.6	2.7	2.6	2.4	2.3	2.1
Total Debt/EBITDA	3.9	4.4	10.1	3.1	3.1	2.9	2.8	2.7
EBITDA/ Net Interest Expense	5.1	7.6	2.2	7.2	7.4	7.8	8.1	8.5

Forecast Revisions as of 25 Jan 2023	2023		2024		2025	
Prior data as of 20 Oct 2022	**Current**	**Prior**	**Current**	**Prior**	**Current**	**Prior**
Fair Value Estimate Change (Trading Currency)	25.00	24.50	—	—	—	—
Revenue (USD Mil)	121,939	121,142	124,557	122,919	128,196	126,244
Operating Income (USD Mil)	25,381	22,668	26,565	24,604	27,935	26,117
EBITDA (USD Mil)	42,956	40,418	44,640	42,854	46,510	44,867
Net Income (USD Mil)	20,651	19,073	21,231	20,359	22,197	21,530
Earnings Per Share (Diluted) (USD)	2.59	2.37	2.63	2.51	2.72	2.64
Adjusted Earnings Per Share (Diluted) (USD)	2.87	2.67	2.95	2.85	3.08	3.02
Dividends Per Share (USD)	1.11	1.35	1.11	1.11	1.11	1.11

Key Valuation Drivers as of 25 Jan 2023	
Cost of Equity %	9.0
Pre-Tax Cost of Debt %	6.5
Weighted Average Cost of Capital %	7.4
Long-Run Tax Rate %	23.5
Stage II EBI Growth Rate %	3.0
Stage II Investment Rate %	12.0
Perpetuity Year	15

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

Discounted Cash Flow Valuation as of 25 Jan 2023	**USD Mil**
Present Value Stage I	58,671
Present Value Stage II	114,795
Present Value Stage III	149,633
Total Firm Value	**323,100**
Cash and Equivalents	7,234
Debt	-136,020
Other Adjustments	-10,479
Equity Value	**178,685**
Projected Diluted Shares	7,200
Fair Value per Share (USD)	**25.00**

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Income Statement (USD)	Actual			Forecast				
Fiscal Year, ends 31 Dec	2020	2021	2022	2023	2024	2025	2026	2027
Revenue (Mil)	**113,238**	**118,208**	**120,741**	**121,939**	**124,557**	**128,196**	**132,267**	**136,747**
Cost of Goods Sold (Mil)	72,667	78,233	79,808	78,982	79,917	81,685	83,633	85,673
Gross Profit (Mil)	**40,571**	**39,975**	**40,933**	**42,957**	**44,641**	**46,511**	**48,634**	**51,074**
Selling, General, Administrative & Other Expenses (Mil)	1	1	1	1	1	1	1	1
Advertising & Marketing Expenses	—	—	—	—	—	—	—	—
Research & Development	—	—	—	—	—	—	—	—
Depreciation & Amortization (if reported separately) (Mil)	17,512	17,858	18,021	17,575	18,075	18,575	19,275	19,975
Adjusted Operating Income (Mil)	**23,058**	**22,116**	**22,911**	**25,381**	**26,565**	**27,935**	**29,358**	**31,098**
Financial Non-Cash (Gains)/Losses (Mil)	0	0	27,498	0	0	0	0	0
Irregular Cash (Gains)/Losses (Mil)	0	0	0	-4,000	-3,349	-2,817	-1,515	-1,143
Operating Income (Mil)	**23,058**	**22,116**	**-4,587**	**29,381**	**29,913**	**30,752**	**30,873**	**32,241**
Net Interest Expense (Mil)	9,261	-6,451	-1,493	3,000	3,000	3,000	3,000	3,000
Income Tax Expense (Mil)	965	5,220	3,780	6,068	6,325	6,522	6,550	6,872
After-Tax Items (Mil)	-193	-207	-384	-203	-203	-203	-203	-203
(Minority Interest) (Mil)	-1,355	-1,479	-1,469	-1,469	-1,469	-1,469	-1,469	-1,469
Net Income (Mil)	**11,284**	**21,661**	**-8,727**	**18,641**	**18,917**	**19,558**	**19,651**	**20,697**
Adjusted Net Income (Mil)	**11,284**	**21,661**	**18,311**	**20,651**	**21,231**	**22,197**	**21,911**	**22,877**
Weighted Average Diluted Shares Outstanding (Mil)	7,183	7,199	7,587	7,200	7,200	7,200	7,200	7,200
Diluted Earnings Per Share	**1.57**	**3.01**	**-1.15**	**2.59**	**2.63**	**2.72**	**2.73**	**2.87**
Diluted Adjusted Earnings Per Share	**1.57**	**3.01**	**2.41**	**2.87**	**2.95**	**3.08**	**3.04**	**3.18**
Dividends Per Common Share (USD)	2.08	2.08	1.35	1.11	1.11	1.11	1.11	1.11
EBITDA (Mil)	**51,574**	**44,978**	**13,434**	**46,956**	**47,988**	**49,327**	**50,148**	**52,216**
Adjusted EBITDA (Mil)	**40,570**	**39,849**	**13,434**	**42,956**	**44,640**	**46,510**	**48,633**	**51,073**

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Key Cash Flow Items (USD)	Actual			Forecast as of 25 Jan				
Fiscal Year, ends 31 Dec	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Cash from Working Capital (Mil)	3,258	-2,659	4,128	-1,767	-895	-1,089	483	485
(Capital Expenditures) (Mil)	-15,675	-16,527	-19,626	-24,022	-23,043	-21,793	-21,824	-21,879
Depreciation (Mil)	20,277	17,112	17,945	17,500	18,000	18,500	19,200	19,900
Amortization (Mil)	8,239	5,750	76	75	75	75	75	75
Net New (Investment), Organic (Mil)	**-8,875**	**-13,947**	**-3,451**	**-7,789**	**-5,438**	**-4,382**	**-2,141**	**-1,494**
(Purchases)/Sales of Companies & Assets (Mil)	1,790	-16,713	-10,001	-5,000	-5,000	-5,000	-5,000	-5,000
Net New (Investment), Total (Mil)	**-7,085**	**-30,660**	**-13,452**	**-12,789**	**-10,438**	**-9,382**	**-7,141**	**-6,494**
Other Non-Cash Items, From Cash Flows (Mil)	37,816	13,303	-4,383	75	75	75	75	75
Free Cash Flow to the Firm (Mil)	**52,151**	**4,182**	**-27**	**11,474**	**13,581**	**15,032**	**16,393**	**16,776**

Balance Sheet (USD)	Actual			Forecast				
Fiscal Year, ends 31 Dec	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Assets								
Cash and Equivalents (Mil)	9,740	19,223	3,701	2,678	9,202	13,453	18,030	26,858
Inventory (Mil)	3,695	3,325	3,123	3,246	3,284	3,357	3,437	3,521
Accounts Receivable (Mil)	20,215	12,313	11,466	11,580	11,828	12,174	12,561	12,986
Net Property, Plant and Equipment (Mil)	152,029	121,649	149,259	155,781	160,824	164,117	166,741	168,721
Goodwill (Mil)	135,259	92,740	67,895	67,895	67,895	67,895	67,895	67,895
Other Intangibles (Mil)	146,316	119,221	129,446	134,371	139,296	144,221	149,146	154,071
Other Operating Assets (Mil)	56,727	57,207	34,430	34,430	34,430	34,430	34,430	34,430
Non-Operating Assets (Mil)	0	0	0	0	0	0	0	0
Total Assets (Mil)	**525,761**	**427,678**	**402,853**	**413,513**	**430,293**	**443,180**	**455,773**	**472,014**
Liabilities								
Accounts Payable (Mil)	49,032	39,095	42,644	41,114	40,506	39,835	40,786	41,780
Debt (Mil)	157,245	176,876	136,020	134,027	137,460	137,169	135,843	138,385
Other Operating Liabilities (Mil)	121,968	105,681	110,472	114,006	117,036	119,318	120,628	120,628
Non-Operating Liabilities (Mil)	18,276	12,560	7,260	7,260	7,260	7,260	7,260	7,260
Total Liabilities (Mil)	**346,521**	**334,212**	**296,396**	**296,407**	**302,261**	**303,582**	**304,517**	**308,053**
Equity								
Shareholders' Equity (Mil)	161,673	75,943	97,500	108,149	119,074	130,640	142,299	155,004
Minority Interest (Mil)	17,567	17,523	8,957	8,957	8,957	8,957	8,957	8,957
Total Equity (Mil)	**179,240**	**93,466**	**106,457**	**117,106**	**128,031**	**139,597**	**151,256**	**163,961**

Research Methodology for Valuing Companies

Overview

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

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

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

1. Economic Moat

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

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

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

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

2. Estimated Fair Value

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

Our model is divided into three distinct stages:

Stage I: Explicit Forecast

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

Stage II: Fade

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

Stage III: Perpetuity

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

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

3. Uncertainty Around That Fair Value Estimate

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

Morningstar Equity Research Star Rating Methodology

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

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

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

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

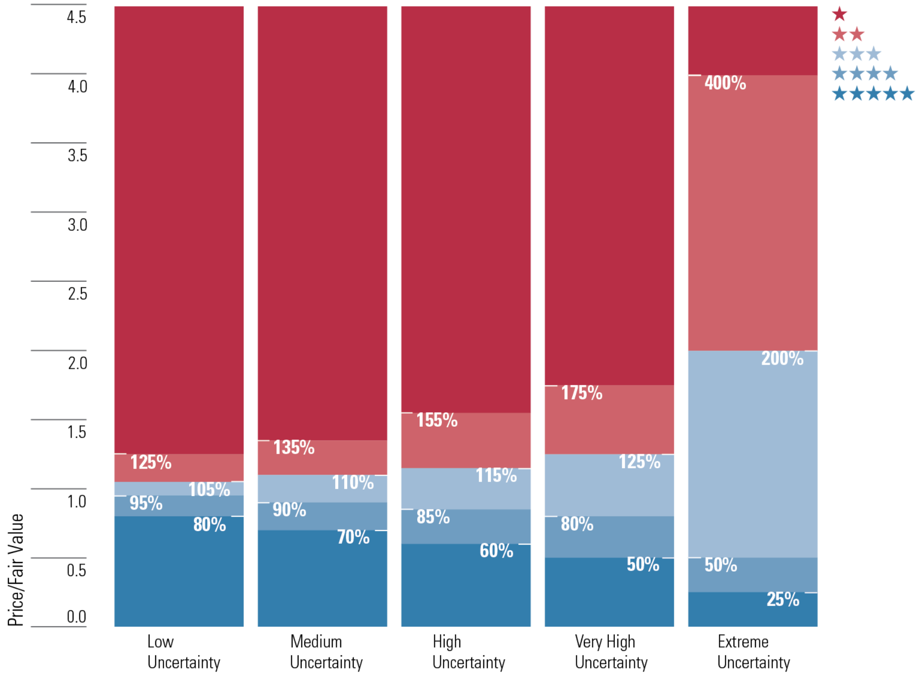
	Margin of Safety	
Qualitative Analysis Uncertainty Ratings	★★★★★Rating	★Rating
Low	20% Discount	25% Premium
Medium	30% Discount	35% Premium
High	40% Discount	55% Premium
Very High	50% Discount	75% Premium
Extreme	75% Discount	300% Premium

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

4. Market Price

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

Morningstar Equity Research Star Rating Methodology



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

Morningstar Star Rating for Stocks

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

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

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

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

The Morningstar Star Ratings for stocks are defined below:

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

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

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

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

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

Other Definitions

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

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

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

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

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

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

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

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Risk Warning

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

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