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

Michael Hodel
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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, 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%.

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	6.9	6.6
Free Cash Flow Yield %	12.4	9.2	10.7	12.2

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

Morningstar Equity Company Report | Report as of 26 Jan 2023 00:20, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 2 of 26

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]
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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.

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

Business Strategy & Outlook Michael Hodel, Director, 25 Jan 2023

We believe AT&T's strategy to invest heavily in its networks makes sense and will serve investors well over the long term. Aggressively extending fiber and 5G coverage to more locations builds on its core assets—its existing network and customer relationships—and should allow AT&T to gradually expand its share of telecom spending.

AT&T is the third-largest wireless carrier in the United States, but we believe it has adequate scale, spectrum, and financial resources relative to both Verizon and T-Mobile to generate solid profitability. Also, we believe the industry's structure has improved in recent years, with three major players that have little incentive to price irrationally in search of short-term market share gains. We expect the industry will gradually reach competitive balance as each carrier deploys 5G technology on deep midband spectrum holdings and crafts pricing strategies that appeal to each market segment.

Upstart Dish Network could present challenges in some areas, but we don't believe it presents a credible threat to the traditional wireless business. Also, AT&T and Dish have a wholesale relationship that should allow AT&T to participate in Dish's growth. We expect Dish will focus on emerging wireless applications in the enterprise market, an area where AT&T also has a strong presence.

AT&T also benefits from its ownership of deep network infrastructure across much of the U.S. and its ability to provide a range of telecom services. The firm plans to extend fiber to 30 million homes and businesses by the end of 2025, up from 22 million today, and has form a joint venture with BlackRock to expand into new areas. These efforts should allow the company to serve these locations extremely well while also enhancing wireless coverage in the surrounding areas. If the firm hits its targets, it would be the third-largest high-quality fixed-line network in the U.S. (behind Comcast and Charter) and the only of the three to also own a nationwide wireless network. We expect AT&T will have the ability to use its combined wireless and fixed-line capabilities to grab market share in this large and growing territory over the next decade.

Bulls Say Michael Hodel, Director, 26 Jan 2023

- Following a period of investment, AT&T will hold a nationwide 5G wireless network with deep spectrum behind it and a fiber network capable of reaching nearly one fourth of the U.S.
- AT&T has the scale to remain a strong wireless competitor over the long term. With three dominant carriers, industry pricing should be more rational going forward.
- Combining wireless and fixed-line networks with new technologies and deep expertise makes AT&T a force in enterprise services.

Bears Say Michael Hodel, Director, 26 Jan 2023

- The cost of maintaining dominance in the wireless industry by controlling spectrum has been exceptionally high over the years. AT&T has spent $40 billion over the past three years for licenses with few prospects for incremental revenue.
- Advancing technology will eventually swamp AT&T's wireless business, enabling a host of firms to enter the market, further commoditizing this service.
- AT&T's massive debt load will catch up with it. Even after spinning off Warner with a huge amount of debt, AT&T carries far higher leverage than it has historically and its dividend payout remains high.

Fair Value and Profit Drivers Michael Hodel, Director, 26 Jan 2023

Our $25 fair value estimate assumes that AT&T will deliver modest revenue growth and gradually expanding margins over the next several years as its wireless and fiber network investments pay off. Our fair value estimate implies an enterprise value of 8.0 times our 2023 EBITDA estimate and an 8% free cash flow yield.

In wireless, we expect AT&T will slowly gain market share as it re-establishes its market position. We believe postpaid revenue per phone customer will grow modestly amid a relatively stable competitive environment, hitting $60 per month in 2027 versus $55 in 2022. We estimate AT&T generates around $1 billion in revenue annually from connected devices, such as cars. We model this revenue roughly doubling over the next five years as things like edge computing gain adoption, but this estimate is highly uncertain. In total, we expect wireless service revenue will increase 3%-4% annually on average through 2027, with wireless EBITDA margins holding in the low-40% range, as cost efficiency efforts and benefits from slower customer growth offset rising network operating costs.

We expect the consumer broadband business will deliver steadily improving growth as the fiber network build out matures. We believe this business has an opportunity to sharply increase margins over the next five years as penetration rates increase and the old copper network is decommissioned. We model a 39% segment EBITDA margin in 2027, but this could prove conservative if legacy costs decline precipitously, especially given the absence of television content costs. Cable rivals that don't have sizable television revenue, like Cable One, can generate EBITDA margins above 50%.

We expect the enterprise services business will gradually return to growth in the coming years with profitability holding steady as cost-cutting balances the loss of higher-margin legacy services. AT&T hasn't provided much detail surrounding the enterprise business, making it more difficult to forecast future results. The firm has said previously that EBITDA in this segment will likely decline steadily until sometime in 2024. We suspect a large portion of the enterprise business will look similar to the consumer fixed-line business over the longer term, primarily providing basic connectivity and earning attractive margins. That said, AT&T should benefit as fixed-line and wireless services converge, providing opportunities to create, deliver, and manage more complex offerings.

In total, we believe consolidated revenue can grow 2-3% annually over the next five years. We expect capital spending will roughly match management's current plan in 2023 (around $24 billion, including vendor financing payments) to support the fiber network upgrade and 5G deployment. The firm expects capital spending will decline sharply beyond 2023 but hasn't provided a budget, likely to maintain flexibility to pursue growth opportunities. We expect wireless network spending will decline in 2024 and beyond but that the firm will continue investing heavily in fiber, holding total capital spending around $22 billion annually through 2027.

Economic Moat Michael Hodel, Director, 25 Jan 2023

Wireless is AT&T's most important business. Returns on capital in wireless have eroded somewhat in recent years as the firm has spent heavily on wireless spectrum and invested to put that spectrum to use. We estimate the wireless business produced a return on capital in 2022 of roughly 8%, or about 10% excluding goodwill, modestly above our estimate of the firm's cost of capital. These figures are down from about 10% and 12% in 2018. Over those four years, segment operating income is up 13% cumulatively while the invested capital base has expanded about 30%, primarily on $40 billion of spectrum purchases.

We expect that wireless returns will remain ahead of AT&T's cost of capital. Verizon, AT&T, and T-Mobile dominate the U.S. wireless market, collectively claiming nearly 90% of retail postpaid and prepaid phone customers between them and supplying the network capacity to support most other players. Providing solid nationwide coverage requires heavy fixed investments in wireless spectrum and network infrastructure. While a larger customer base does require incremental investment in network capacity, a significant portion of costs are either fixed or more efficiently absorbed as network utilization reaches optimal levels in more locations.

The benefits of fixed-cost leverage and the difficulty of providing a differentiated wireless offering create an efficient scale advantage in the wireless industry. The massive consolidation across the industry over the past 15 years and the inability of several interested parties, including Dish Network and Comcast, to enter the market using their own networks provide evidence of efficient scale. Comcast relies on Verizon to support its wireless efforts while Dish will use both the AT&T and T-Mobile networks for several years as it attempts to build a nationwide network, more than a decade after it began assembling a spectrum portfolio.

With three sizable players, we don't expect the carriers will have an incentive to aggressively poach each other's customers, given how painfully slow market share shifts occur in the business. We also expect the high cost of maintaining nationwide coverage and its diminutive size will limit Dish's ability to compete on a large scale in the traditional wireless business over the long term. Each of the three major carriers has pledged substantial capital returns to shareholders: AT&T's new dividend totals $8 billion annually and Verizon's nearly $11 billion, while T-Mobile has said it can repurchase up to $60 billion of its shares through 2025. To support these returns, each of the carriers has guided investors to expect modest but steady revenue growth over the next several years. These actions indicate that none of the carriers is looking to radically disrupt the current pricing structure in the industry and that each will increase prices as needed to offset any cost pressures that emerge.

The fixed-line enterprise services segment is AT&T's next largest. We believe this operation holds a solid competitive position in a consolidating market. AT&T is one of only a handful of companies capable of providing complex communications services to business customers with geographically diverse needs. We roughly estimate this segment earns 10%-15% returns on invested capital excluding goodwill (AT&T's most recent major acquisition in this area was the 2005 purchase of the legacy AT&T long-distance business). Business services revenue has steadily declined in recent years, falling to less than $23 billion in 2022 from $29 billion five years earlier. Margins in this segment have held steady, but profits have also declined (EBITDA was less than $9 billion 2022 versus $11 billion in 2017). A significant but undisclosed amount of legacy business remains and will continue to exert pressure on growth over the next several years, but AT&T has begun to focus its efforts on core network connectivity and services where its assets allow it to deliver unique solutions. Management expects the segment will near stability in 2023 with growth returning thereafter.

AT&T's last significant business, consumer fixed-line services, doesn't possess a moat, in our view. We estimate AT&T's consumer fixed-line networks reach around 55 million homes, or a bit less than half of the U.S. population. This business is challenged competitively across most of this footprint thanks to inferior networks relative to cable competitors. About 25% of the homes in this service territory subscribe to AT&T's internet access service, around half the penetration level Comcast claims. The gap between AT&T and its cable rivals has steadily widened over the past several years. Customer penetration is critical to driving profitability in the telecom business and AT&T's modest level has left returns on capital around 5%, by our estimate.

AT&T has upgraded about one third of its residential footprint to a fiber-to-the-premises network, which provides a much stronger competitive position versus cable. The firm plans to expand the FTTP network aggressively over the next few years, but it has a long way to go on this effort. We expect price competition will remain rational as AT&T's fiber network grows, as neither AT&T or the cable companies are likely to risk earning less revenue across their existing customer bases over the long term to gain share.

The remainder of AT&T's business includes the Mexican wireless business. We don't believe the Mexican business has a moat, operating at a fraction of the scale of market leader America Movil. We wouldn't be surprised if AT&T sold the Mexican wireless business in the near future.

Moat Trend Michael Hodel, Director, 25 Jan 2023

With the T-Mobile/Sprint merger, we expect the wireless industry will begin to benefit from the efficient scale properties inherent in the business. In other markets around the world, similarly sized competitors typically enjoy benign competitive environments. Gaining meaningful market share can take months or years of aggressive pricing, given how contracts are typically structured, allowing rivals to easily retaliate. Also, we don't believe Dish Network will disrupt the traditional wireless business. The firm has entered the prepaid market, acquiring the Sprint prepaid business. However, Dish holds extremely small market share. With a shaky financial position and a network likely better suited to narrow use cases, we don't believe the firm will make a broad push into the traditional wireless market.

In the consumer broadband segment, AT&T has steadily lost wallet share across most of the areas it serves, making it increasingly difficult to justify the aggressive network spending needed to keep pace with cable rivals on a stand-alone basis. However, we think the segment will enjoy significant synergies with the wireless business as 5G technologies are deployed. We like AT&T's plan to expand its fiber network in residential areas for this reason. The transition from the legacy copper network to fiber holds the promise to markedly improve AT&T's cost structure and overall competitive position but not without significant uncertainty. AT&T plans to overlay about half its footprint with fiber by 2025. Keeping this effort on budget could be challenging given rising labor costs and potential zoning challenges. The firm also hopes to essentially abandon another 25% of its fixed-line footprint, offering only wireless in these areas. Getting these plans past regulators and lawmakers could prove difficult.

In the fixed-line business services segment, AT&T's position has strengthened in recent years thanks to consolidation, which has reduced the number of firms capable of delivering complex services to geographically diverse customers. The cable companies are expanding their capabilities in this market, but we expect these firms will need many years to replicate the local and global infrastructure needed to serve larger businesses well while also earning healthy margins. More importantly, we don't have good insight in the revenue mix within AT& T business services segment. While the firm is well positioned to offer core network connectivity and network management services, technological advances have rendered several major business lines, including legacy voice service, obsolete.

Risk and Uncertainty Michael Hodel, Director, 30 Sep 2022

We have changed our Morningstar Uncertainty Rating to Medium from High to better reflect the volatility we expect AT&T investors will face relative to our global coverage. Regulation and technological change are the primary uncertainties facing AT&T. Wireless and broadband services are often considered necessary for social inclusion, in terms of employment and education. If AT&T's services are deemed insufficient or overpriced, especially if in response to weak competition, regulators or politicians could step in. The firm is also still responsible for providing fixed-line phone services to millions of homes across the U.S., including many in small towns and rural areas. It could be compelled to invest more in rural markets even if economic returns are insufficient.

Regulators also control the flow of wireless spectrum into the industry, which has created scarcity in the past, pushing carriers to pay high prices for licenses. We also suspect when large spectrum blocks are made available, such as the 2021 C-band auction, the carriers have felt compelled to bid excessively to keep potential entrants out of the market, especially the cable companies. Regulators around the world have also used spectrum policies to foster additional competition, a strategy the U.S. could follow.

On the technology front, wireless standards continue to evolve, putting more spectrum to use more efficiently. The cost to deploy wireless networks could come down to the point where numerous new firms are able to enter the market. The cable companies are already making attempts to leverage their existing networks to provide limited wireless coverage. Technology could quickly enhance these efforts. While unlikely, in our view, wireless technology could also remove the need for AT&T's fixed-line networks, killing returns on its fiber investments.

Financial Strength Michael Hodel, Director, 26 Jan 2023

The WarnerMedia spinoff took around $35 billion of debt with it, while a $9 billion spectrum purchase in early 2022 offset a portion of this benefit. Net debt stood at $132 billion at the end of 2022, leaving net leverage at about 3.2 times EBITDA. This load is far higher than the firm has operated under in the past: Immediately before its current capital deployment binge began in 2012 (with a round of heavy share repurchases), AT&T typically carried leverage of around 1.5 times EBITDA. Fortunately, the current debt load still compares reasonably well with Verizon and T-Mobile, which both carry similar leverage metrics.

The firm also used the Warner spinoff to adjust its dividend policy, targeting a payout of around 40% of free cash flow, down from more than 70% in 2021 (by our calculation). The new payout totals about $8 billion annually, down from $15 billion in 2021. The firm has fallen short of management's cash flow targets over the past year, and it now expects to generate $16 billion of free cash flow in 2023, down from an initial projection of $20 billion. We still think the dividend policy makes sense, leaving substantial excess cash to reduce leverage and make network investments, which we believe is important to AT&T's long-term health.

With the reduced dividend payout leaving sizable excess cash flow, the firm plans to repay debt. Management targets net leverage of 2.5 times EBITDA, which it now believes it can hit in early 2025, rather than its initial expectation of late 2023. We believe the revised timeline is achievable, absent any major capital outlays. These targets also exclude $5.2 billion of preferred shares, around $5 billion of preferred interests in various subsidiaries, and a perpetual preferred stake in the wireless business held by AT&T's pension plans that pays $560 million annually. The firm used $2.7 billion to repurchase a portion of these preferred interests in late 2022.

Capital Allocation Michael Hodel, Director, 30 Sep 2022

We believe recent capital allocation decisions have destroyed shareholder value and the firm will pay the price for these missteps for some time to come. As a result, we assign AT&T a Morningstar Capital Allocation Rating as

Poor. This assessment stems from our view that a relatively weak balance sheet has hindered AT&T's strategic flexibility and willingness to invest aggressively in the business when needed. The state of the balance sheet is the result of several ill-considered acquisitions, poorly timed share repurchases, and an insistence on increasing the dividend even as leverage mounted. Management is moving in the right direction, using the Warner spinoff to shift to a dividend policy that better supports needed investment, but AT&T is still playing catch-up. It will need to invest aggressively for the next several years to make its fixed-line network competitive, and it doesn't expect to get debt leverage below targeted levels until the end of 2023. With cash flow expectations coming down recently, we wouldn't be surprised if management pushes its targeted leverage date further out.

The firm's run of heavy capital deployment began in 2012 with a massive share-repurchase program that, at the time, was billed as a temporary move away from AT&T's 1.5 times net debt/EBITDA leverage target. The firm repurchased $27 billion of its shares through 2014 at prices per share in the mid-$30s, pushing leverage to 1.8 times. The firm then pursued the AWS-3 auction, the DirecTV deal, expansion into Mexico, the Time Warner acquisition, and the recent C-band auction. With leverage nearing 3.2 times EBITDA in early 2021, AT&T's capital structure simply didn't line up well with a large dividend payout. Yet management explicitly expressed support for the prior dividend until immediately before changing direction, catching long-suffering investors off guard.

These capital forays not only left AT&T with a weaker balance sheet, they also left the firm in a weaker competitive position overall, in our view. With 2015's DirecTV purchase, AT&T acquired a satellite TV business that was, at best, peaking in maturity. AT&T has sold a stake in the television business but still has exposure to this declining business. More importantly, as the firm was shifting its strategy, it didn't invest as aggressively as it should have in its core business. Until recently, it had prioritized short-term margins over maintaining wireless market share, allowing T-Mobile to steadily steal customers. In addition, AT&T has only begrudgingly invested to expand its fiber optic network in the past. New CEO John Stankey has increased investment to retain customers and has made fiber construction a top priority, which should improve AT&T's position but will also dent cash flow over at least the next couple of years.

AT&T has placed a priority on debt reduction since the Time Warner merger closed, using asset sales as a part of this effort. Not all these sales have made strategic sense, in our view. For example, the sale of its wireless assets in Puerto Rico seemed odd, given the territory's strong ties to the U.S. and AT&T's presence elsewhere in Latin America. Management has also been less than forthright, in our view, concerning the debt load, using preferred shares, receivables securitization, and vendor financing to cloud its financial picture.

Shareholders have suffered because of AT&T's choices. The stock returned only 2% annually over the 20 years leading up to the Warner spinoff and 3% over the previous decade, as a declining share price has partially offset dividends paid. While the telecom industry hasn't delivered stellar returns in general, with several firms hitting bankruptcy in recent years, AT&T's shares lagged those of nearly every major U.S. telecom peer over that prior decade, including Verizon (7% returns annually), Comcast (14%), Charter (23%), and T-Mobile (23%).

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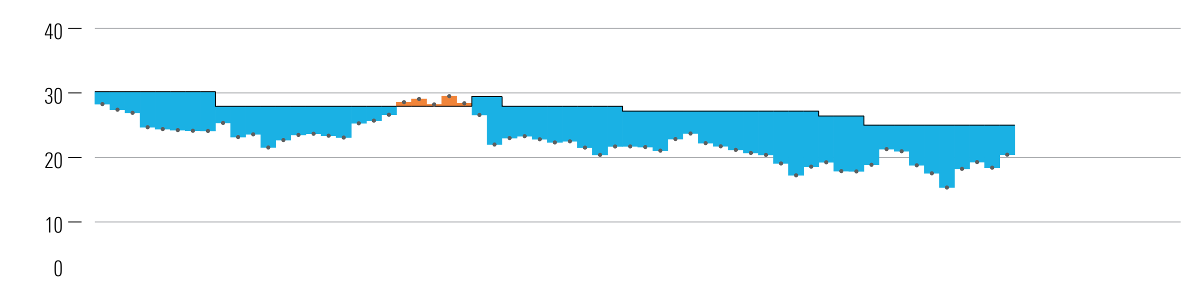
Price vs. Fair Value

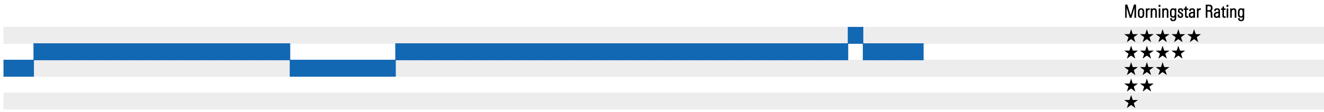


Fair Value: 25.00
11 Apr 2022 03:30, UTC

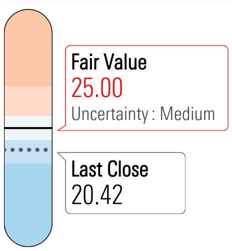
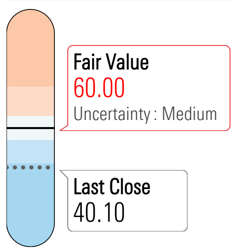
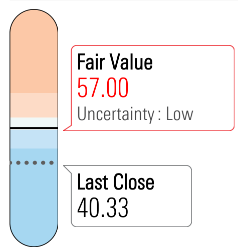
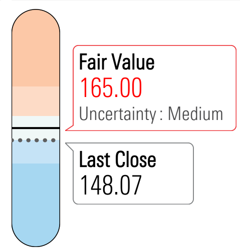
Last Close: 20.42
Over Valued
Under Valued

	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 11 Apr 2022 03:30, UTC1	57.00 11 Apr 2022 03:30, UTC2	165.00 11 Apr 2022 03:30, UTC3
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	1.2	1.2	1.1	1.1	1.1
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	9.3	8.2	7.4	6.9	6.8
EV/EBITDA	11.4	9.4	26.5	6.9	6.6	6.4	6.1	5.8
EV/EBIT	20.1	17.0	15.6	11.7	11.2	10.6	10.1	9.5
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	10.7	12.2	13.5	14.5	14.7

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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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

Financial Leverage	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

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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Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
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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**

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

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Management & Ownership

Management Activity as of 31 Mar 2023

Name	Position	Share Held	Report Date*	Insider Activity
John T. Stankey	Director, President and Chief Executive Officer	233,176	31 Mar 2023	679,490
Pascal Desroches	Senior Executive Vice President and Chief Financial Officer	339,069	31 Mar 2023	342,470
Lori M. Lee	Chief Executive Officer, AT&T Latin America and Global Marketing Officer	93,540	31 Mar 2023	251,004
David S. Huntley	Senior Executive Vice President and Chief Compliance Officer	139,936	31 Mar 2023	145,915
David R. McAtee	Senior Executive Vice President and General Counsel	408,510	31 Mar 2023	579,775
Jeffery S. McElfresh	Chief Executive Officer of AT&T Communications LLC	198,931	31 Mar 2023	393,507
Angela R. Santone	Senior Executive Vice President, Human Resources	104,603	31 Mar 2023	172,883
Edward W. Gillespie	Senior Executive Vice President, External and Legislative Affairs, AT&T Services, Inc.	48,065	31 Mar 2023	116,625
Debra L. Dial	Senior Vice President, Chief Accounting Officer and Controller	105,951	31 Mar 2023	53,506
Jason Kilar	Chief Executive Officer of Warner Media, LLC	1,241,405	31 Mar 2022	1,025,225

Fund Ownership as of 31 Dec 2022

Top Owners	% of Shares Held	% of Fund Assets	Change (k)	Portfolio Date
Vanguard US Total Market Shares ETF	3.04	0.37	2,002,867	31 Dec 2022
Vanguard Total Stock Market Index Fund	3.04	0.35	2,002,867	31 Dec 2022
Vanguard Instl Ttl Stck Mkt Idx Tr	2.99	0.31	1,719,832	30 Sep 2022
Vanguard 500 Index Fund	2.31	0.41	1,462,980	31 Dec 2022
SPDR® S&P 500 ETF Trust	1.10	0.41	-453,787	31 Dec 2022
Concentrated Holders				
Fidelity® Select Telecommunications Port	0.03	20.78	0	30 Nov 2022
Fidelity® Telecom and Utilities Fund	0.07	10.28	0	30 Nov 2022
Stratégie Télécom	0.00	8.70	143	31 Dec 2022
HIP Sustainable Global Dividends ESG	0.00	8.62	0	31 Dec 2022
Rydex Telecommunications Fund	0.00	8.21	-294	30 Nov 2022

Institutional Transactions as of 31 Dec 2022

Top 5 Buyers	% of Shares Held	% of Fund Assets	Shrs Bought/Sold (k)	Portfolio Date
Marshall Wace Asset Management Ltd	0.19	0.44	12,937,174	30 Sep 2022
Renaissance Technologies Corp	0.14	0.22	8,373,086	30 Sep 2022
Robeco Institutional Asset Management BV	0.19	0.68	4,823,559	30 Sep 2022
Prudential Financial Inc	0.18	0.33	4,748,238	30 Sep 2022
Prudential Investment Management Inc	0.18	0.33	4,748,238	30 Sep 2022
Top 5 Sellers				
Capital World Investors	0.29	0.07	-39,206,166	30 Sep 2022
Franklin Resources Inc	0.06	0.03	-17,500,254	30 Sep 2022
Jacobs Levy Equity Management, Inc.	0.00	—	-7,521,561	30 Sep 2022
BlackRock Inc	6.95	0.26	-7,159,545	30 Sep 2022
JANE STREET GROUP, LLC	0.02	0.01	-5,431,003	30 Sep 2022

*Represents the date on which the owner's name, position, and common shares held were reported by the holder or issuer.

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

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Comparable Company Analysis

These companies are chosen by the analyst and the data are shown by nearest calendar year in descending market capitalization order.

Valuation Analysis as of 25 Jan 2023

Company/Ticker	Price/Earnings			EV/EBITDA			Price/Free Cash Flow			Price/Book			Price/Sales		
	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)
Comcast Corp Class A CMCSA	15.6	*12.0*	*11.0*	9.1	*7.0*	*6.8*	14.2	*9.8*	*9.9*	2.4	*1.9*	*1.8*	2.0	*1.4*	*1.5*
Verizon Communications Inc VZ	7.6	*9.1*	*9.4*	8.1	*7.3*	*7.2*	15.5	*10.0*	*9.4*	—	—	*1.6*	1.6	*1.2*	*1.2*
T-Mobile US Inc TMUS	48.1	*59.7*	*19.9*	9.2	*10.8*	*9.4*	90.9	*51.5*	*17.8*	2.1	*2.7*	*2.4*	1.8	*2.3*	*2.2*
Average	23.8	*26.9*	*13.4*	8.8	*8.4*	*7.8*	40.2	*23.8*	*12.4*	2.2	*2.3*	*1.9*	1.8	*1.6*	*1.6*
AT&T Inc T	**7.6**	***7.1***	***6.9***	**26.5**	***6.9***	***6.6***	**—**	***9.3***	***8.2***	**—**	**—**	***1.2***	**1.5**	***1.2***	***1.2***

Returns Analysis as of 25 Jan 2023

Company/Ticker	ROIC %			Adjusted ROIC %			Return on Equity %			Return on Assets %			Dividend Yield %		
	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)
Comcast Corp Class A CMCSA	25.4	*24.9*	*26.2*	10.2	*9.9*	*10.3*	15.2	*14.9*	*15.3*	5.1	*5.2*	*5.5*	2.0	*2.7*	*3.0*
Verizon Communications Inc VZ	—	*9.1*	*8.9*	6.4	—	*8.1*	24.6	*19.6*	*17.7*	5.7	*4.8*	*4.6*	6.5	*6.5*	*6.7*
T-Mobile US Inc TMUS	6.6	*7.3*	*10.2*	6.1	*6.7*	*9.4*	4.5	*3.5*	*12.9*	1.5	*1.2*	*4.6*	—	—	—
Average	16.0	*13.8*	*15.1*	7.6	*8.3*	*9.3*	14.8	*12.7*	*15.3*	4.1	*3.7*	*4.9*	4.2	*4.6*	*4.8*
AT&T Inc T	**-1.6**	***8.1***	***8.1***	**-1.2**	***6.3***	***6.4***	**-10.7**	***19.1***	***17.4***	**-2.1**	***4.6***	***4.5***	**7.3**	***5.4***	***5.4***

Growth Analysis as of 25 Jan 2023

Company/Ticker	Revenue Growth %			EBIT Growth %			EPS Growth %			FCF Growth %			DPS Growth %		
	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)
Comcast Corp Class A CMCSA	12.4	*3.4*	*-1.5*	19.0	*11.4*	*5.9*	23.9	*3.8*	*8.2*	24.1	*26.6*	*-1.4*	11.1	*8.0*	*10.0*
Verizon Communications Inc VZ	2.4	*-0.5*	*1.2*	-4.4	*-2.8*	*-1.5*	-5.9	*-14.5*	*-2.9*	-123.5	*165.7*	*7.2*	2.0	*2.3*	*2.3*
T-Mobile US Inc TMUS	17.1	*0.5*	*4.7*	-2.3	*9.4*	*115.2*	-9.2	*2.9*	*200.7*	19.5	*-155.7*	*666.8*	—	—	—
Average	10.6	*1.1*	*1.5*	4.1	*6.0*	*39.9*	2.9	*-2.6*	*68.7*	-26.6	*12.2*	*224.2*	4.4	*3.4*	*4.1*
AT&T Inc T	**2.1**	***1.0***	***2.2***	**3.6**	***10.8***	***4.7***	**-19.8**	***18.8***	***2.8***	**-100.6**	***-42154.1***	***18.4***	**-35.1**	***-17.8***	***0.0***

Profitability Analysis as of 25 Jan 2023

Company/Ticker	Gross Margin %			EBITDA Margin %			Operating Margin %			Net Margin %			FCF Margin %		
	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)
Comcast Corp Class A CMCSA	29.8	*31.1*	*32.1*	29.8	*31.1*	*32.1*	17.9	*19.3*	*20.7*	12.9	*12.7*	*13.5*	13.8	*14.7*	*14.8*
Verizon Communications Inc VZ	56.8	*56.4*	*56.4*	35.0	*34.8*	*34.8*	22.5	*22.0*	*21.4*	15.9	*13.7*	*13.1*	10.3	*12.4*	*13.1*
T-Mobile US Inc TMUS	54.3	*53.1*	*57.1*	33.2	*33.2*	*36.3*	8.6	*9.4*	*19.3*	—	*4.0*	*11.5*	2.0	*4.4*	*12.3*
Average	47.0	*46.9*	*48.5*	32.7	*33.0*	*34.4*	16.3	*16.9*	*20.5*	9.6	*10.1*	*12.7*	8.7	*10.5*	*13.4*
AT&T Inc T	**33.9**	***35.2***	***35.8***	**11.1**	***35.2***	***35.8***	**19.0**	***20.8***	***21.3***	**15.2**	***16.9***	***17.1***	**13.4**	**—**	***14.2***

Leverage Analysis as of 25 Jan 2023

Company/Ticker	Debt/Equity %			Debt/Total Cap %			EBITDA/Net Int. Exp			Total Debt/EBITDA			Asset/Equity		
	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)
Comcast Corp Class A CMCSA	104.1	*99.8*	*93.1*	51.0	*49.9*	*48.2*	8.1	*8.3*	*8.5*	2.9	*2.6*	*2.5*	2.9	*2.8*	*2.7*
Verizon Communications Inc VZ	165.3	*157.8*	*144.8*	62.3	—	*59.1*	13.2	*9.5*	*9.1*	3.1	*3.3*	*3.2*	4.2	*4.0*	*3.8*
T-Mobile US Inc TMUS	111.1	*104.8*	*91.5*	52.6	*51.2*	*47.8*	7.9	*7.9*	*9.4*	2.9	*2.8*	*2.4*	3.0	*2.9*	*2.7*
Average	126.8	*120.8*	*109.8*	55.3	*50.5*	*51.7*	9.7	*8.6*	*9.0*	3.0	*2.9*	*2.7*	3.4	*3.2*	*3.1*
AT&T Inc T	**139.5**	***123.9***	***115.4***	**58.3**	**—**	***53.6***	**2.2**	***7.2***	***7.4***	**10.1**	***3.1***	***3.1***	**4.1**	***3.8***	***3.6***

Liquidity Analysis as of 25 Jan 2023

Company/Ticker	Cash per Share			Current Ratio			Quick Ratio			Cash/Short-Term Debt			Payout Ratio %		
	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)	2022	2023(E)	2024(E)
Comcast Corp Class A CMCSA	1.9	*2.3*	*2.2*	0.8	*0.9*	*0.8*	0.8	*0.9*	*0.8*	4.1	*2.4*	*2.5*	32.9	*34.0*	*34.5*
Verizon Communications Inc VZ	—	*2.6*	*2.9*	0.8	—	*1.1*	0.7	*1.0*	*1.0*	0.3	—	*1.9*	50.9	*59.5*	*62.7*
T-Mobile US Inc TMUS	5.3	*3.0*	*7.6*	0.9	*1.0*	*1.4*	0.8	*0.8*	*1.2*	1.0	*1.9*	*5.0*	0.0	*0.0*	*0.0*
Average	1.8	*2.1*	*3.5*	0.8	*0.7*	*1.0*	0.7	*0.8*	*0.9*	1.5	*1.1*	*2.7*	-8.4	*34.1*	*34.9*
AT&T Inc T	**—**	***0.4***	***1.3***	**0.7**	***0.7***	***0.8***	**0.6**	***0.6***	***0.7***	**0.5**	**—**	***1.2***	**-117.4**	***42.9***	***42.3***

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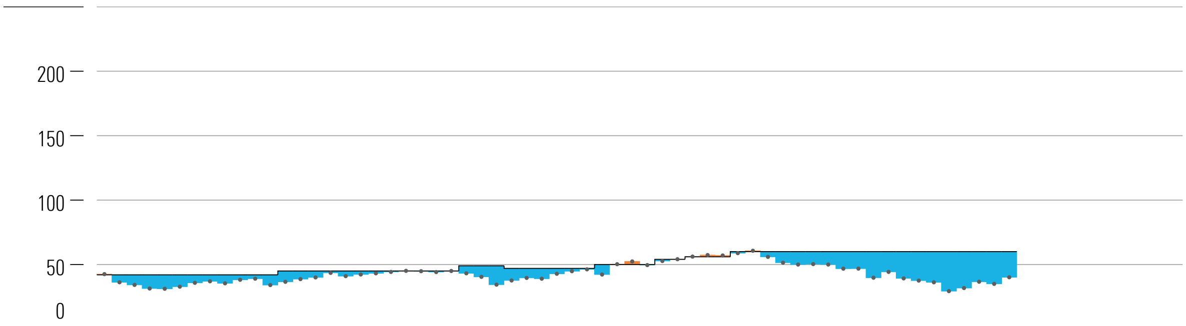
AT&T Inc T ★★★★ 25 Jan 2023 22:28, UTC

Competitors Price vs. Fair Value

Comcast Corp Class A CMCSA

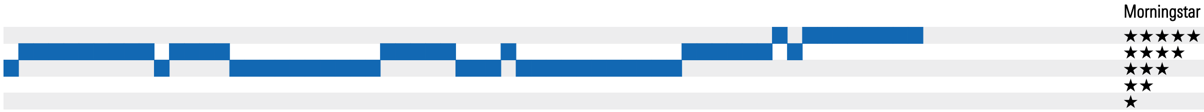


Fair Value: 60.00
29 Jul 2021 17:13, UTC

Last Close: 40.10
Over Valued
Under Valued

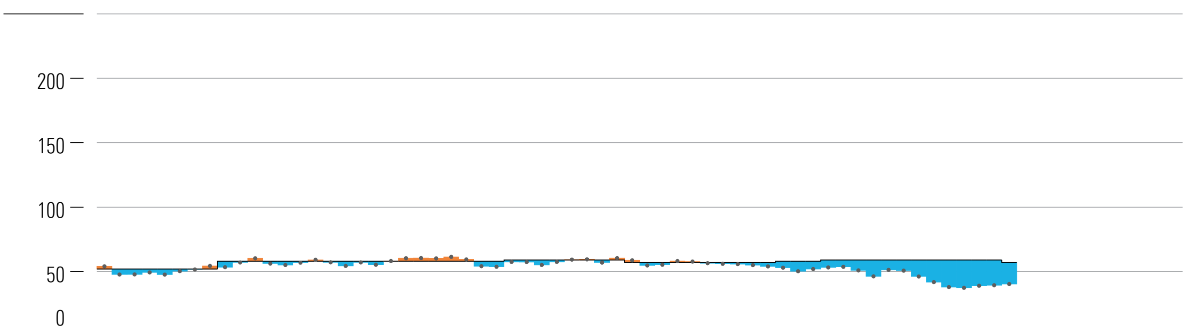
2018	2019	2020	2021	2022	YTD	
0.81	1.00	1.05	0.84	0.58	0.67	Price/Fair Value
-12.69	33.92	18.52	-2.08	-28.41	15.44	Total Return %

Morningstar Rating



Total Return % as of 25 Jan 2023. Last Close as of 25 Jan 2023. Fair Value as of 29 Jul 2021 17:13, UTC.

Verizon Communications Inc VZ

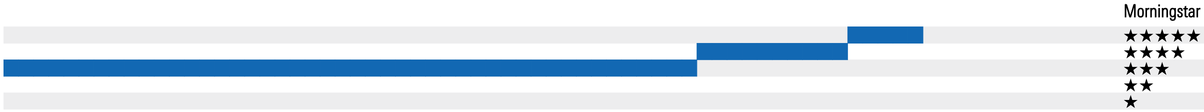


Fair Value: 57.00
24 Jan 2023 21:06, UTC

Last Close: 40.33
Over Valued
Under Valued

2018	2019	2020	2021	2022	YTD	
0.97	1.06	1.03	0.90	0.67	0.71	Price/Fair Value
10.70	13.52	-0.29	-7.26	-19.22	4.02	Total Return %

Morningstar Rating



Total Return % as of 25 Jan 2023. Last Close as of 25 Jan 2023. Fair Value as of 24 Jan 2023 21:06, UTC.

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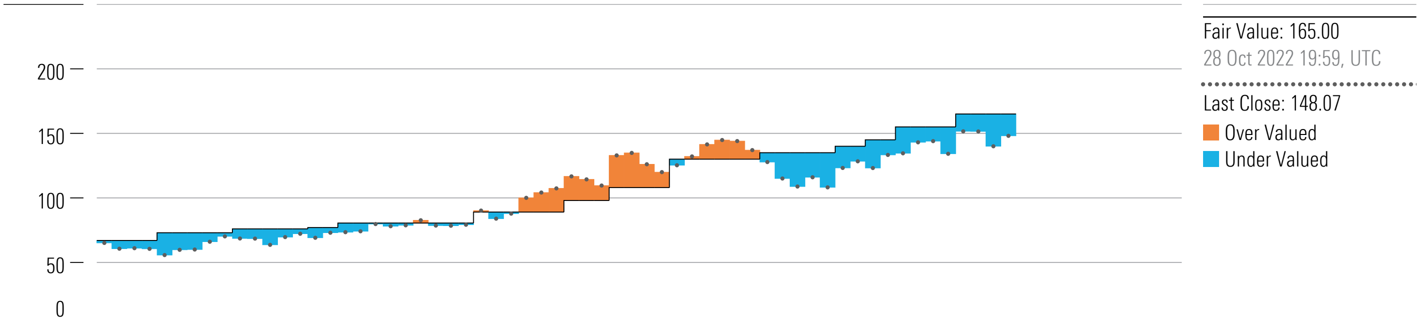
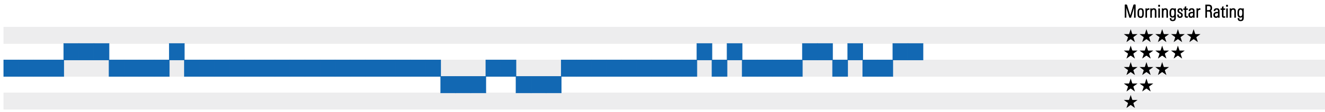
Competitors Price vs. Fair Value (Continued)

T-Mobile US Inc TMUS



	2018	2019	2020	2021	2022	YTD	
	0.84	0.97	1.25	0.86	0.85	0.90	Price/Fair Value
	0.16	23.28	71.96	-13.99	20.71	5.76	Total Return %



Total Return % as of 25 Jan 2023. Last Close as of 25 Jan 2023. Fair Value as of 28 Oct 2022 19:59, UTC.

Recent Analyst Notes

The U.S. Wireless Carriers Are Poised to Gush Cash; Verizon Shares Particularly Attractive Michael Hodel,Director,16 Nov 2022

Sentiment around the U.S. wireless industry, especially Verizon, has turned negative recently. We suspect industry bears hold two key contentions: First, the carriers will perpetually spend egregiously on their networks, primarily buying wireless spectrum whenever the government makes more available. Second, in an extremely mature market, these firms will beat each other up seeking whatever growth remains, punishing revenue and margins. As such, balance sheets will continually need repair and cash available for shareholders will be increasingly limited.We believe this outlook is wrong. Following a series of spectrum auctions, AT&T and Verizon have acquired a trove of spectrum that should allow both firms to close the network speed and capacity gap that T-Mobile has opened recently. Even with the huge increase in capital invested following these auctions, returns on capital remain acceptable for each of the wireless carriers, in our view. Going forward, we expect driving returns comfortably above the cost of capital will be the carriers' highest priority.Market share shifts gradually thanks to phone installment plans and general customer inertia. As a result, we believe the carriers will have increasingly little to gain from huge new network initiatives or increased promotional intensity designed to grab market share. Maximizing the long-term value of the industry as whole, without running afoul of regulators, is the rational choice for each carrier in our view.In our view, this outlook means that market share will gradually move toward parity. As the current share leader and historically the industry's premium player, we believe Verizon has little choice but to accept gradual market share losses. The stock market clearly hates the customer losses the firm has reported recently. However, we account for share losses in our fair value estimate. While AT&T and T-Mobile also trade below our fair value estimates, we believe Verizon shares are particularly attractive.

AT&T Posts Another Solid Quarter as Revenue Growth Continues to Accelerate Michael Hodel,Director,20 Oct 2022

AT&T’s third-quarter results lend support to our view that the firm is poised to deliver steadily improving performance in the coming years. While wireless customer additions slowed, revenue per customer spiked higher, exceeding our expectations. The firm expects to meet or exceed financial targets for the year, including generating $14 billion of free cash flow. While AT&T has clearly backed away from the 2023 free cash flow target of $20 billion set following the Warner spinoff, management expects this metric to grow next year, which we believe to be very reasonable and provides comfort around the dividend. We are maintaining our $25 fair value estimate, and we think the stock is significantly undervalued.Adjusted for business dispositions, total revenue increased 3.1% year over year on solid results across all segments. Wireless service revenue (about half of total firm sales) increased 5.6%, the best result in a decade. AT&T added 708,000 postpaid phone customers during the quarter, down from 928,000 a year ago. The firm continues to do a great job of attracting new customers but the pace of those leaving picked up slightly: monthly postpaid phone churn was 0.84%, up from 0.72% last year.

AT&T has pushed some customers away with select price increases, but churn remains below prepandemic levels. Also, average revenue per postpaid phone customer jumped 2.4% versus a year ago, far stronger than expected entering the year given the accelerating amortization of past promotional credits against revenue.Wireless profitability remains solid. The segment generated a 41.7% EBITDA margin, down slightly from 41.9% a year ago. Management expects margins to begin improving as 3G network shutdown costs dissipate, investments to improve efficiency deliver results, and the benefits of increased sales drive operating leverage.Consolidated free cash flow was flat versus a year ago at $3.8 billion despite a step up in capital investment to $6.8 billion from $5.5 billion.

AT&T Drives Continued Wireless Momentum During Q2; 2022 Free Cash Flow Target Drops to $14 Billion Neil Macker,Senior Equity Analyst,22 Jul 2022

AT&T posted solid telecom results for the second quarter, keeping the firm on pace to meet or exceed management's 2022 subscriber growth expectations. The continued growth in wireless additions led to an increase in the mobility services revenue growth target to 4%-5% from "at least 3%." However, management cut its free cash flow target for 2022 by $2 billion to $14 billion due to continued growth investments and the timing of collections. Our fair value estimate, which reflects the Warner spinoff, remains $25 per share. We continue to like AT&T's strategic position and its network investment plans, which we expect will deliver improving revenue and profit growth over the next several years.Adjusted for the Warner spinoff, DirecTV transaction, and Latin American asset sale, total revenue (now roughly two thirds wireless, with most of the remainder enterprise and consumer fixed-line services) increased 2.2% year over year to $29.6 billion. Wireless service revenue growth accelerated to 4.8% year over year, ahead of management's previous 2022 target and in line with the new one, on strong postpaid phone customer growth in recent quarters. AT&T added 813,000 postpaid phone customers during the quarter, up from 798,000 a year ago, the strongest second quarter in a decade. Despite more than two years of blistering industrywide growth, we still believe that postpaid customer additions will eventually have to tick down and match population growth more closely, but AT&T has yet to see any sign of falling demand.Average revenue per postpaid phone customer was also strong, growing 1.1% versus a year ago as promotional credits, which are amortized against revenue, declined in the quarter and more customers traded up to higher-priced unlimited plans. Management expects average revenue per postpaid phone customer to improve further in the second half. Segment EBITDA expanded by 2.5% year over year, with further expansion projected in the second half of 2022.

AT&T Avoids Distraction, Continues to Gain Wireless Momentum During Q1 Michael Hodel,Director,21 Apr 2022

AT&T delivered generally solid telecom results for its first quarter, putting it on pace to at least meet management's 2022 growth expectations. Evaluating profitability and cash flow is more difficult, given heavy investment in the outgoing WarnerMedia business, the complexity of the various transactions AT&T has undertaken recently, 3G wireless network shutdown costs, and typical seasonal pressures. Management remains committed to delivering $16 billion of free cash flow this year and $20 billion in 2023 under the more conservative calculation it has adopted. Our fair value estimate, recently adjusted to reflect the Warner spinoff, remains $25 per share. We continue to like AT&T's strategic position and its network investment plans, which we expect will deliver improving revenue and profit growth over the next several years.Adjusted for the Warner spinoff, DirecTV transaction, and Latin American asset sale, total revenue (now roughly two thirds wireless, with most of the remainder enterprise and consumer fixed-line services) increased 2.5% year over year. Wireless service revenue growth accelerated to 4.8% year over year, well ahead of management's "at least 3%" 2022 target, on strong postpaid phone customer growth in recent quarters. That strength continued as AT&T added 691,000 postpaid phone customers during the quarter, up from 595,000 a year ago, extending the impressive turnaround in the business. After two years of torrid industrywide growth, postpaid customer additions will eventually have to match population growth more closely, but AT&T hasn't yet seen any sign of falling demand.Average revenue per postpaid phone customer was also surprisingly strong (though perhaps buoyed by the 3G shutdown), declining only 0.2% versus a year ago despite heavy promotional credits, which are amortized against revenue. Segment EBITDA declined 1.8% year over year but would have increased about 2% absent 3G network shutdown costs.

Warner Bros. Discovery Launches as a Media Powerhouse; AT&T Now Focused on Telecom Neil Macker,Senior Equity Analyst,11 Apr 2022

The long-awaited merger between Discovery and WarnerMedia is complete. We are maintaining our narrow moat rating for the successor firm and lowering our fair value estimate to $40 from $42 as we have updated our model to fully incorporate the pro forma results and to forecast the combined firm. For AT&T, we also maintain our narrow moat rating on the standalone telecom firm, with a $25 fair value estimate.Warner Bros. Discovery is now one of the largest media firms in the world with tremendous scale and reach. The merger has created a firm with tremendous content production and distribution capabilities along with a very deep and wide content library. The new company owns a number of well-known networks including HBO, Discovery, CNN, and TLC as well as a slew of major entertainment franchises like Superman, Rick and Morty, and Game of Thrones. We project that the new company, led by Discovery CEO David Zaslav, will use its combined programming library and production capabilities to drive further growth in its streaming services as it navigates the transition toward a more direct-to-consumer focused model, centered on combined HBO Max/Discovery+ services.As for AT&T, we believe the firm is in a much stronger place, with renewed management focus and a stronger financial position. We remain optimistic about the wireless business and expect that AT&T and its rivals will compete rationally, allowing for steady, albeit slow, growth and solid cash flow. We also like the firm's investment plans, which call for aggressive investment in wireless network capacity and the fiber network over the next several years. We expect AT&T will emerge from this period of investment in a unique place within the telecom industry, with the ability to use its combined wireless and fixed-line capabilities to grab market share across a large and growing portion of the U.S.

AT&T Follows Verizon, Pledging Modest Growth and Lower Network Investment in 2024 and Beyond Michael Hodel,Director,13 Mar 2022

AT&T provided additional financial details at its 2022 analyst day, but the firm’s strategic path was largely unchanged. AT&T has two major priorities focused on a common objective: deploying the mid-band spectrum acquired recently and expanding its fiber network aggressively to provide high-quality telecom services. Management reiterated its $20 billion 2023 free cash flow target, clarifying that this figure includes payments for vendor financing. We are leaving our fair value estimate at $35 and believe the stock is attractive.AT&T continues to target 30 million customer locations passed with fiber by the end of 2025, roughly doubling its current footprint to reach half of its fixed-line territory. The firm also spoke at length for the first time about retiring its copper networks—it believes current demand is so low across 25% of its fixed-line territory (about 15 million locations) that regulators will allow it to shift exclusively to wireless technologies in those locations by the end of 2025. If successful, this shift would substantially improve the firm’s cost structure.AT&T also expects to cover 200 million people with deep mid-band spectrum holdings by the end of 2023, likely putting it behind Verizon (targeting 175 million by the end of this year) and T-Mobile (210 million at the end of 2021). We don’t believe this gap is a concern as AT&T is likely targeting areas with the strongest need, and it should reach coverage parity quickly beyond 2023. We expect AT&T will have a strong network position over the medium term as it combines fiber and wireless coverage.The $24 billion network budget for 2022 was maintained, but, as with Verizon last week, AT&T made clear that spending will ramp down once spending to deploy mid-band spectrum slows in 2024. We believe AT&T’s financial targets, including its investment plans, make the same assumption as Verizon’s--that the wireless competitive environment remains the same or improves in the coming years.

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.

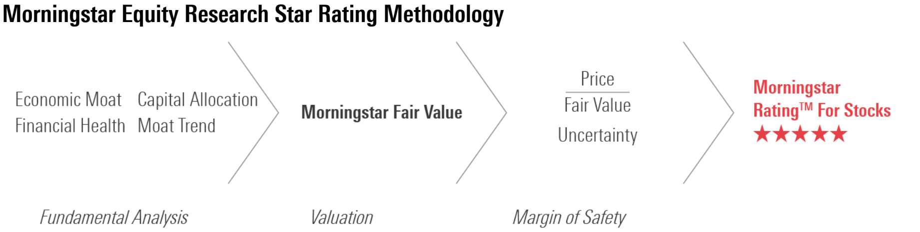
When considering a company's moat, we also assess whether there is a substantial threat of value destruction, stemming from risks related to ESG, industry disruption, financial health, or other idiosyncratic issues. In this context, a risk is considered potentially value destructive if its occurrence 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.

Morningstar Equity Research Star Rating Methodology



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

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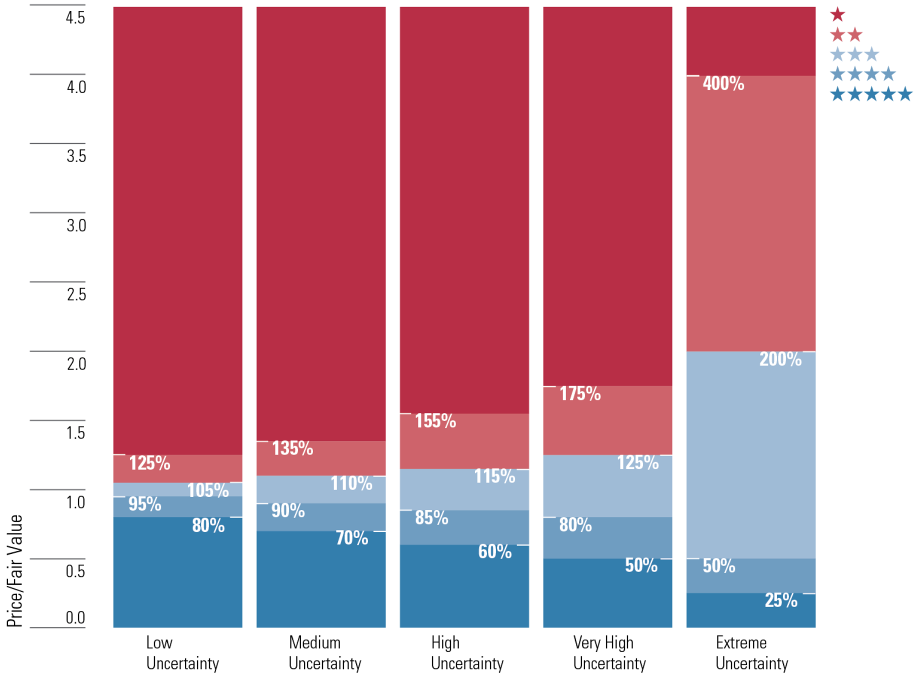
Research Methodology for Valuing Companies

Morningstar Equity Research Star Rating Methodology



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 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.

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

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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 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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