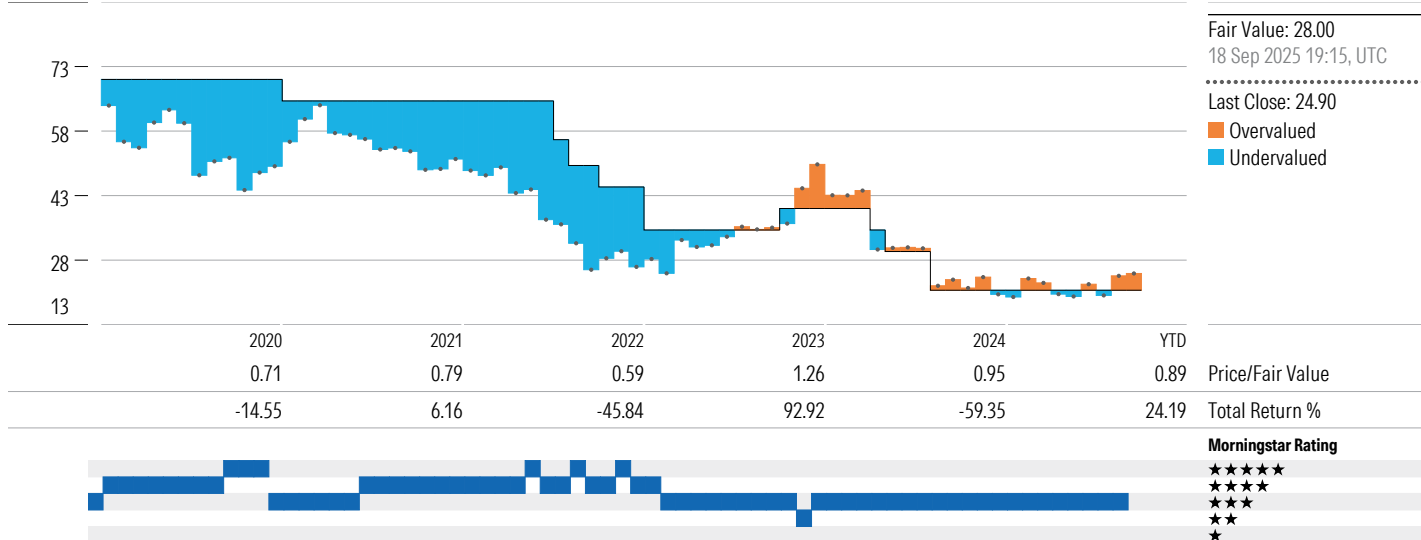


Intel Corp **INTC** ★★★ 18 Sep 2025 19:16, UTC

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|-----------------------------------------------|-------------------------------------------------------------------|--------------------------|----------------------------------------------------|-------------------------------|----------------------------------------|---------------------------------|---------------------------------------|-------------------------------------------------------------|
| Last Price 24.90 USD 17 Sep 2025 | Fair Value Estimate 28.00 USD 18 Sep 2025 19:15, UTC | Price/FVE 0.89 | Market Cap 143.03 USD Bil 18 Sep 2025 | Economic Moat™ None | Equity Style Box Large Blend | Uncertainty Very High | Capital Allocation Standard | ESG Risk Rating Assessment¹ 3 Sep 2025 05:00, UTC |
|-----------------------------------------------|-------------------------------------------------------------------|--------------------------|----------------------------------------------------|-------------------------------|----------------------------------------|---------------------------------|---------------------------------------|-------------------------------------------------------------|

Price vs. Fair Value



Total Return % as of 17 Sep 2025. Last Close as of 17 Sep 2025. Fair Value as of 18 Sep 2025 19:15, UTC.

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

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

Intel: Collaboration With Nvidia Is a Welcome Positive; Raising Fair Value Estimate to \$28 From \$21

Analyst Note Brian Colello, CPA, Senior Equity Analyst, 18 Sep 2025

Intel and Nvidia announced a collaboration to jointly develop multiple generations of custom data center and PC products. Nvidia will also invest \$5 billion in Intel's common stock at a price of \$23.28 per share.

Why it matters: This is another win for Intel as it raises funds for its manufacturing business, Intel Foundry. Yet the deal doesn't alter our Intel thesis, as Nvidia has not committed to shifting massive portions of its chip production to Intel Foundry and away from TSMC.

► While the cash infusion will support Foundry, the collaboration should help to solidify Intel's Products business. A cozier partnership in x86 CPUs in the data center, and integrating Nvidia RTX GPU chiplets into PC CPUs, may help Intel slow its recent market share losses to AMD in CPUs.

The bottom line: We raise our fair value estimate for no-moat Intel to \$28 from \$21 as we are more optimistic about long-term support for Intel's Products segment. We retain our Very High fair value Uncertainty Rating. The 20%-plus rally in shares appears slightly overdone to us.

► We continue to view the bull case for Intel as one where it solidifies its Products business while receiving outside support to ensure a healthy Foundry business. We view the deal as progress on both fronts, but not a seismic shift, and there is more work to be done on all fronts.

Big picture: The game-changer for Intel, in our view, would be if Nvidia were to shift a hefty portion of

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| | |
|-----------------------------|-----------------------------------|
| Sector Technology | Industry Semiconductors |
|-----------------------------|-----------------------------------|

Business Description

Intel is a leading digital chipmaker, focused on the design and manufacturing of microprocessors for the global personal computer and data center markets. Intel pioneered the x86 architecture for microprocessors and was the prime proponent of Moore's law for advances in semiconductor manufacturing. Intel remains the market share leader in central processing units in both the PC and server end markets. Intel has also been expanding into new adjacencies, such as communications infrastructure, automotive, and the Internet of Things. Further, Intel expects to leverage its chip manufacturing capabilities into an outsourced foundry model where it constructs chips for others.

its GPU production to Intel 14A in the future. We don't expect this to happen, given Nvidia's long relationship with TSMC and the latter's plans to expand manufacturing in the US.

- ▶ That said, a cozier relationship between Intel and Nvidia brings optimism that Nvidia might explore Intel Foundry as a minority, if not substantial, manufacturing partner someday, perhaps in GPUs or future PC CPUs, which Nvidia is rumored to be developing.

Business Strategy & Outlook Brian Colello, CPA, Senior Equity Analyst, 12 Mar 2025

Intel's best days are behind it, as it currently has a chip manufacturing disadvantage against Taiwan Semiconductor, or TSMC, and its processor partners, such as AMD, Nvidia, and Apple. It is possible that the best outcome for Intel investors is a breakup of its chip design (Intel products segment) and manufacturing (Intel Foundry) businesses.

Intel is focused on improving Intel Products, even if it means moving away from Intel Foundry and toward its former rival, TSMC. Foundry isn't giving up on focus on manufacturing improvements, such as Intel 18A, is the proper move, but we don't foresee Foundry catching TSMC in process leadership any time soon. Even if successful, Intel's Products competitors will be stronger than when the firm was dominant a decade ago. In turn, we assign Intel a no-moat rating.

We view Intel's former dominance as stemming from two areas. First, its execution of Moore's Law, which predicts transistor density on integrated circuits will double about every two years, meaning subsequent chips have substantial power, cost, and size improvements. In recent years, however, Intel was unable to keep pace. Intel's second advantage comes from its control of x86, the instruction set for virtually the entire history of the PC. Microsoft Windows was written with x86 processors in mind, which virtually guaranteed that almost all PC hardware would run on x86 processors. AMD was granted an x86 license but was a subpar second source for decades, and Intel thrived.

Lately, however, AMD forged a tight partnership with TSMC, allowing AMD to improve its competitiveness versus Intel in both PC and server CPUs. Even if Intel revives its manufacturing roadmap, we don't foresee AMD recoiling from the market. Meanwhile, Apple and its partners made the hard switch to ARM-based CPUs, and the Windows ecosystem is starting to support a similar switch.

Even if Intel achieves its aspirations of reaching five manufacturing node improvements in four years, (culminating with Intel 18A), there is no guarantee of a booming market for PC or server CPUs. Meanwhile, we think Intel is far behind Nvidia, and even AMD, in artificial intelligence products.

Bulls Say Brian Colello, CPA, Senior Equity Analyst, 18 Sep 2025

- ▶ Intel is one of the largest semiconductor companies in the world and still holds leading market share positions within the PC and server processor markets.
- ▶ Intel's Products business segment remains an innovative, profitable design team, and shifting more

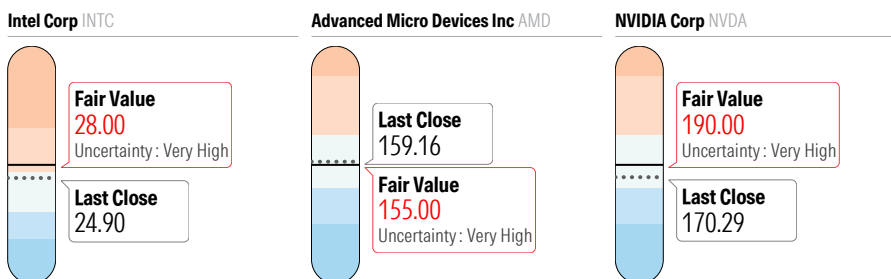
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Competitors



| | | | |
|--------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Economic Moat | None | Narrow | Wide |
| Currency | USD | USD | USD |
| Fair Value | 28.00 18 Sep 2025 19:15, UTC | 155.00 6 Aug 2025 02:12, UTC | 190.00 28 Aug 2025 03:03, UTC |
| 1-Star Price | 49.00 | 271.25 | 332.50 |
| 5-Star Price | 14.00 | 77.50 | 95.00 |
| Assessment | Fairly Valued 17 Sep 2025 | Fairly Valued 17 Sep 2025 | Fairly Valued 17 Sep 2025 |
| Morningstar Rating | ★★★ 18 Sep 2025 19:16, UTC | ★★★ 17 Sep 2025 21:23, UTC | ★★★ 17 Sep 2025 21:23, UTC |
| Analyst | Brian Colello, Senior Equity Analyst | Brian Colello, Senior Equity Analyst | Brian Colello, Senior Equity Analyst |
| Capital Allocation | Standard | Exemplary | Exemplary |
| Price/Fair Value | 0.89 | 1.03 | 0.90 |
| Price/Sales | 2.03 | 8.78 | 25.41 |
| Price/Book | 1.11 | 4.33 | 41.41 |
| Price/Earning | — | 90.43 | 48.52 |
| Dividend Yield | 0.50% | 0.00% | — |
| Market Cap | 116.29 Bil | 258.29 Bil | 4,146.05 Bil |
| 52-Week Range | 17.67—27.55 | 76.48—186.65 | 86.62—184.48 |
| Investment Style | Large Blend | Large Growth | Large Growth |

production to Taiwan Semi might enable the firm to fend off recent market share losses.

- ▶ Intel Foundry is one of only three companies that can come close to building leading edge processors, and additional financial support might enable the business to emerge as a viable manufacturer down the road.

Bears Say Brian Colello, CPA, Senior Equity Analyst, 18 Sep 2025

- ▶ There are no guarantees that Intel can execute on its manufacturing aspirations, such as the release of Intel 18A in 2025.
- ▶ Even if Intel can improve upon its manufacturing roadmap, AMD now sits as a far more credible chip designer in the x86 space for PC and server CPUs, while ARM-based CPUs are a much greater threat than in years past.
- ▶ Nvidia's GPUs have captured most of the artificial intelligence accelerator market, and we don't foresee Intel making a dent in AI accelerators any time soon.

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Economic Moat Brian Colello, CPA, Senior Equity Analyst, 12 Mar 2025

We assign Intel a no-moat rating. The company's returns on invested capital have fallen in recent years, and we do not foresee excess returns on capital in the years ahead. The deterioration stems from the firm's manufacturing struggles and hefty investment phase in new manufacturing processes. We acknowledge that, if Intel were to perfectly execute on its aggressive technological roadmap, it may warrant an economic moat rating in the future. However, this outcome is likely years down the road with no guarantee of success.

Intel's chip design team has decades of experience in processor designs, mostly around central processing units, or CPUs, that, in our opinion, would likely warrant a narrow moat rating in isolation. However, we view the chip manufacturing business as being at a cost and technological disadvantage today, as the firm has stumbled and lost its lead to Taiwan Semiconductor, or TSMC, the world's largest foundry. In our view, Intel's manufacturing headwinds more than offset any competitive advantages that its chip design expertise may warrant.

Intel is perhaps best known for its CPUs for PC desktops and notebooks within its Client Computing Group (CCG) business segment. We think that Intel has a competitive advantage in PC CPU chip designs, not only because of chip design expertise honed over decades, but also because Intel is one of two prominent firms (along with AMD) to hold an x86 instruction set architecture license.

Intel initially developed x86 in the 1970s and emerged as the instruction set required for IBM PCs and, later, Microsoft's operating systems. Intel and AMD are the primary licensees of x86 and owners of x86 intellectual property, as they have a cross-licensing agreement that covers the x86 patent portfolio and would be terminated if either firm was acquired or had a change of control. The exclusivity of the x86 license serves as a significant barrier to entry for other chipmakers (such as Qualcomm, Apple, or others) that cannot make an x86 processor without a license.

For many years, effectively all PC software (including Microsoft's Windows, Apple's Mac operating systems, and any desktop software applications running on both operating systems) was designed for the x86 architecture. Software makers could not easily deviate from building x86-optimized applications, while Microsoft and Apple would have a heavy lift to convert their operating systems to alternate instruction sets (such as those by ARM, which is the dominant instruction set for mobile devices, used in processors from Qualcomm, Samsung, Apple's iPhones, and others). In turn, Apple (for the Mac) and PC vendors (for Windows machines) had little choice than to buy x86 processors from (mostly) Intel or (on occasion) AMD to run their PCs.

Today, however, Apple has already done the heavy lifting of converting its Mac software to ARM and has now built excellent in-house processors for its Mac lineup. Further, an increasing portion of software is

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hosted in the cloud and can run on multiple operating systems and isn't tied to only x86 devices. Microsoft has dabbled in ARM-based versions of Windows but has increased its support of ARM recently, enabling Qualcomm to enter the PC CPU market, and others (perhaps Nvidia) are likely on the way.

We still think it would be a heavy lift for any on-device software makers to port their software to be compatible with ARM-based PCs, but we think the writing is on the wall here to move such software to the cloud or on to ARM-based devices like the Mac. Thus, we don't think the x86 architecture is as moaty as it once was, although we still foresee x86-based processors from Intel and AMD as making up a significant portion of the PC market for the next several years.

Intel also had a historical cost advantage in the PC processor market because of its manufacturing leadership along Moore's Law, which was coined by one of Intel's chief founders, Gordon Moore, and suggests that the number of transistors per unit area doubles approximately every two years. For decades, Intel held a manufacturing advantage that drove PC hardware makers to buy Intel chips, which gave Intel a bigger R&D budget to invest in the next wave of chip innovations, thus coming out with even better processors and keeping the positive flywheel going.

These dynamics have flipped in recent years, however, as Intel has stumbled in internal manufacturing and could no longer keep up with Moore's Law. Meanwhile, AMD has partnered closely with TSMC, the world's largest outsourced chip manufacturer or foundry. TSMC now has a market lead in making cutting edge chips, and AMD is bringing more competitive products to the PC market. In turn, AMD has gained market share over Intel in PCs in recent years.

We view Intel's cost disadvantage as the primary reason for our moat downgrades for Intel from wide to narrow to none. If Intel did not own fabs and instead outsourced production to a foundry like TSMC, it likely would have been far more profitable in 2022 and 2023 during the slowdown in PC demand. Some investors have called for Intel to go fabless, likely to break out the crown jewel chip design team. However, we consider this narrow moat design team as buried within a much larger, struggling, non-moaty manufacturing business.

Intel is investing heavily in new process nodes to strive for manufacturing parity, if not leadership, with TSMC. If Intel is successful, it could regain some lost x86 PC market share. However, we no longer view AMD as an also-ran in PC CPUs, and even if Intel were to improve, we still think AMD could retain enough customers to maintain a healthy PC business. Further, the rise of ARM processor vendors represents an emerging threat that Intel did not face in its heyday a decade ago and earlier.

In server CPUs within Intel's Data Center and AI, or DCAI, segment, we see similar dynamics. Intel captured a dominant market position thanks to both x86 know-how and leading-edge manufacturing, but lost its edge on the latter front, allowing the AMD/TSMC partnership to gain credibility and market

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share in server CPUs.

We also think that any cloud-based software vendors face high switching costs to move their software from x86 servers and on to ARM-based servers, although the switching costs are likely far lower between hosting software on an Intel x86 server versus an AMD one. Still, like the PC market, we see ARM-based processors as a threat, as Amazon, Nvidia, and others are developing ARM-based processors to run traditional server workloads as well as AI applications. Optimizing data center architectures and workloads for ARM-based servers, rather than x86 ones, is again a heavy lift, from what we can gather. However, we recognize that leading hyperscalers (Microsoft, Amazon, and so on) may have the incentive to do so if they can use ARM-based processors to elevate their data centers and devices. Ultimately, we don't foresee a mass exodus away from x86 architectures in the data center for the next several years.

Intel owns some other businesses and segments that hold valuable intangible assets around design expertise. Both Altera and Mobileye were narrow-moat companies when independent. However, most of Intel's revenue comes from CCG and DCAI, and we foresee the PC and server CPU markets as driving Intel's fate for the next few years. We view Intel's current cost disadvantage as offsetting any chip design competitive advantages the firm may have in areas like Altera's field programmable gate arrays, or FPGAs, Mobileye's automotive products, or any semis developed for the communications infrastructure or networking end markets.

Fair Value and Profit Drivers Brian Colello, CPA, Senior Equity Analyst, 18 Sep 2025

Our fair value estimate is \$28 per share, which implies a 2025 enterprise value/adjusted EBITDA multiple of 21 times.

Intel's revenue fell 14% in 2023, due to a significant pause in PC spending after a couple of strong years of upgrades during the covid-19 pandemic, but also because of market share losses and more cautious spending among data center customers. Intel didn't see a huge rebound in 2024 either and sales fell another 2%. We anticipate that market share losses and a lack of meaningful foundry business will cause Intel's revenue to fall another 2% in 2025. We model flattish revenue in 2026, 8%-10% growth in 2027 and 2028, and meaningful growth in 2029 as Intel presumably gains some external foundry business.

Looking at Intel's Client Computing Group, or CCG, which includes the firm's PC CPU business, we anticipate a 4% revenue decline in 2025, no growth in 2026, and mid-single-digit revenue growth thereafter. We anticipate that Intel will continue to lose share to AMD and emerging ARM-based CPU vendors but might be able to stop the bleeding somewhat, thanks to its partnership with Nvidia to include GPU tiles into its x86 CPUs.

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In Data Center and AI, or DCAI, we project flattish revenue in 2025 and 2026, again due to market share loss. We model a growth year in 2027 and low-single-digit growth thereafter. We are pessimistic about Intel's ability to sell server CPUs if wallet share continues to shift to AI servers, rather than traditional ones, while we are no longer anticipating any meaningful revenue from AI accelerators in the years ahead.

Intel is building its foundry business from the ground up. We model \$1.3 billion of revenue from Foundry in 2026, growing to just above \$13 billion in 2029 once the company's hefty manufacturing expansion plans are established. This estimate is meaningfully above our prior estimates, as recent investments in Intel might suggest a favorable roadmap to Intel gaining external customers for 14A in the years ahead. It's conceivable that if Intel were to lose more share in CCG over time, it might be able to partially (if not fully) offset such losses by winning foundry business with these customers.

Intel's manufacturing missteps and a soft PC market have caused GAAP gross margins to crater from 62% in 2018 to 33% in 2024 (and non-GAAP gross margin to fall from 63% to 36%). We think this is the bottom for Intel's business as we model a 33% GAAP gross margin in 2025, expanding to 46% in 2029. Such expansion should occur as Intel moves production to TSMC while improving upon its foundry business. On a non-GAAP basis, we model a 35% gross margin in 2025, expanding to 47% in 2029.

On an operating margin basis, GAAP operating margin has also plummeted from 33% in 2018 to a 22% operating loss in 2024. We foresee an 8% operating loss in 2025 and a 2% operating margin in 2026, respectively, but improvement to a 22% operating margin in 2029. On an adjusted operating margin basis, we expect a 2% margin in 2025, 8% in 2026, and a recovery to 26% in 2029.

Risk and Uncertainty Brian Colello, CPA, Senior Equity Analyst, 12 Mar 2025

We assign Intel with a Morningstar Uncertainty Rating of Very High. Intel continually faces execution risk associated with keeping pace with Moore's Law and creating cutting-edge processors, both in terms of chip design and chip manufacturing. On the latter front, Intel stumbled in recent years, causing the firm to lose market share and suffer notable operating losses. We foresee execution risk associated with Intel's aggressive plans to achieve five processor nodes in four years, culminating with Intel 18A in 2025.

In PCs, Intel now squares off against a more formidable AMD, which has adopted chiplet designs and partnered with TSMC to develop high-end processors on par with (or better than) Intel's recent offerings. Outside of the x86 processor battles between Intel and AMD, we see a risk of Microsoft following Apple's lead and potentially pushing its PC operating system, Windows, toward greater compatibility with ARM-based processors. New ARM entrants could pose credible threats to both AMD and Intel. All the while, the PC market remains cyclical, and Intel will have to navigate the cycles accordingly.

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In the data center, Intel again faces execution risk against the TSMC/AMD partnership, to stop its recent market share bleeding as well as the risk of ARM-based processors gaining prominence. We also foresee a wallet shift away from traditional cloud computing workloads (requiring Intel's CPUs) toward AI accelerator workloads (requiring GPUs from Nvidia). Intel's Gaudi product lineup didn't make a dent in the AI market versus Nvidia, and we have little hope that Intel will emerge as a meaningful vendor of AI accelerators in the years ahead.

On the environmental, social, and governance front, we do not foresee any material issues on the horizon. Perhaps the greatest risk is the potential scarcity of experienced chip design talent within the industry.

Capital Allocation **Brian Colello, CPA, Senior Equity Analyst, 12 Mar 2025**

We assign Intel a Standard Capital Allocation Rating. The rating reflects our assessments of a weak balance sheet (considering recent operating losses), fair investments associated with the firm's strategy and execution, and mixed shareholder distribution policies.

Intel does not have a sound balance sheet today, in our view, given the company's recent inability to generate free cash flow and its aspirations for hefty capital investments into its next wave of chip manufacturing across the globe. As of December 2024, Intel held \$22.1 billion of cash and investments, as compared with \$50 billion of debt. Intel was regularly earning \$10 billion-plus of free cash flow per year in its heyday but burned free cash flow in each year from 2022 to 2024. Financial contributions from partners will be needed to prevent further free cash flow burn in 2025.

Intel has a mixed track record of acquisitions, in our view. Mobileye, acquired for \$15.3 billion in 2017, did well, although the business (publicly traded) carries a lower market cap (as of March 2025) than what Intel paid for it. Intel's acquisition of Habana Labs (\$2 billion in December 2019) was crucial in its AI accelerator strategy, but still did not allow for the firm to make up for a hardware, software, or networking advantage amassed by Nvidia in this space.

We consider Intel's acquisition of Altera (\$16.7 billion in 2015) as mixed—while Altera remains a prominent field programmable gate array, or FPGA, chip designer, we have little evidence that it has fared better under the Intel umbrella, and perhaps it fared worse than its rival Xilinx (since acquired by AMD). Intel's proposed deal for Tower Semiconductor (\$5.4 billion) made strategic sense to us as Intel will need to raise its game in foundry services for others, but the deal was terminated as it failed to receive approval in China.

Intel's internal investments are a sound strategic move, in our view. We believe Intel Foundry should continue to invest in leading-edge chip manufacturing, unlike AMD's decision a decade ago to spin out its fabs into GlobalFoundries. In our view, Intel has little choice but to strive to get back on track in chip manufacturing to come close to parity with TSMC. Such investments will strain the balance sheet, however, and will still require a host of government incentives and investment partnerships to come to

Intel Corp **INTC** ★★★

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fruition. It's conceivable that Intel might try to spin off the foundry business.

On the capital distribution front, negative free cash flow forced Intel to slash its previously healthy dividend.

Analyst Notes Archive

Intel: Maintaining \$21 Fair Value Estimate as Intel Foundry Receives Outside Support Brian Colello, CPA, Senior Equity Analyst, 19 Aug 2025

Intel announced that SoftBank Group will buy \$2 billion of Intel shares at \$23 per share as SoftBank invests in US chip manufacturing. Separately, the US government appears to be closer to a deal to use Chips and Science Act funds to acquire a 10% stake in Intel. Shares rose 7% on the news. Why it matters: The two deals increase the likelihood of Intel's foundry business remaining on track to invest in advanced chip manufacturing (Intel 14A), not only for Intel's internal products businesses, but more importantly, for external foundry customers. Intel foundry was unable to secure significant external customer orders for its upcoming 18A process, but a government stake might either incentivize or outright force some large US fabless chip designers (perhaps Nvidia, Advanced Micro Devices, or Apple) to use Intel foundry on 14A. The SoftBank stake could lead to another of SoftBank's holdings, Arm, to use Intel foundry, as Arm reportedly aspires to build its own line of semiconductors. The bottom line: We maintain our \$21 fair value estimate for no-moat Intel and retain our Very High Uncertainty Rating. Admittedly, these investments bring us closer to a bullish scenario for shareholders where Intel receives support to prop up Intel foundry. While the investments would be good for Intel's revenue and chip manufacturing within the US, Intel will still need to invest heavily to bring this production to fruition. 14A is likely uneconomical without an inflow of external orders. Long view: We also question the profitability of this revenue if the US government is heavily involved in ownership of Intel. Intel might have to offer pricing concessions on these external foundry orders. Also, it's conceivable the US government may strive to earn a tax on this foundry revenue, like the proposed deal for the 15% it seeks on Nvidia's and AMD's AI GPU sales into China once they receive export licenses.

Intel: A US Financial Stake in Intel Would Be Good for Shareholders; Maintain \$21 Valuation Brian Colello, CPA, Senior Equity Analyst, 14 Aug 2025

Bloomberg reported that the US government is in discussions with Intel to potentially take a stake in the chipmaker. Intel's shares rose 7% on the news. Why it matters: Intel no longer controls its own destiny in terms of building leading edge fabs to support its once-dominant processor (CPU) businesses. Rather, Intel will require capital from investors or governments, along with orders from external customers, to support the business. We also believe the US government wants to ensure that leading-edge chip manufacturing is done onshore. These fabs are led by Taiwan Semiconductor, or TSMC, in Taiwan today. Even though TSMC is investing heavily in US fabs, we suspect the US strategically wants

Intel Corp **INTC** ★★★ 18 Sep 2025 19:16, UTC

| Last Price | Fair Value Estimate | Price/FVE | Market Cap | Economic Moat™ | Equity Style Box | Uncertainty | Capital Allocation | ESG Risk Rating Assessment¹ |
|--------------------------|-------------------------------------|-----------|-------------------------------|----------------|------------------|-------------|--------------------|--------------------------------------------------------------------------------------------------------------|
| 24.90 USD 17 Sep 2025 | 28.00 USD 18 Sep 2025 19:15, UTC | 0.89 | 143.03 USD Bil 18 Sep 2025 | None | Large Blend | Very High | Standard |  3 Sep 2025 05:00, UTC |

Intel to succeed. This report suggests that Intel CEO Lip-Bu Tan's meeting with US President Donald Trump earlier this week was a successful one. The bottom line: We maintain our \$21 fair value estimate for no-moat Intel and retain our Very High Uncertainty Rating. We view the stock reaction as reasonable if a deal were to fall in place but don't have much confidence that such a deal will ultimately be consummated. That said, this report is nothing but good news to Intel investors. We still view the best-case scenario for Intel investors is if the company were to receive an infusion to support its fab buildouts, either from a consortium of partners/customers or, in this case, the US government. Coming up: The Bloomberg report specifically cited potential investment in Intel's new fabs in Ohio, where production has been delayed. Tan was clear that it will not invest in next-generation Intel 14A chip production if it can't secure enough potential chip orders from outside customers.

Intel Earnings: Solid Near-Term Revenue but a Somber "State of the Union" Address Brian Colello, CPA, Senior Equity Analyst, 25 Jul 2025

Intel reported second-quarter revenue of \$12.9 billion, flat year over year, up 1.5% sequentially and above the high end of guidance. Third-quarter revenue guidance of \$13.1 billion was ahead of FactSet consensus estimates and would be up 2% sequentially and down 1% year over year. Why it matters: Intel's revenue was better than expected, although the firm couldn't rule out tariff-related pull-ins as a contributing factor. Meanwhile, new CEO Lip-Bu Tan provided investors with (in our opinion) a realistic, but sobering, overview of the business and Intel's challenges ahead. The bottom line: We maintain our \$21 fair value estimate for no-moat Intel. Shares sold off about 5% after hours and appear fairly valued to us. We continue to foresee a wide range of outcomes for Intel's future, underpinning our Very High Uncertainty Rating. Intel's manufacturing remains top of mind for us. We're encouraged that Intel's latest process, 18A, remains on track to be introduced by the end of 2025. However, next gen 14A, which is built since inception with external foundry customers in mind, might not arrive until 2028, if not 2029. Tan also stated that he believed Intel's recent foundry investments were excessive. We're disappointed to hear that Intel was overly optimistic, but encouraged by Tan's focus on improving free cash flow and reducing capital expenditure. Coming up: Intel's third-quarter revenue guidance was good, although management generally expects revenue in the second half of 2025 to be below normal seasonal patterns. Adjusted gross margin guidance of 36% represents a downtick as 18A production ramps up. As part of Intel's fiscal prudence, the company will not continue its manufacturing projects in Germany or Poland, while slowing its pace of expansion in Ohio, US (while maintaining flexibility to kickstart Ohio expansion as needed).

Intel Earnings: Several Near-Term Concerns Persist as the Company Executes Its Turnaround Brian Colello, CPA, Senior Equity Analyst, 25 Apr 2025

Intel reported first-quarter revenue of \$12.7 billion, flattish year over year but toward the high end of guidance, while gross margin exceeded guidance. Second-quarter revenue is expected to be \$11.8

Intel Corp **INTC** ★★★

18 Sep 2025 19:16, UTC

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|--------------------------|-------------------------------------|-----------|-------------------------------|----------------|------------------|-------------|--------------------|--------------------------------------------------------------------------------------------------------------|
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billion at the midpoint of guidance, below the FactSet consensus estimate of \$12.8 billion. Why it matters: Intel's first-quarter results look good on the surface, but we're concerned that the PC processor revenue mix shifted toward older chipsets as PC manufacturers want to hit lower price points. Data center revenue may have also been artificially boosted by pull-ins ahead of tariffs. Much of Intel's turnaround hinges on foundry development of 18A to bring leading-edge processors to market, and while Intel's roadmap is on track, we're concerned that customers may not see enough value in these high-end chips to drive robust demand and fill Intel's 18A factories. Meanwhile, Intel remains desperate to acquire a premier foundry customer for 18A and future nodes. We like the comments laid out by new CEO Lip-Bu Tan, but think Intel still has a tough road ahead until it can prove it will have a meaningful pipeline of external foundry customers. The bottom line: We maintain our \$21 per share fair value estimate for no-moat Intel, along with our Very High Morningstar Uncertainty Rating. Shares sold off about 5% after hours, and we view shares as fairly valued. We still see a wide range of outcomes for investors, with the most bullish involving some sort of support for the foundry business, either from the US government or external foundries and customers in tandem. Coming up: Intel's second-quarter forecast was conservative when compared with normal seasonal patterns, but was likely prudent given tariff concerns. Within semis, we are modestly more concerned that Intel's near-term strength was boosted by tariff pull-ins, meaning that a shortfall may loom ahead.

Intel: Making Progress, but We're Underwhelmed With the Cash Received for Altera Brian Colello, CPA, Senior Equity Analyst, 14 Apr 2025

Intel entered into a definitive agreement to sell 51% of its business in Altera to Silver Lake, which values the total business at \$8.75 billion. The deal raises cash for Intel, which will likely be poured into its chip manufacturing (foundry) efforts. Intel paid \$16.7 billion for Altera in 2015. Why it matters: As part of Intel's turnaround, the company is raising cash to maintain the hefty investments needed to build a world-class foundry business. While we're pleased to see more cash come into the business, Intel's ownership of Altera appears to have been a flop. We liked the deal for Altera in 2015 as it is one of two leaders in field programmable gate arrays, which we thought Intel could sell into the data center. Altera's revenue and declining net income suggest that Intel made little headway on this front. Even though the FPGA business faced severe headwinds in 2024 with muted demand from telecom and industrial customers, we're disappointed that Altera is now valued at only half of what Intel paid for it just a decade ago. The bottom line: We maintain our \$21 fair value estimate and Very High fair value uncertainty rating for no-moat Intel. We view shares as fairly valued. Shares rose 4%, although this may be associated with less concern about tech tariffs in general, rather than resounding approval of the sale. We like the shedding of a noncore asset, and the sale is a sign of progress in improving Intel's focus on core products and foundry. However, we're underwhelmed with the valuation for Altera, not only as Intel is likely selling near a bottom for the company's fundamental business, but also when compared with its original acquisition price.

Intel Corp **INTC** ★★★ 18 Sep 2025 19:16, UTC

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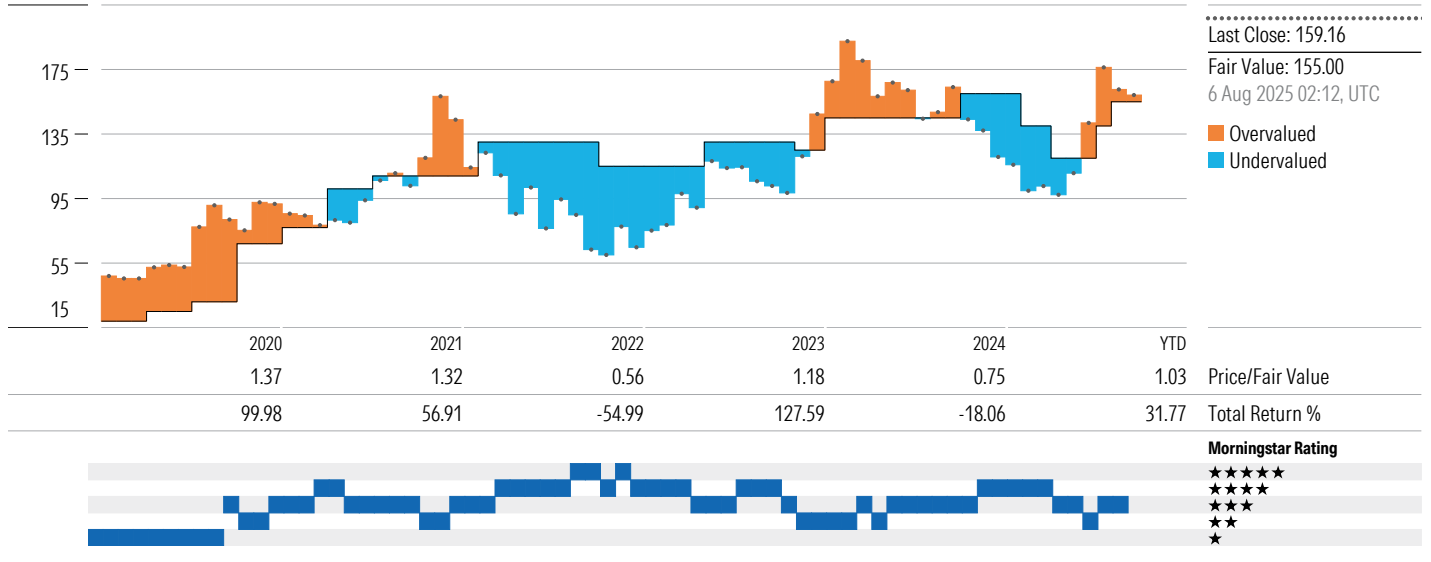
Intel: Joint-Venture Partnership With TSMC Might Be One of Its Best Outcomes Brian Colello, CPA, Senior Equity Analyst, 4 Apr 2025

We are maintaining our \$21 fair value estimate for no-moat Intel despite the positive report that Intel and Taiwan Semi, or TSMC, "tentatively agree" to form a chipmaking (that is, foundry) joint venture, per a report from The Information. Intel rose 2% on the news on April 3 (and was up as much as 6% midday), in contrast to the broader Nasdaq index down 5.4% amid US tariff concerns. The reported deal involves TSMC taking a 20% stake in the JV in exchange for TSMC's industry know-how (rather than a capital contribution), while other US semiconductor firms may join the JV as well. The report suggests that Intel might be having reservations about entering such a deal, but at first glance, this might be a decent outcome for Intel under new CEO Lip-Bu Tan. We continue to believe that the best-case scenario for Intel shareholders is if Intel can receive support for its foundry business (from governments, chipmaking peers, or elsewhere) while maintaining its chip design (that is, product) business. We believe that one of Intel's largest foundry hurdles has been that large potential foundry customers already have tight relationships with TSMC and would not want to risk damaging them, even if Intel were to gain parity or be slightly ahead in chip manufacturing capabilities. If nothing else, TSMC's participation in this type of JV would alleviate this concern. Similarly, these large potential customers (AMD, Nvidia, Apple) all compete with Intel products, so using an Intel foundry might put their design secrets at risk or, at the very least, prop up an ongoing rival. These risks might be mitigated if TSMC were to take the operating lead within such a foundry. Despite our optimism regarding such a JV, neither Intel nor TSMC commented on such a deal, and we consider The Information's report as preliminary. We may revisit our fair value estimate if additional positive details about such an arrangement were to be announced. ■■

Intel Corp **INTC** ★★★ 18 Sep 2025 19:16, UTC

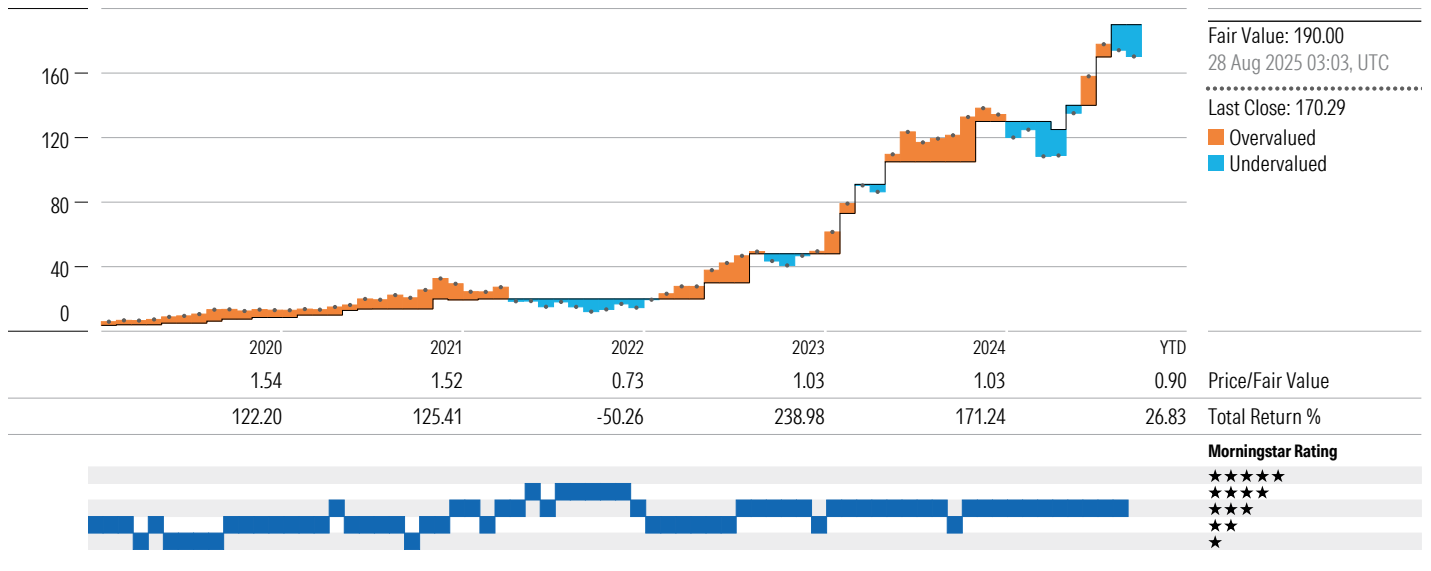
Competitors Price vs. Fair Value

Advanced Micro Devices Inc **AMD**



Total Return % as of 17 Sep 2025. Last Close as of 17 Sep 2025. Fair Value as of 6 Aug 2025 02:12, UTC.

NVIDIA Corp **NVDA**



Total Return % as of 17 Sep 2025. Last Close as of 17 Sep 2025. Fair Value as of 28 Aug 2025 03:03, UTC.

Intel Corp **INTC** ★★★

18 Sep 2025 19:16, UTC

| | | | | | | | | |
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|-----------------------------------------------|-------------------------------------------------------------------|--------------------------|----------------------------------------------------|-------------------------------|----------------------------------------|---------------------------------|---------------------------------------|-------------------------------------------------------------|

Morningstar Valuation Model Summary

Financials as of 18 Sep 2025

| Fiscal Year, ends 31 Dec | Actual | | | Forecast | | | | |
|---------------------------------------------------|--------|---------|---------|----------|--------|--------|--------|--------|
| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Revenue (USD Mil) | 63,054 | 54,228 | 53,101 | 52,249 | 52,048 | 56,013 | 61,660 | 72,266 |
| Operating Income (USD Mil) | 2,336 | 31 | -4,708 | -1,869 | 944 | 5,791 | 9,604 | 16,030 |
| EBITDA (USD Mil) | 15,369 | 9,695 | -299 | 7,598 | 14,007 | 20,204 | 25,367 | 33,143 |
| Adjusted EBITDA (USD Mil) | 15,369 | 9,695 | -299 | 7,598 | 14,007 | 20,204 | 25,367 | 33,143 |
| Net Income (USD Mil) | 8,014 | 1,689 | -18,756 | -5,306 | -415 | 3,969 | 7,413 | 13,288 |
| Adjusted Net Income (USD Mil) | 7,593 | 4,420 | -566 | 693 | 3,497 | 7,682 | 10,975 | 16,757 |
| Free Cash Flow To The Firm (USD Mil) | 887 | -13,188 | -20,447 | -4,094 | -6,143 | 3,501 | 6,490 | 10,098 |
| Weighted Average Diluted Shares Outstanding (Mil) | 4,123 | 4,212 | 4,280 | 4,633 | 5,089 | 5,089 | 5,089 | 5,089 |
| Earnings Per Share (Diluted) (USD) | 1.94 | 0.40 | -4.38 | -1.15 | -0.08 | 0.78 | 1.46 | 2.61 |
| Adjusted Earnings Per Share (Diluted) (USD) | 1.84 | 1.05 | -0.13 | 0.15 | 0.69 | 1.51 | 2.16 | 3.29 |
| Dividends Per Share (USD) | 1.46 | 0.74 | 0.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Margins & Returns as of 18 Sep 2025

| | Actual | | | | Forecast | | | | | 5 Year Avg |
|-------------------------------------|------------|------|-------|-------|----------|-------|------|------|------|------------|
| | 3 Year Avg | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | |
| Operating Margin % | -6.0 | 3.7 | 0.1 | -8.9 | -3.6 | 1.8 | 10.3 | 15.6 | 22.2 | 8.4 |
| EBITDA Margin % | — | 24.4 | 17.9 | -0.6 | 14.5 | 26.9 | 36.1 | 41.1 | 45.9 | — |
| Adjusted EBITDA Margin % | — | 24.4 | 17.9 | -0.6 | 14.5 | 26.9 | 36.1 | 41.1 | 45.9 | 32.9 |
| Net Margin % | -6.5 | 12.7 | 3.1 | -35.3 | -10.2 | -0.8 | 7.1 | 12.0 | 18.4 | 5.3 |
| Adjusted Net Margin % | 6.4 | 12.0 | 8.2 | -1.1 | 1.3 | 6.7 | 13.7 | 17.8 | 23.2 | 12.6 |
| Free Cash Flow To The Firm Margin % | -20.5 | 1.4 | -24.3 | -38.5 | -7.8 | -11.8 | 6.3 | 10.5 | 14.0 | 2.2 |

Growth & Ratios as of 18 Sep 2025

| | Actual | | | | Forecast | | | | | 5 Year CAGR |
|--------------------------------------|-------------|-------|-------|----------|----------|--------|---------|------|------|-------------|
| | 3 Year CAGR | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | |
| Revenue Growth % | -12.4 | -20.2 | -14.0 | -2.1 | -1.6 | -0.4 | 7.6 | 10.1 | 17.2 | 6.4 |
| Operating Income Growth % | — | -89.4 | -98.7 | -15287.1 | -60.3 | -150.5 | 513.2 | 65.8 | 66.9 | — |
| EBITDA Growth % | -63.6 | -50.8 | -36.9 | -103.1 | -2641.2 | 84.4 | 44.2 | 25.6 | 30.7 | -491.3 |
| Adjusted EBITDA Growth % | -121.2 | -50.8 | -36.9 | -103.1 | -2641.2 | 84.4 | 44.2 | 25.6 | 30.7 | -356.4 |
| Earnings Per Share Growth % | — | -60.0 | -79.4 | -1192.8 | -73.9 | -92.9 | -1055.2 | 86.8 | 79.3 | — |
| Adjusted Earnings Per Share Growth % | — | -65.3 | -43.0 | -112.6 | -213.2 | 359.0 | 119.7 | 42.9 | 52.7 | — |

Valuation as of 18 Sep 2025

| | Actual | | | Forecast | | | | |
|------------------------|--------|---------|--------|----------|-------|------|------|------|
| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Price/Earning | 14.4 | 47.9 | -154.2 | 166.0 | 36.1 | 16.5 | 11.5 | 7.6 |
| Price/Sales | 1.7 | 3.9 | 1.6 | 2.2 | 2.2 | 2.1 | 1.9 | 1.6 |
| Price/Book | 1.1 | 2.0 | 0.9 | 1.0 | 1.1 | 1.1 | 1.0 | 0.9 |
| Price/Cash Flow | — | — | — | — | — | — | — | — |
| EV/EBITDA | 8.2 | 24.3 | -377.8 | 19.2 | 10.4 | 7.2 | 5.7 | 4.4 |
| EV/EBIT | 54.0 | 7,603.3 | -24.0 | -78.0 | 154.4 | 25.2 | 15.2 | 9.1 |
| Dividend Yield % | 5.5 | 1.5 | 1.9 | — | — | — | — | — |
| Dividend Payout % | 79.3 | 70.5 | -283.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Free Cash Flow Yield % | — | — | — | — | — | — | — | — |

Operating Performance / Profitability as of 18 Sep 2025

| Fiscal Year, ends 31 Dec | Actual | | | Forecast | | | | |
|--------------------------|--------|------|-------|----------|------|------|------|------|
| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| ROA % | 4.4 | 0.9 | -9.6 | -2.6 | -0.2 | 2.0 | 3.6 | 6.0 |
| ROE % | 7.8 | 1.5 | -17.9 | -4.6 | -0.4 | 3.4 | 5.9 | 9.6 |
| ROIC % | 2.7 | 0.6 | -1.3 | -1.2 | -0.5 | 1.2 | 3.1 | 5.8 |

Intel Corp **INTC** ★★★

18 Sep 2025 19:16, UTC

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|-----------------------------------------------|-------------------------------------------------------------------|--------------------------|----------------------------------------------------|-------------------------------|----------------------------------------|---------------------------------|---------------------------------------|-------------------------------------------------------------|
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|-----------------------------------------------|-------------------------------------------------------------------|--------------------------|----------------------------------------------------|-------------------------------|----------------------------------------|---------------------------------|---------------------------------------|-------------------------------------------------------------|

Financial Leverage (Reporting Currency)

| Fiscal Year, ends 31 Dec | Actual | | | Forecast | | | | |
|------------------------------|--------|-------|--------|----------|--------|--------|-------|-------|
| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Debt/Capital % | 27.8 | 18.9 | 36.6 | 27.4 | 22.6 | 20.2 | 17.7 | 15.6 |
| Assets/Equity | 1.8 | 1.7 | 1.9 | 1.8 | 1.7 | 1.7 | 1.6 | 1.6 |
| Net Debt/EBITDA | 0.9 | 2.5 | -93.5 | 1.0 | 1.0 | 0.4 | 0.0 | -0.4 |
| Total Debt/EBITDA | 2.7 | 5.1 | -167.3 | 6.6 | 3.3 | 2.2 | 1.6 | 1.1 |
| EBITDA/ Net Interest Expense | -2.8 | -14.5 | 0.6 | -237.4 | -152.3 | -102.6 | -83.9 | -81.1 |

Forecast Revisions as of 18 Sep 2025

| Prior data as of 25 Jul 2025 | 2025 | | 2026 | | 2027 | |
|-----------------------------------------------|---------|--------|---------|--------|---------|--------|
| | Current | Prior | Current | Prior | Current | Prior |
| Fair Value Estimate Change (Trading Currency) | 28.00 | 21.00 | — | — | — | — |
| Revenue (USD Mil) | 52,249 | 52,249 | 52,048 | 52,790 | 56,013 | 58,308 |
| Operating Income (USD Mil) | -1,869 | -1,869 | 944 | 1,213 | 5,791 | 7,483 |
| EBITDA (USD Mil) | 7,598 | 7,598 | 14,007 | 14,276 | 20,204 | 21,896 |
| Net Income (USD Mil) | 693 | 693 | 3,497 | 3,733 | 7,682 | 9,166 |
| Earnings Per Share (Diluted) (USD) | -1.15 | -1.22 | -0.08 | -0.04 | 0.78 | 1.22 |
| Adjusted Earnings Per Share (Diluted) (USD) | 0.15 | 0.16 | 0.69 | 0.85 | 1.51 | 2.10 |
| Dividends Per Share (USD) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Key Valuation Drivers as of 18 Sep 2025

| | |
|------------------------------------|------|
| Cost of Equity % | 9.0 |
| Pre-Tax Cost of Debt % | 8.0 |
| Weighted Average Cost of Capital % | 7.9 |
| Long-Run Tax Rate % | 21.0 |
| Stage II EBI Growth Rate % | 7.0 |
| Stage II Investment Rate % | 53.3 |
| Perpetuity Year | 10 |

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

Discounted Cash Flow Valuation as of 18 Sep 2025

| | USD Mil |
|-----------------------------------|----------------|
| Present Value Stage I | 22,383 |
| Present Value Stage II | 20,675 |
| Present Value Stage III | 118,880 |
| Total Firm Value | 161,937 |
| Cash and Equivalents | 22,062 |
| Debt | 50,011 |
| Other Adjustments | 0 |
| Equity Value | 133,988 |
| Projected Diluted Shares | 5,089 |
| Fair Value per Share (USD) | 28.00 |

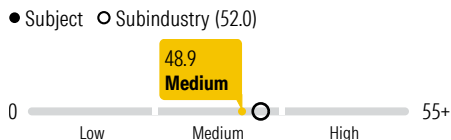
Intel Corp **INTC** ★★★ 18 Sep 2025 19:16, UTC

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|-----------------------------------------------|-------------------------------------------------------------------|--------------------------|----------------------------------------------------|-------------------------------|----------------------------------------|---------------------------------|---------------------------------------|-------------------------------------------------------------|

ESG Risk Rating Breakdown

Exposure

| | | |
|---------------------------|------------|--|
| Company Exposure¹ | 48.9 | |
| - Manageable Risk | 45.2 | |
| Unmanageable Risk² | 3.7 | |



- ▶ Exposure represents a company's vulnerability to ESG risks driven by their business model
- ▶ Exposure is assessed at the Subindustry level and then specified at the company level
- ▶ Scoring ranges from 0-55+ with categories of low, medium, and high-risk exposure

Management

| | | |
|------------------------|-------------|--|
| Manageable Risk | 45.2 | |
| - Managed Risk³ | 30.1 | |
| Management Gap⁴ | 15.1 | |



- ▶ Management measures a company's ability to manage ESG risks through its commitments and actions
- ▶ Management assesses a company's efficiency on ESG programs, practices, and policies
- ▶ Management score ranges from 0-100% showing how much manageable risk a company is managing

Overall Unmanaged Risk 18.8

ESG Risk Rating



ESG Risk Ratings measure the degree to which a company's value is impacted by environmental, social, and governance risks, by evaluating the company's ability to manage the ESG risks it faces.

1. A company's Exposure to material ESG issues 2. Unmanageable Risk refers to risks that are inherent to a particular business model that cannot be managed by programs or initiatives 3. Managed Risk = Manageable Risk multiplied by a Management score of 66.6% 4. Management Gap assesses risks that are not managed, but are considered manageable 5. ESG Risk Rating Assessment = Overall Unmanaged Risk = Management Gap plus Unmanageable Risk

ESG Risk Rating Assessment⁵



ESG Risk Rating is of Sep 03, 2025. Highest Controversy Level is as of Sep 08, 2025. Sustainalytics Subindustry: Semiconductor Design and Manufacturing. Sustainalytics provides Morningstar with company ESG ratings and metrics on a monthly basis and as such, the ratings in Morningstar may not necessarily reflect current Sustainalytics' scores for the company. For the most up to date rating and more information, please visit: sustainalytics.com/esg-ratings/.

Peer Analysis 03 Sep 2025

Peers are selected from the company's Sustainalytics-defined Subindustry and are displayed based on the closest market cap values

| Company Name | Exposure | Management | ESG Risk Rating |
|-----------------------------|--------------------------|--------------------------|--------------------------|
| Intel Corp | 48.9 Medium 0 ———— 55+ | 66.6 Strong 100 ———— 0 | 18.8 Low 0 ———— 40+ |
| Advanced Micro Devices Inc | 31.4 Low 0 ———— 55+ | 64.4 Strong 100 ———— 0 | 12.5 Low 0 ———— 40+ |
| NVIDIA Corp | 30.5 Low 0 ———— 55+ | 59.9 Strong 100 ———— 0 | 13.4 Low 0 ———— 40+ |
| Taiwan Semiconductor Co Ltd | 49.9 Medium 0 ———— 55+ | 53.9 Strong 100 ———— 0 | 25.5 Medium 0 ———— 40+ |
| — | — — 0 ———— 55+ | — — 100 ———— 0 | — — 0 ———— 40+ |

Appendix

Historical Morningstar Rating

Intel Corp **INTC** 17 Sep 2025 21:24, UTC

| | | | | | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Dec 2025 | Nov 2025 | Oct 2025 | Sep 2025 | Aug 2025 | Jul 2025 | Jun 2025 | May 2025 | Apr 2025 | Mar 2025 | Feb 2025 | Jan 2025 |
| — | — | — | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ |
| Dec 2024 | Nov 2024 | Oct 2024 | Sep 2024 | Aug 2024 | Jul 2024 | Jun 2024 | May 2024 | Apr 2024 | Mar 2024 | Feb 2024 | Jan 2024 |
| ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ |
| Dec 2023 | Nov 2023 | Oct 2023 | Sep 2023 | Aug 2023 | Jul 2023 | Jun 2023 | May 2023 | Apr 2023 | Mar 2023 | Feb 2023 | Jan 2023 |
| ★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★★ | ★★★★ |
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Advanced Micro Devices Inc **AMD** 17 Sep 2025 21:23, UTC

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NVIDIA Corp **NVDA** 17 Sep 2025 21:23, UTC

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Research Methodology for Valuing Companies

Overview

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

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

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

1. Economic Moat

The concept of an economic moat plays a vital role not only in our qualitative assessment of a firm's long-term investment potential, but also in the actual calculation of our fair value estimates. An economic moat is a structural feature that allows a firm to sustain excess profits over a

long period of time. We define economic profits as 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 mid-cycle basis. If we deem the probability of occurrence sufficiently high, we would not characterize the company as possessing an economic moat.

2. Estimated Fair Value

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

Our model is divided into three distinct stages:

Stage I: Explicit Forecast

In this stage, which can last five to 10 years, analysts make full financial statement forecasts, including items such as revenue, profit margins, tax rates, changes in working capital accounts, and capital spending. Based on these projections, we calculate earnings before interest,

after taxes (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 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

Morningstar Equity Research Star Rating Methodology



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Research Methodology for Valuing Companies

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 |

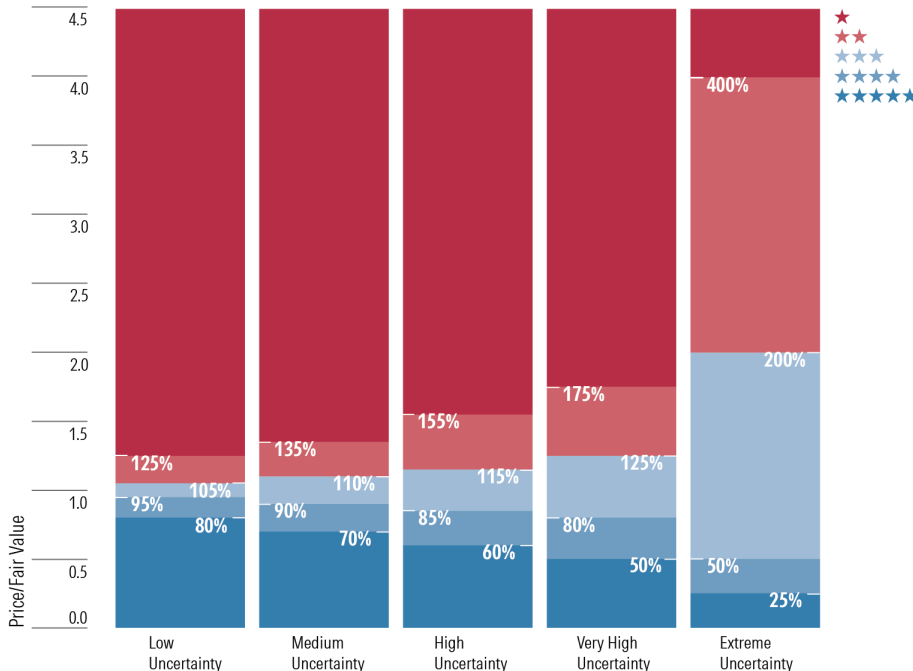
Our uncertainty rating is based on the interquartile range, or the middle 50% of potential outcomes, covering the 25th percentile–75th percentile. This means that when a stock hits 5 stars, we expect there is a 75% chance that the intrinsic value of that stock lies above the current market price. Similarly,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



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 multi-year 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,

Research Methodology for Valuing Companies

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.

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

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

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

Sustainalytics' ESG Risk Ratings measure the degree to which company's economic value at risk is driven by environment, social and governance (ESG) factors.

Sustainalytics analyzes over 1,300 data points to assess a company's exposure to and management of ESG risks. In other words, ESG Risk Ratings measures a company's unmanaged ESG Risks represented as a quantitative score.

Unmanaged Risk is measured on an open-ended scale starting at zero (no risk) with lower scores representing less unmanaged risk and, for 95% of cases, the unmanaged ESG Risk score is below 50.

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

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

Ratings should not be used as the sole basis in evaluating a company or security. Ratings involve unknown risks and uncertainties which may cause our expectations not to occur or to differ significantly from what was expected and should not be considered an offer or solicitation to buy or sell a security.

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