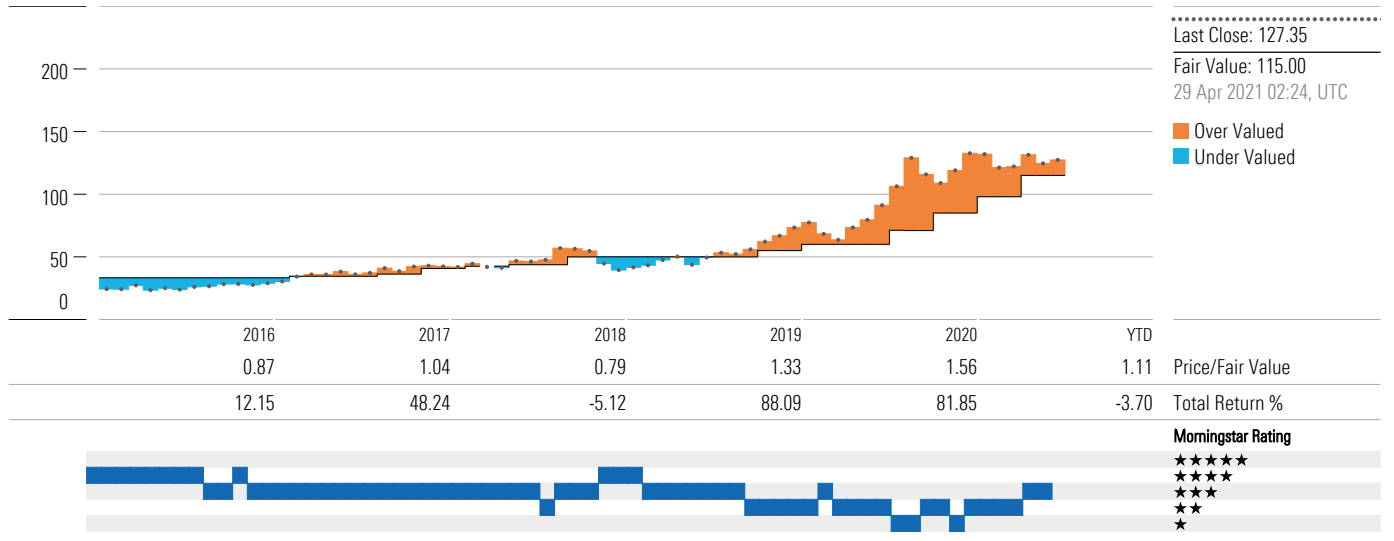


# Apple Inc AAPL ★★★ 11 Jun 2021 21:18, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment <sup>1</sup>
127.35 USD 11 Jun 2021	115.00 USD 29 Apr 2021 02:24, UTC	1.11	2.13 USD Tril 11 Jun 2021	Narrow	Stable	High	Standard	2 Jun 2021 05:00, UTC

## Price vs. Fair Value



Total Return % as of 11 Jun 2021. Last Close as of 11 Jun 2021. Fair Value as of 29 Apr 2021 02:24, UTC.

## Contents

- Analyst Note (11 May 2021)
- Business Description
- Business Strategy & Outlook (30 Oct 2020)
- Bulls Say / Bears Say (28 Apr 2021)
- Economic Moat (29 Oct 2020)
- Fair Value and Profit Drivers (28 Apr 2021)
- Risk and Uncertainty (29 Oct 2020)
- Capital Allocation (4 Nov 2020)
- Analyst Notes Archive
- Financials
- Research Methodology for Valuing Companies

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

<sup>1</sup>The ESG Risk Rating Assessment is a representation of Sustainalytics' ESG Risk Rating.

## Corporate Tax Hikes Are Very Likely to Come for U.S. Equities

**Analyst Note** Preston Caldwell, Equity Analyst, 11 May 2021



We expect a U.S. corporate tax hike to be passed this year. Our probability-weighted forecast is an increase in the statutory tax rate to 26% from 21% currently. Our equity analysts will be incorporating the new tax rate into their valuation models over the coming weeks, but our preliminary analysis suggests a mid-single-digit impact to the average U.S. equity valuation.

President Joe Biden has unveiled a \$2 trillion infrastructure plan that he plans to pay for largely with increases in corporate taxes. While there are other plausible sources of revenue, these will likely be needed for other spending priorities, so we believe there is a high probability that Congress will pass an increase in corporate taxes this year, effective in 2022.

Biden's proposal is to increase the corporate tax rate to 28% from the current 21% (but below the 35% before the Tax Cuts and Jobs Act of 2017). Our probability-weighted estimate is a new corporate business tax rate of 26%, which incorporates an 80% probability that any tax increase is passed at all. Conditional on an increase passing, we've penciled in an 80% probability that Biden's proposed 28% is passed versus a 20% probability that the increase is limited to 25%.

We've simulated the impact of various tax rate changes on valuations for our covered U.S. equities. For the average U.S. equity, the impact of the statutory tax rate increase to 26% from 21% generates a 2.7% fall in valuation. If rates increase to the full 28% as proposed, that generates a 3.8% fall in valuation.

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Sector	Industry
 Technology	Consumer Electronics

## Business Description

Apple designs a wide variety of consumer electronic devices, including smartphones (iPhone), tablets (iPad), PCs (Mac), smartwatches (Apple Watch), and TV boxes (Apple TV), among others. The iPhone makes up the majority of Apple's total revenue. In addition, Apple offers its customers a variety of services such as Apple Music, iCloud, Apple Care, Apple TV+, Apple Arcade, Apple Card, and Apple Pay, among others. Apple's products run internally developed software and semiconductors, and the firm is well known for its integration of hardware, software and services. Apple's products are distributed online as well as through company-owned stores and third-party retailers. The company generates roughly 40% of its revenue from the Americas, with the remainder earned internationally.

## Business Strategy & Outlook Abhinav Davuluri, CFA, Sector Strategist, 30 Oct 2020

Apple's competitive advantage stems from its ability to package hardware, software, services, and third-party applications into sleek, intuitive, and appealing devices. This expertise enables the firm to capture a premium on its hardware, unlike most of its peers. Despite its admirable reputation, loyal customer base, and unique products, the consumer hardware space can be unforgiving to firms unable to consistently satiate the customer's appetite for more features. Given the short product cycles of Apple's products and army of firms targeting its dominance, we do not believe Apple has a wide economic moat.

Switching costs and intangible assets support Apple's narrow moat. The firm enjoys stellar returns on its devices by offering a unique user experience with its iOS ecosystem. Contrary to its peers in PCs and smartphones that rely on open operating systems, Windows and Android, respectively, Apple's walled garden approach for its popular iOS allows it to charge a premium for relatively commoditized hardware not too different from that sold by Samsung, Dell, and others. Customer switching costs are elevated for Apple users as a non-Apple iOS experience does not exist, unlike computing platforms for the Windows or Android ecosystems that boast PCs and smartphones from a multitude of firms.

We view the iPhone as a revolutionary product that created the smartphone ecosystem and transitioned computing habits away from the PC. The robust app store helped foster iPhone adoption and grow Apple's user base, with applications ranging from productivity, social media, gaming, music, and so on. We foresee Apple's ongoing business coming from existing customers versus new smartphone adopters. With hardware becoming increasingly commoditized and replacement cycles potentially elongating in the long term, we expect Apple to focus on newer software and services to augment the user experience and retain customers. The firm's additional products and services (Apple Watch, iCloud, Apple TV+, AirPods, Apple Pay) act as both supplemental revenue opportunities and, more importantly, critical enhancements to the iOS ecosystem that support Apple's crown jewel: the iPhone.

## Bulls Say Abhinav Davuluri, CFA, Sector Strategist, 28 Apr 2021

- ▶ Between greater smartphone penetration in emerging markets and repeat sales to current customers, Apple has plenty of opportunity to reap the rewards of its iPhone business.
- ▶ Apple's iPhone and iOS operating system have consistently been rated at the head of the pack in terms of customer loyalty, engagement, and security, which bodes well for long-term customer retention.
- ▶ We think Apple is still innovating with introductions of Apple Pay, Apple Watch, Apple TV, and AirPods; each of these could drive incremental revenue, but more crucially help to retain iPhone users over time.

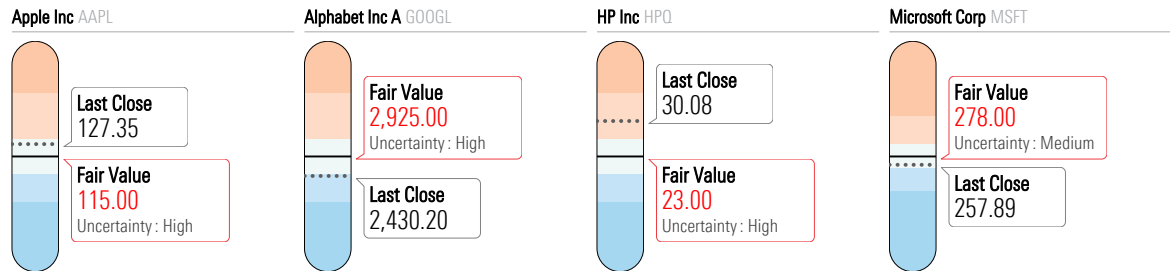
## Bears Say Abhinav Davuluri, CFA, Sector Strategist, 28 Apr 2021

- ▶ Apple's decisions to maintain a premium pricing strategy may help fend off gross margin compression but could limit unit sales growth, as devices may be unaffordable for many customers.

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## Competitors



	Apple Inc AAPL	Alphabet Inc A GOOGL	HP Inc HPQ	Microsoft Corp MSFT
Economic Moat	Narrow	Wide	None	Wide
Moat Trend	Stable	Stable	Negative	Stable
Currency	USD	USD	USD	USD
Fair Value	115.00 29 Apr 2021 02:24, UTC	2,925.00 28 Apr 2021 01:40, UTC	23.00 26 Feb 2021 05:50, UTC	278.00 28 Apr 2021 02:29, UTC
1-Star Price	178.25	4,533.75	35.65	375.30
5-Star Price	69.00	1,755.00	13.80	194.60
Assessment	Fairly Valued 11 Jun 2021	Under Valued 11 Jun 2021	Over Valued 11 Jun 2021	Under Valued 11 Jun 2021
Morningstar Rating	★★★ 11 Jun 2021 21:18, UTC	★★★★ 11 Jun 2021 21:18, UTC	★★ 11 Jun 2021 21:18, UTC	★★★★ 11 Jun 2021 21:18, UTC
Analyst	Abhinav Davuluri, Sector Strategist	Ali Mogharabi, Senior Equity Analyst	Mark Cash, Senior Equity Analyst	Dan Romanoff, Equity Analyst
Capital Allocation	Standard	Standard	Standard	Exemplary
Price/Fair Value	1.11	0.83	1.31	0.93
Price/Sales	6.72	9.03	0.66	12.29
Price/Book	30.72	7.08	—	14.44
Price/Earning	28.49	32.39	10.67	35.13
Dividend Yield	0.66%	—	2.52%	0.85%
Market Cap	2,125.17 Bil	1,655.73 Bil	36.13 Bil	1,942.32 Bil
52-Week Range	83.15—145.09	1,351.65—2,441.72	15.67—36.00	184.01—263.19
Investment Style	Large Core	Large Growth	Large Value	Large Growth

- ▶ If Apple were to ever launch a buggy software update or subpar services, it could diminish the firm's reputation for building products that "just work."
- ▶ Apple is believed to be behind firms like Google and Amazon in artificial intelligence, or AI, development (notably Siri voice recognition), which could be problematic as tech firms look to integrate AI in order to deliver premium services to customers.



### Economic Moat Abhinav Davuluri, CFA, Sector Strategist, 29 Oct 2020

We assign a narrow economic moat rating for Apple that stems from the combination of switching costs and intangible assets. We think the firm's primary moat source is customer switching costs, as Apple bolsters the user experience with a cohort of auxiliary products such as iPad, Apple TV, Apple Watch, AirPods, and so on, and services (iMessage, FaceTime, Apple Pay) that augment Apple's sphere of influence on the consumer. As current iPhone users are familiar with the iOS environment (Apple-centric apps, services, and so on), it may take multiple subpar product releases to warrant an exodus to an Android OS, as these customers are likely loath to leave Apple's seemingly superior walled garden.

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Regarding intangible assets, Apple's differentiated user experience via iOS coupled with its expertise in both hardware and software design allows the firm to more seamlessly build integrated products. We see no other technology titan with comparable expertise in both hardware and software. In turn, we believe this integration allows Apple to build industry-leading devices that command industry-leading average selling prices, most notably the firm's crown jewel: the iPhone.



Recent survey data shows that iPhone customers are not even contemplating switching brands today. In a December 2018 survey by Kantar, 90% of U.S.-based iPhone users said they planned to remain loyal to future Apple devices. A recent survey (as of October 2020) from 451 Research indicates iPhone customer satisfaction of 98% for iPhone 11, 11 Pro, and 11 Pro Max combined. Also, users of ancillary products (especially the Watch and AirPods) lose significant functionality when paired with a smartphone other than the iPhone. Ultimately, we believe that existing iPhone users are relatively locked in to the iOS ecosystem and interface.

While the Android cohort has attempted to replicate a similar feel of apps, app stores, and integrated experience, the fragmentation of its key players will likely prevent many loyal iOS users from switching, at least over a few product cycles. Competitors such as Samsung (Galaxy smartphone) and Google (Android OS) specialize in hardware and software, respectively, with Samsung boasting leadership in mobile device units and Google's Android OS serving as the pervasive smartphone OS. Although Apple's low-double-digit market share in the smartphone space doesn't seem excessive, the firm does enjoy the lion's share of industry profits. Neither Samsung nor Google has been able to offer a comprehensive and integrated product like the iPhone, though both have attempted to develop software/operating systems (Samsung's Tizen OS) and hardware (Google's Pixel smartphone), with mixed results. We believe Apple's expertise in both hardware and software represents an intangible asset that even the strongest of tech firms have struggled to replicate.

Although Apple's brand tends to be associated with premium technology gadgets, we don't think it can support an economic moat in isolation. Specifically, Apple's brand strength is a consequence of its differentiated hardware and software design, not the cause. We don't think Apple can charge twice the price of a similar set of hardware solely by sticking an Apple logo on it. Similarly, we suspect that Apple's brand equity will wane if the firm's products were technologically inferior to competitors over an extended period of time. As evidence, Nokia was the eighth-most-valuable brand in the world as recently as 2010, according to Interbrand, before succumbing to the rise of the smartphone.

The active installed base of Apple devices reached 1.5 billion at the end of 2019, up from 1.4 billion a year prior, showing the strong stickiness Apple has created. However, these switching costs are not insurmountable, illustrated by the rise and fall of former mobile device titans such as Nokia, Motorola, and BlackBerry, all of which failed to keep up with smartphone innovation. The short product cycles for phones and the inability of these firms to sufficiently innovate left each one struggling after the debut of

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Apple's iPhone and its subsequent proliferation. Apple is not immune to these pitfalls, as consumer sentiment for technology gadgets can be unforgiving, with one buggy or subpar product potentially driving customers to other companies' offerings, which have been increasingly competitive. We have often seen innovative features arise in the Android ecosystem before Apple, such as OLED screens and 3D sense. These industry dynamics prevent us from assigning a wide moat rating for Apple.



At this point, we do not consider network effects to be a key source of Apple's moat. We acknowledge that Apple's iOS users gravitate to the App Store to purchase new applications, and the size of Apple's installed base attracts developers to build new apps for iOS. Apple's integration of hardware and software also supports its developer networks, as Apple knows that iOS will be loaded on to only a handful of screen sizes or iPhone models, versus the hundreds of devices and manufacturers that support Android. This leads to a more fragmented Android ecosystem, which we believe is relatively harder for developers to support. Apple consistently touts when the majority of its user base is on the latest operating system, which in turn allows developers to build for the latest version of iOS and know that their apps are optimized for most of Apple's user base. Nonetheless, the Google Play store that supports the Android user base also achieves a similar network effect. Ultimately, we view the hardware and software (device and iOS) as the key differentiators for Apple's moat sources (switching costs and intangible assets), since the lion's share of applications used by smartphone users are platform-agnostic, in our view. Even for apps built for iOS first before Android (with the popular video game Fortnite being one recent example), mobile apps are ultimately built for both platforms in short order.

Finally, Apple may boast some cost advantages associated with its supply chain, such as pressuring suppliers or making massive purchases of memory, flash storage, and other key components. However, these advantages are predicated on the immense forecast volume of Apple's products, and we surmise these advantages would evaporate if Apple's device production were to diminish. Apple likely could not build the lowest cost phone in the industry as it has to build iOS, rather than use Android for free. More important, this is likely a moot point as we think Apple will play at the high end of the market with best-of-breed components for the foreseeable future — it's been doing so with the Mac for 40 years and counting.

### Fair Value and Profit Drivers Abhinav Davuluri, CFA, Sector Strategist, 28 Apr 2021

Our fair value estimate is \$115 per share. Our estimate implies a forward GAAP P/E ratio of 22 times. In fiscal 2021, we expect total revenue to be up 31% thanks to strength in Mac and iPad sales related to work- and learning-from-home trends and the 5G iPhone 12 launch. With the iPhone 12 coming out in October 2020 (fiscal first-quarter 2021) instead of September 2020 (fiscal fourth-quarter 2020), we think Apple is poised for strong iPhone sales in the first half of fiscal 2021. We expect services to grow at a 11% CAGR over the next five years, while wearables also maintains strong double-digit growth.

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Following a robust growth year in fiscal 2021, we believe iPhone sales will record modest growth, with double-digit services growth driving total revenue growth in the mid-single digits.

We expect gross margins to remain in the high-30s, thanks to Apple's exceptional premium pricing strategy and stable iPhone margins. The firm recently began disclosing product and services gross margins, and we anticipate product gross margins tracking in the low-30s and services gross margins hovering around 65%. Although we think the higher-margin services segment will grow nicely, we foresee lower-margin other products, such as the Apple Watch, serving as an offset. However, these other products remain vital to Apple being able to lock in iPhone customers with the likes of AirPods, Watches, and other accessories that sell at a notable premium to non-Apple counterparts. The shift to internally designed ARM-based chips in lieu of chips from Intel for Apple's Mac PCs should help improve Mac margins. To remain king of the hill in the premium smartphone market, we model higher research and spending as Apple drives innovation and potentially ventures into new frontiers. We expect operating margins to remain in the mid-20s.



### **Risk and Uncertainty** Abhinav Davuluri, CFA, Sector Strategist, 29 Oct 2020

As one of the largest firms in the world, Apple is susceptible to competitive threats from capable behemoths with significant resources. Over the course of its iPhone-fueled decade of dominance, Samsung, Microsoft, Google, and others have taken their best shots at Apple, with fleeting success. Consumer hardware is inherently prone to cutthroat competition as short-product cycles and customers hungry for greater features make market leadership difficult to sustain. Although Apple has done well with its walled garden approach with iOS, the firm competes with Chinese OEMs at the low and midtier as well as tech titans such as Samsung across the entire spectrum of smartphones.

Furthermore, we suspect that many customers are holding on to their phones longer as premium devices are more than good enough for today's needs (web browsing, media streaming, social media) and potentially tomorrow's (virtual/augmented reality). Analogous to the decline of PCs (with current PCs more than adequate for most applications), Apple faces the possibility of smartphone unit stagnation or even declines once emerging markets saturate or consumers gravitate to mid-tier devices. Should it be unable to innovate, the firm may lose its ability to charge premium prices for hardware that is no longer indistinguishable from many comparable devices.

Some competitors are willing to sell hardware at essentially cost to drive revenue or stickiness in other business segments. A notable example is Amazon with its multitude of products including its Echo smart speaker, Fire TV, Prime Music, Kindle Fire, and Prime Video to attract and retain Prime customers. Should these devices supersede their iOS counterparts, Apple's devices may be at risk. A recent focus on AI assistants such as Google Now and Amazon Alexa has also put pressure on Apple's Siri that has fallen behind its peers in efficacy. Herein lies another area Apple may face headwinds if consumers further prioritize voice-recognition capabilities.

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## Capital Allocation Abhinav Davuluri, CFA, Sector Strategist, 4 Nov 2020

We view Apple's stewardship rating as Standard. Tim Cook became CEO in August 2011 after cofounder, longtime CEO, and visionary Steve Jobs stepped down from the CEO role before passing away in October 2011. Cook was considered Jobs' right-hand man and served in various operations roles with Apple before becoming COO in 2005. Although Jobs' death was a blow to the firm, as he was a one-of-a-kind leader and creative mind, Apple is not lacking in capable leaders. Arthur Levinson, former chairman and CEO of Genentech, is chairman of Apple's board of directors. Jeff Williams serves as COO of Apple and would be our best bet to replace Cook as CEO.

We think Apple's recent level of technological innovation has been adequate, though it has likely faced an unreasonably high bar for expectations after the debut of the iPhone. Many of the firm's recent innovations have been in software and services within iOS such as Apple Pay, as well as under-the-hood improvements in semiconductors, rather than revolutionary, ubiquitous devices like the iPod or iPhone. We like how the firm designs its own chips for the CPU and artificial intelligence (A-series bionic neural engine), as this can create a better user experience since Apple also designs the operating system and can appropriately tailor the CPU or neural engine to its needs. Going forward, we expect the firm to also design its own GPU, which should enable performance differentiation.



Products like the Apple Watch, AppleTV, AirPods and HomePod don't move the needle in isolation, but should drive incremental earnings growth to Apple. More importantly, these products will make it more challenging for iPhone users to leave the iOS ecosystem, in our view. Although the Apple Watch has had mixed results at the outset, we don't view it as a miss just yet, given similar slow starts for the iPad and iPhone.

Although Apple maintains sterling brand recognition and has 1.5 billion active devices (as of December 2019), it has made a few missteps under Cook that skeptics would argue wouldn't have happened under Jobs. Apple made a poor decision to part ways with Google Maps in iOS 6 and launch Apple Maps with a bevy of bugs and errors, leading to a formal apology. More recently, Apple is being investigated by the U.S. government as the firm purposefully slowed down iOS on older devices. While the firm claims that it was to protect the user from sudden phone shutdowns, many fear that Apple was implementing planned obsolescence of their devices, in order to get customers to upgrade.

In terms of capital allocation, we applaud Cook's decision to initiate dividend and stock buyback programs, as well as take on debt in order to fund such programs when most of its cash was trapped overseas. As of September 2020, Apple was authorized to purchase up to \$225 billion of stock through its share repurchase program, of which \$168.6 billion had been utilized. Apple continues to strive to achieve a net cash neutral position over time.



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Perhaps more important, we think Apple's frugality in terms of acquisitions is quite admirable. Apple's strategy of focusing on smaller, tuck-in deals and developing products in house, rather than splashy but questionable deals like Microsoft's purchase of Skype or Google's foray into hardware by acquiring Motorola Mobility and Nest, appears to have served investors quite well in recent years. Even Apple's \$3.0 billion acquisition of Beats Music and Beats Electronics represented only a tiny portion of the firm's total cash balance.

Apple has also done a good job of attracting topnotch talent to the company, such as former Burberry CEO Angela Ahrendts to run Apple's retail and online stores. However, we note Ahrendts recently stepped down with head of HR Deirdre O'Brien taking over the role. We are comfortable that these hires have strengthened Apple's bench in the unlikely event of Cook departing the company, and each hire likely has aided in Apple's efforts to build and deliver the Apple Watch and perhaps future products as well. All the while, Apple's ongoing operations continue to generate operating margins and cash flow well above its peers in various hardware industries, which bodes well for future free cash flow for investors.

In July 2019, Intel announced it agreed to sell its 5G smartphone modem business to Apple for \$1 billion. This is the second largest acquisition by Apple (after Beats for \$3 billion in 2014). We had been expecting such a deal since Intel announced its plans to exit the 5G modem business following the resolution of the dispute between Apple and Qualcomm earlier in 2019. We believe this deal validates Apple's strategy of trying to bring as much chip development in-house as feasible, though we don't expect the firm to replace Qualcomm's 5G modems in future iPhones for at least a few years.

## Analyst Notes Archive

### Apple's March Quarter Sales Driven to New Highs by Broad-Based Strength; Raising FVE to \$115



Abhinav Davuluri, CFA, Sector Strategist, 29 Apr 2021

Apple reported fiscal second quarter results ahead of our expectations, led by the iPhone segment. The firm did not provide guidance the last four quarters and once more refrained from offering specific financial expectations due to uncertainty regarding COVID-19. Apple's iPhone revenue grew 66% year over year to \$47.9 billion, thanks to the new 5G iPhone 12 family. Although we anticipate strong double-digit iPhone growth in 2021, we think growth rates will moderate in the coming years. We are raising our fair value estimate for narrow-moat Apple to \$115 per share from \$98 as we incorporate a stronger near-term outlook due to the current 5G iPhone cycle and ongoing work- and learning-from-home dynamics bolstering Mac and iPad segments. Nonetheless, we think shares are currently overvalued, as we think recent growth trends could be unsustainable past 2021.

Second quarter revenue was up 54% year over year thanks to growth in iPhone (66%), iPad (79%), Mac (70%), services (27%), and wearables, home, and accessories (25%). We note the iPhone segment



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benefited from a delayed iPhone 12 launch and all segments faced an easier year-over-year compare due to the March 2020 quarter being negatively impacted by COVID-19. On the services front, Apple now enjoys over 660 million paid subscribers to its various services, up 145 million from a year ago. Greater China sales were up 88% year over year, which we attribute primarily to the new 5G iPhone. Gross margin of 42.5% was up 270 basis points sequentially due to a strong product mix and favorable foreign exchange rates.

Management anticipates strong double-digit year over-year-growth for the June quarter, though the seasonal sequential decline from the March quarter will be greater than prior years. Meanwhile, supply constraints are expected to have a \$3 billion to \$4 billion negative impact on sales in the June quarter.

### Apple's iPhone 12 Launch Propels December Quarter Sales to Record Heights; Raising FVE to \$98

Abhinav Davuluri, CFA, Sector Strategist, 28 Jan 2021



Apple reported fiscal first-quarter results ahead of our expectations led by the iPhone segment. The firm did not provide guidance the last three quarters and once more refrained from offering specific financial expectations due to uncertainty regarding COVID-19. Apple's iPhone revenue grew 17% year over year to a quarterly record \$65.6 billion, thanks to the new 5G iPhone 12 family. Although we anticipate strong double-digit iPhone growth in 2021, we think growth rates will moderate in the coming years. We are raising our fair value estimate for narrow-moat Apple to \$98 per share from \$85 as we incorporate a stronger near-term outlook due to the current 5G iPhone cycle and ongoing work- and learning-from-home dynamics bolstering Mac and iPad segments. Nonetheless, we think shares are currently overvalued, as we think recent growth trends could be unsustainable past 2021.

First-quarter revenue was up 21% year over year thanks to growth in iPhone (17%), iPad (41%), Mac (21%), services (24%), and wearables, home, and accessories (30%). Apple's active installed base of iPhones is now over 1 billion, while its overall installed base of active devices surpassed 1.65 billion during the quarter. On the services front, Apple now enjoys over 620 million paid subscribers to its various services, up 140 million from a year ago. Greater China sales were up 57% year over year, which we attribute primarily to the new 5G iPhone, though management was adamant their iPad and Mac units also fared well in the region. Gross margin of 39.8% was up 160 basis points sequentially due to a higher mix of services and strong leverage from higher sales.

Management anticipates year-over-year growth for the March quarter, though the services business faces a difficult year-over-year comparison. Meanwhile, we expect the Mac and iPad segments to begin decelerating in a few quarters, following a stretch of robust growth due to COVID-19-related working- and learning-from-home.

### Apple's Mac and iPad Sales Remain Bolstered by Work-From-Home Trend in Q4; Raising FVE to \$85

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Abhinav Davuluri, CFA, Sector Strategist, 30 Oct 2020

Apple reported fiscal fourth-quarter results ahead of our expectations led by Mac and iPad segments. The firm did not provide guidance the last two quarters and again refrained from offering specific guidance due to uncertainty regarding COVID-19. CEO Tim Cook expects iPhone revenue to grow in the December quarter despite the new iPhone 12 being launched a couple of weeks later in the quarter, though he did not specify the magnitude of growth. Meanwhile, all other products and services are expected to grow in the double digits.

We are raising our fair value estimate for narrow-moat Apple to \$85 per share from \$71 as we incorporate a stronger near-term outlook for the Mac and iPad segments due to ongoing work- and learning-from-home dynamics. Nonetheless, we think shares are currently overvalued, as we think recent growth trends could be unsustainable as we enter 2021.



Fourth-quarter revenue was up 1% year over year thanks to growth in iPad (46%), Mac (29%), services (16%), and wearables, home, and accessories (21%). Management noted the iPad and Mac segments remained supply constrained, which bodes well for these business lines in the December quarter. Apple's iPhone sales were understandably down 21% year over year due to the iPhone 12 delay. Apple now has over 585 million paid subscribers to its various services, up 135 million from a year ago, and the firm expects 600 million subs by Dec 2020. Although Greater China was the region most impacted by the absence of the new iPhones for the quarter (total revenue down 29% year over year), non-iPhone sales grew double digits. Gross margin of 38.2% was up 20 basis points sequentially due to a higher mix of services.

Management was optimistic revenue from Greater China would grow in the first quarter, particularly as 5G is more mature in the region. We anticipate iPhone revenue for fiscal 2021 will be up in the low teens, though the late launch may shift some sales from the December quarter to the March quarter.

## **Apple Launches 5G iPhone As Expected; Other Enhancements Relatively Lackluster; No Change to FVE** Abhinav Davuluri, CFA, Sector Strategist, 14 Oct 2020

On Oct. 13, Apple held its annual product showcase, where the firm announced the launch of four new iPhone models: the iPhone 12, iPhone 12 mini, iPhone 12 Pro, and iPhone 12 Pro Max. All devices in the "12" family are 5G-compatible. The base iPhone 12 model was priced at \$799, which is \$100 more expensive than the equivalent iPhone 11 launched in 2019, which we attribute to the costly 5G modem and RF content. Taking the \$699 slot is the smaller iPhone 12 mini with a 5.4" screen. While we suspect the 5G capability and updated cameras (the Pro variant boasts a LIDAR scanner to autofocus in low-light) will be major draws for many customers, we think market expectations for iPhone sales in the coming quarters may be too aggressive. We are maintaining our \$71 fair value estimate for narrow-moat Apple, and we view shares as overvalued at current levels.

# Apple Inc AAPL ★★★ 11 Jun 2021 21:18, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment <sup>1</sup>
127.35 USD 11 Jun 2021	115.00 USD 29 Apr 2021 02:24, UTC	1.11	2.13 USD Tril 11 Jun 2021	 Narrow	Stable	High	Standard	 2 Jun 2021 05:00, UTC

Battery life continued to expand, thanks to the new A14 Bionic chip, which is manufactured on TSMC's 5-nanometer process technology that leverages EUV lithography. For the A14, Apple claims a 50% performance advantage over any other competing mobile chip, though we were surprised by a lack of color on power efficiency. For 5G, the firm claimed up to 4Gbps download and 200Mbps upload speeds in ideal conditions. We doubt most users will experience these speeds anytime soon, as the 5G ramp is still in the early innings.

The iPhone 12 Pro and 12 Pro Max will start at \$999 and \$1,099, respectively, in line with the starting prices of their equivalents from 2019. The Pro models both feature larger screens than their predecessors, with the Pro and Pro Max going from 5.8" and 6.1" to 6.5" and 6.7", respectively. The Pro has three cameras (ultra-wide, wide, and telephoto), with the Pro Max having even better cameras. The emphasis on camera features is consistent with other Android-based smartphone vendors that have been also adding additional cameras and claiming superiority to Apple devices in the picture quality department.

### With New iPhone Delayed Until October, Apple Launches New Watch and iPad at Annual Event



Abhinav Davuluri, CFA, Sector Strategist, 15 Sep 2020

On Sept. 15, Apple held its annual product showcase where it announced the launch of a new Apple Watch and iPad. The iPhone was notably absent from the event, as COVID-19-related delays have pushed back the launch of Apple's crown jewel to October. On the services front, the firm detailed its Apple One offering that bundles iCloud, Apple Music, TV+, Arcade, News+, and Fitness+ for \$29.95 per month (and a skinnier version without Fitness and News at \$14.95). We expect the firm to continue pushing the "as-a-service" model for both its products and software to solidify its recurring revenue streams. Our fair value estimate remains \$71 per share for the firm. While narrow-moat Apple remains well positioned in the near term given the upcoming 5G iPhone and stronger outlook for Mac and iPad segments due to the ongoing work- and learning-from-home dynamics, we recommend prospective investors wait for a wider margin of safety before investing in Apple.

The Apple Watch Series 6 was the first product discussed, with the most noteworthy feature being its ability to measure blood oxygen levels using both red and infrared light. The new watch includes a new S6 processor with up to 20% faster performance relative to the prior generation. The price point is the same as the last variant: starting at \$399 with the cellular model at \$499. Similar to the cheaper iPhone SE, Apple also announced an Apple Watch SE starting at \$279. We expect these new products to help Apple sustain its recent stretch of double-digit wearables growth.

On the iPad front, the firm updated its entry-level variant starting at \$329 as well as the iPad Air with its latest A14 Bionic processor (made on TSMC's 5-nanometer process) and starting at \$599. In addition to the normal performance hike (40% from prior generation), Apple is also embracing USB-C for its charge

# Apple Inc AAPL ★★★ 11 Jun 2021 21:18, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment <sup>1</sup>
127.35 USD 11 Jun 2021	115.00 USD 29 Apr 2021 02:24, UTC	1.11	2.13 USD Tril 11 Jun 2021	 Narrow	Stable	High	Standard	 2 Jun 2021 05:00, UTC

port (similar to the iPad Pro).

## 4-for-1 Stock Split Doesn't Alter Our View That Shares of Apple Look Expensive; New \$71 FVE

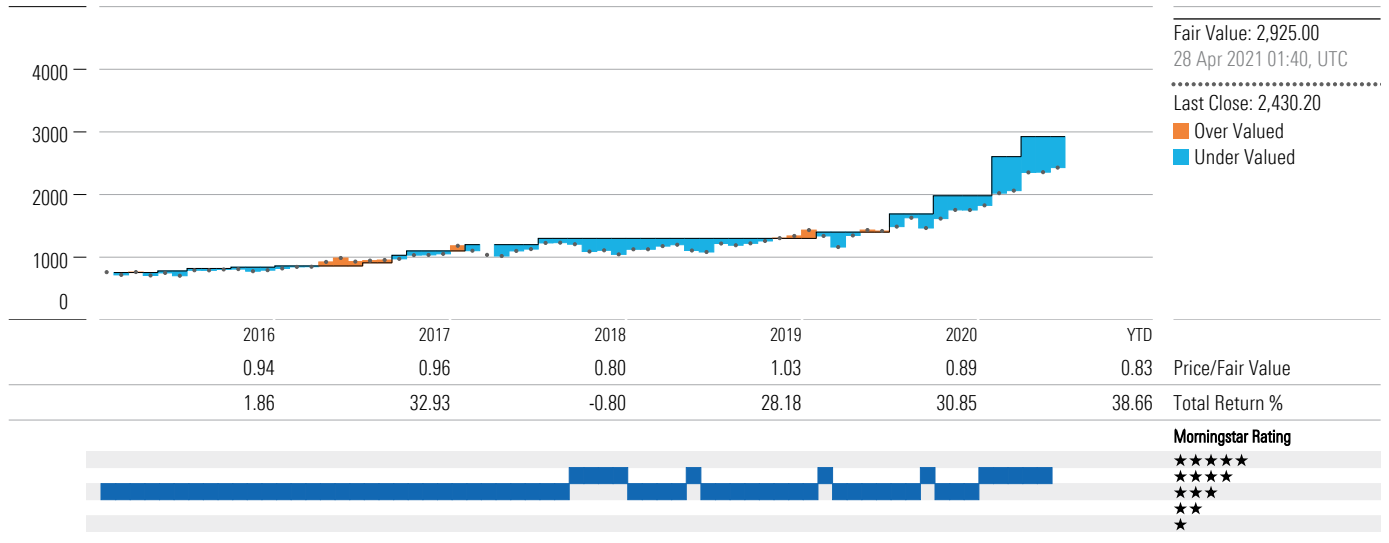
Abhinav Davuluri, CFA, Sector Strategist, 31 Aug 2020

With the start of trading on Aug. 31, Apple will have initiated a 4-for-1 stock split that does not change our fundamental valuation of the company. The split had been announced during its most recent earnings call in late July. Based on our pre-split fair value estimate of \$285 per share, our split adjusted fair value estimate starting Aug. 31 is now \$71 per share. While the split will make shares seem more affordable for small investors, we note the market capitalization and our overall valuation of the firm remains unchanged. While narrow-moat Apple remains well positioned in the near term given the upcoming 5G iPhone and stronger outlook for Mac and iPad segments due to the ongoing work- and learning-from-home dynamics, we recommend prospective investors wait for a wider margin of safety given the precarious state of the global economy, particularly as shares have appreciated more than 125% from mid-March lows. ■■

# Apple Inc AAPL ★★★ 11 Jun 2021 21:18, UTC

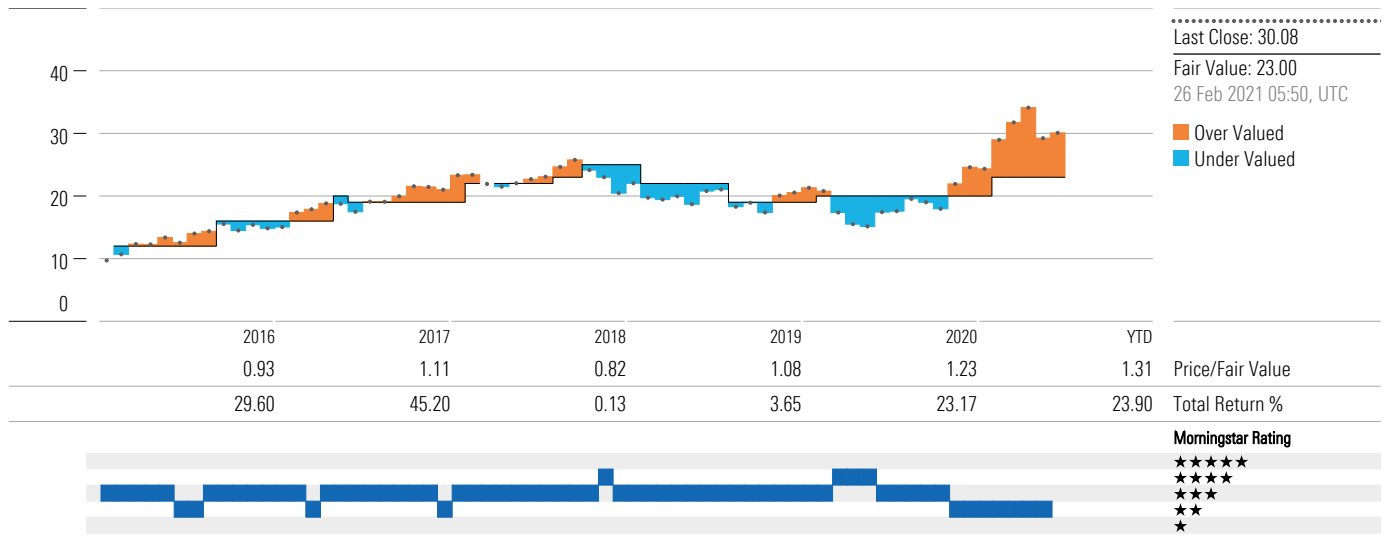
## Competitors Price vs. Fair Value

### Alphabet Inc A GOOGL



Total Return % as of 11 Jun 2021. Last Close as of 11 Jun 2021. Fair Value as of 28 Apr 2021 01:40, UTC.

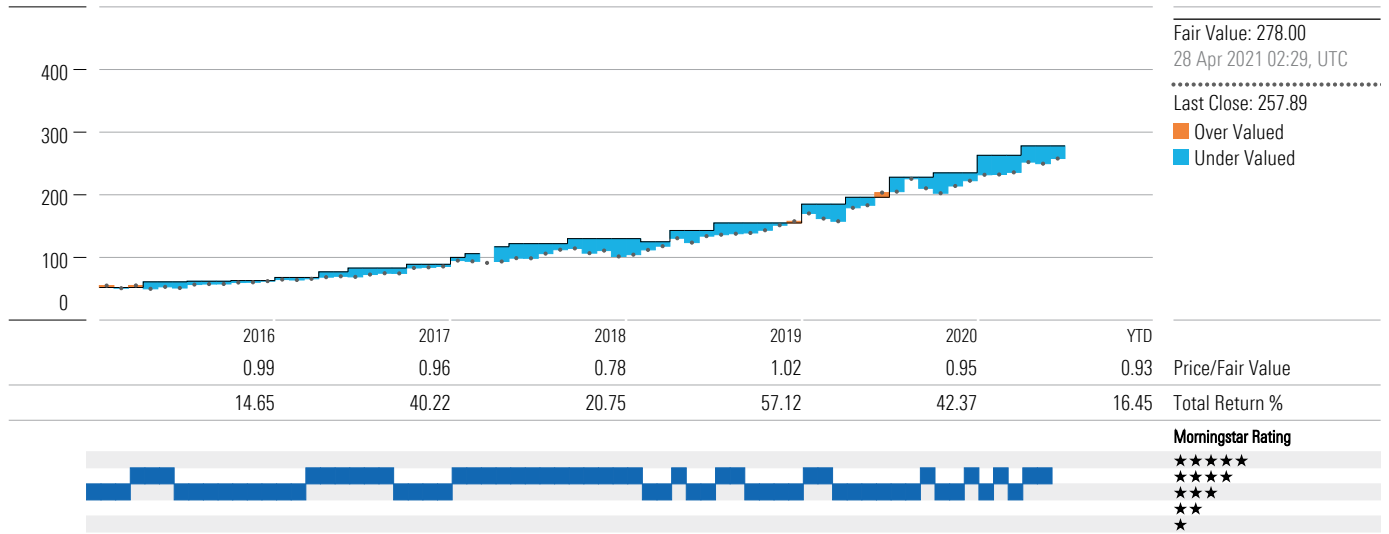
### HP Inc HPQ



Total Return % as of 11 Jun 2021. Last Close as of 11 Jun 2021. Fair Value as of 26 Feb 2021 05:50, UTC.

# Apple Inc AAPL ★★★ 11 Jun 2021 21:18, UTC

## Microsoft Corp MSFT



Total Return % as of 11 Jun 2021. Last Close as of 11 Jun 2021. Fair Value as of 28 Apr 2021 02:29, UTC.

# Apple Inc AAPL ★★★ 11 Jun 2021 21:18, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Moat Trend™	Uncertainty	Capital Allocation	ESG Risk Rating Assessment <sup>1</sup>
127.35 USD	115.00 USD	1.11	2.13 USD Tril 11 Jun 2021	Narrow	Stable	High	Standard	2 Jun 2021 05:00, UTC
11 Jun 2021	29 Apr 2021 02:24, UTC							

## Morningstar Historical Summary

### Financials as of 31 Mar 2021

Fiscal Year, ends 30 Sep	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	YTD	TTM
Revenue (USD Bil)	108	157	171	183	234	216	229	266	260	275	201	325
Revenue Growth %	66.0	44.6	9.2	7.0	27.9	-7.7	6.3	15.9	-2.0	5.5	33.9	21.4
EBITDA (USD Bil)	36	59	57	62	85	73	77	87	82	81	68	103
EBITDA Margin %	33.3	37.7	33.4	33.8	36.2	34.0	33.4	32.8	31.5	29.5	34.0	31.7
Operating Income (USD Bil)	34	55	49	53	71	60	61	71	64	66	61	89
Operating Margin %	31.2	35.3	28.7	28.7	30.5	27.8	26.8	26.7	24.6	24.2	30.4	27.3
Net Income (USD Bil)	26	42	37	40	53	46	48	60	55	57	52	76
Net Margin %	24.0	26.7	21.7	21.6	22.9	21.2	21.1	22.4	21.2	20.9	26.1	23.5
Diluted Shares Outstanding (Bil)	26	26	26	24	23	22	21	20	19	18	17	17
Diluted Earnings Per Share (USD)	0.99	1.58	1.42	1.61	2.31	2.08	2.30	2.98	2.97	3.28	3.08	4.47
Dividends Per Share (USD)	0.00	0.09	0.41	0.45	0.50	0.55	0.60	0.68	0.75	0.80	0.41	0.82

### Valuation as of 28 May 2021

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Recent Qtr	TTM
Price/Sales	3.5	3.1	3.1	3.7	2.6	3.0	3.9	3.0	5.2	8.5	7.2	6.6
Price/Earnings	14.6	12.1	14.1	17.1	11.4	13.9	18.4	13.2	24.7	40.5	32.9	27.9
Price/Cash Flow	10.1	8.9	9.7	11.3	7.5	9.7	14.0	10.2	19.7	28.8	23.8	21.5
Dividend Yield %	—	1.0	2.1	1.67	1.93	1.93	1.45	1.79	1.04	0.61	0.67	0.67
Price/Book	4.9	3.9	4.1	5.8	4.9	4.7	6.4	7.0	14.2	34.1	30.8	30.0
EV/EBITDA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

### Operating Performance / Profitability as of 31 Mar 2021

Fiscal Year, ends 30 Sep	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	YTD	TTM
ROA %	27.1	28.5	19.3	18.0	20.5	14.9	13.9	16.1	15.7	17.3	15.9	23.2
ROE %	41.7	42.8	30.6	33.6	46.3	36.9	36.9	49.4	55.9	73.7	77.9	103.4
ROIC %	41.0	42.0	26.1	26.2	31.3	22.0	19.9	24.4	25.8	30.1	28.3	40.1
Asset Turnover	1.1	1.1	0.9	0.8	0.9	0.7	0.7	0.7	0.7	0.8	0.6	1.0

### Financial Leverage

Fiscal Year, ends 30 Sep	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Recent Qtr	TTM
Debt/Capital %	—	—	12.1	20.6	30.9	37.0	42.0	46.7	50.4	60.2	61.1	—
Equity/Assets %	65.8	67.1	59.7	48.1	41.1	39.9	35.7	29.3	26.7	20.2	20.5	—
Total Debt/EBITDA	—	—	0.3	0.6	0.8	1.2	1.5	1.3	1.3	1.4	1.8	—
EBITDA/Interest Expense	—	—	419.4	161.0	115.3	50.4	33.0	26.9	22.9	28.2	52.3	39.1

## Morningstar Analyst Historical/Forecast Summary as of 28 Apr 2021

Financials	Estimates					Forward Valuation	Estimates					
	2019	2020	2021	2022	2023		2019	2020	2021	2022	2023	
Fiscal Year, ends 26 Sep												
Revenue (USD Bil)	260	275	359	373	385	Price/Sales	3.8	7.2	5.9	5.7	5.5	
Revenue Growth %	-2.0	5.5	30.7	3.8	3.3	Price/Earnings	18.9	35.3	24.8	25.2	24.8	
EBITDA (USD Bil)	76	77	117	115	114	Price/Cash Flow	16.9	26.8	20.3	21.7	22.2	
EBITDA Margin %	29.4	28.2	32.6	30.9	29.6	Dividend Yield %	1.34	0.69	0.67	0.71	0.78	
Operating Income (USD Bil)	64	66	104	102	102	Price/Book	—	—	—	—	—	
Operating Margin %	24.6	24.2	29.0	27.4	26.6	EV/EBITDA	13.2	25.7	18.6	18.9	19.1	
Net Income (USD Bil)	55	57	89	86	87							
Net Margin %	21.2	20.9	24.7	23.2	22.5							
Diluted Shares Outstanding (Bil)	19	18	17	17	17							
Diluted Earnings Per Share(USD)	2.97	3.28	5.13	5.06	5.13							
Dividends Per Share(USD)	0.75	0.80	0.85	0.91	0.99							



# 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 shorter-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 es-

timate of a firm’s cost of capital, or weighted average cost of capital (or WACC). Without a moat, profits are more susceptible to competition. We have identified five sources of economic moats: intangible assets, switching costs, network effect, cost advantage, and efficient scale.

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

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

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

### 2. Estimated Fair Value

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

Our model is divided into three distinct stages:

#### Stage I: Explicit Forecast

In this stage, which can last five to 10 years, analysts make full financial statement forecasts, including items such as revenue, profit margins, tax rates, changes in 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

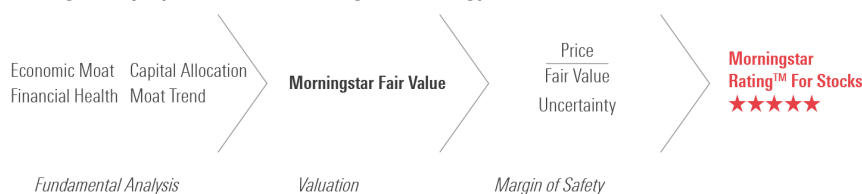
Once a company’s marginal ROIC hits its cost of capital, we calculate a continuing value, using a standard perpetuity formula. At perpetuity, we assume that any growth or decline or investment in the business neither creates nor destroys value and that any new investment provides a return in line with 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 captures a range of likely potential intrinsic values for a company and uses it to assign the margin of safety required before investing, which in turn explicitly drives our stock star rating system. The Uncertainty Rating represents the analysts’ ability to

## Morningstar Equity Research Star Rating Methodology



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# Research Methodology for Valuing Companies

bound the estimated value of the shares in a company around the Fair Value Estimate, based on the characteristics of the business underlying the stock, including operating and financial leverage, sales sensitivity to the overall economy, product concentration, pricing power, exposure to material ESG risks, and other company-specific factors.

Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case, and a 25% probability that the company will perform worse than the bear case. The distance between the bull and bear cases is an important indicator of the uncertainty underlying the fair value estimate. In cases where there is less than a 25% probability of an event, but where the event could result in a material decline in value, analysts may adjust the uncertainty rating to reflect the increased risk. Analysts may also make a fair value adjustment to reflect the impact of this event.

Our recommended margin of safety widens as our uncertainty of the estimated value of the equity increases. The more uncertain we are about the estimated value of the equity, 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 for our qualitative analysis 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

## 4. Market Price

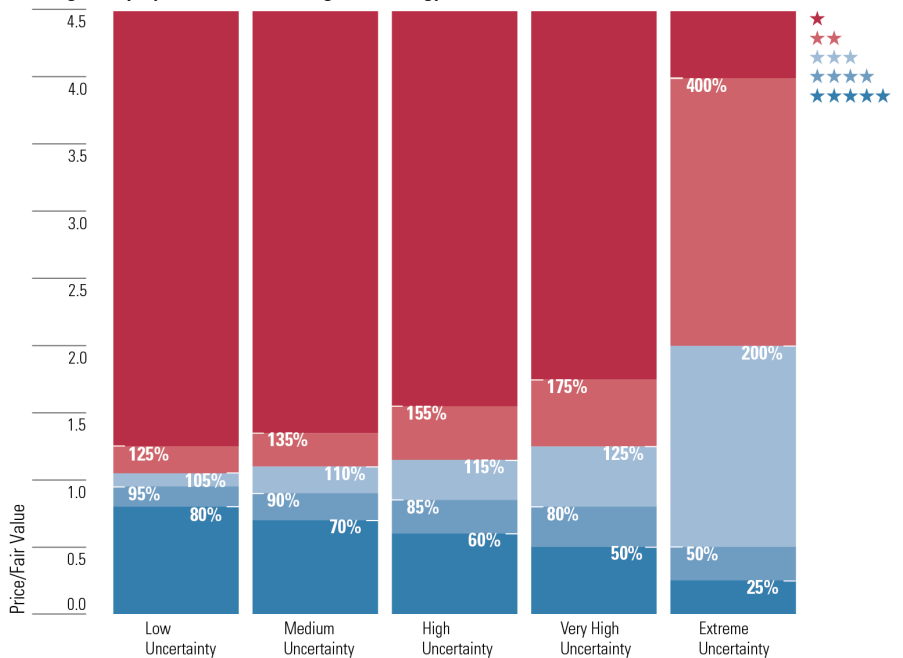
The market prices used in this analysis and noted in the report come from exchange on which the stock is listed which we believe is a reliable source.

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

**Morningstar Equity Research Star Rating Methodology**



tabs on the companies they follow, and, based on thorough and ongoing analysis, raise or lower their fair value estimates as warranted.

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

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

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

The Morningstar Star Ratings for stocks are defined below:

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

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

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

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

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

## Other Definitions

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

**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: "Exem-

## Research Methodology for Valuing Companies

play", "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.

### Risk Warning

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

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