Apple Inc AAPL (NAS) | ★★★★

Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Industry Group
100.75 USD	133.00 USD	79.80 USD	206.15 USD	High	Narrow	Positive	Standard	Computer Hardware

Apple is driving software and services innovation to capture premium pricing on hardware.

Brian Colello, CPA
Sector Director
brian.colello@morningstar.com
+1 (312) 384-3742

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

Research as of 27 Jan 2016
Estimates as of 26 Jan 2016
Pricing data through 02 Mar 2016
Rating updated as of 02 Mar 2016

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

Contents

Investment Thesis 26 Jan 2016

We believe Apple's strength lies in its experience and expertise in integrating hardware, software, services, and third-party applications into differentiated devices that allow Apple to capture a premium on hardware sales. Although Apple has a sterling brand, strong product pipeline, and ample opportunity to gain share in many end markets, short product life cycles and intense competition will prevent the firm from resting on its laurels, or carving out a wide economic moat, in our opinion.

We believe Apple has developed a narrow economic moat, thanks to switching costs related to many attributes around the iOS platform that may make current iOS users more reluctant to stray outside the Apple ecosystem for future purchases. In our view, much of Apple's exponential growth in recent years has stemmed not from the firm's economic moat, but from the achievement of building the first truly revolutionary smartphone, the iPhone, that integrated hardware and software, as well as a robust apps store and ecosystem that attracted new users to platform. Apple's first-mover advantage may be diminishing, and "easy growth" coming from early smartphone adopters may be winding down as the smartphone market moves up the adoption curve and competition ramps up. Yet we still foresee long-term iPhone growth, coming from both attracting new customers to iOS (mostly in emerging markets, although we still see U.S. growth as well) and retaining Apple's existing premium iPhone customers, where we think the company's moat will play an increasingly important role.

Ultimately, we think future smartphone competition will stem from software and services, as we're seeing less and less meaningful hardware differentiation (screen size and quality, etc.). We view Apple as well positioned to develop and expand enough services to enhance the user experience, in order to build switching costs that will help the firm retain customers and generate significant repeat purchases will be critical for future iPhone growth in the years ahead.

Vital Statistics

Market Cap (USD Mil)	558,617
52-Week High (USD)	134.54
52-Week Low (USD)	92.00
52-Week Total Return %	-20.3
YTD Total Return %	-3.8
Last Fiscal Year End	30 Sep 2015
5-Yr Forward Revenue CAGR %	1.5
5-Yr Forward EPS CAGR %	-1.3
Price/Fair Value	0.76

Valuation Summary and Forecasts

Fiscal Year:	2014	2015	*2016(E)*	*2017(E)*
Price/Earnings	15.6	12.0	*11.7*	*11.2*
EV/EBITDA	9.7	7.7	*7.8*	*7.4*
EV/EBIT	11.1	8.9	*9.2*	*8.8*
Free Cash Flow Yield %	8.5	11.4	*9.3*	*9.7*
Dividend Yield %	1.9	1.9	*2.1*	*2.2*

Financial Summary and Forecasts (USD Mil)

Fiscal Year:	2014	2015	*2016(E)*	*2017(E)*
Revenue	182,795	233,715	*225,774*	*231,483*
Revenue YoY %	7.0	27.9	*-3.4*	*2.5*
EBIT	52,503	71,230	*63,437*	*66,255*
EBIT YoY %	7.2	35.7	*-10.9*	*4.4*
Net Income, Adjusted	39,510	53,394	*48,314*	*50,309*
Net Income YoY %	6.7	35.1	*-9.5*	*4.1*
Diluted EPS	6.45	9.22	*8.64*	*8.99*
Diluted EPS YoY %	13.6	42.8	*-6.3*	*4.1*
Free Cash Flow	42,790	65,144	*46,168*	*48,258*
Free Cash Flow YoY %	2.1	52.2	*-29.1*	*4.5*

Historical/forecast data sources are Morningstar Estimates and may reflect adjustments.
Analyst Note: EPS on a GAAP basis

Profile

Apple designs consumer electronic devices, including PCs (Mac), tablets (iPad), phones (iPhone), smartwatches (Watch) and portable music players (iPod). Apple's products run internally developed software, and we believe this integration of hardware and software often allows the firm to maintain premium pricing for its devices. Apple's products are distributed online as well as through company-owned stores and third-party retailers.

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Morningstar Analysis

Apple is Bruised but Not Rotten as Currency and Macro Headwinds Weigh on iPhone Demand 26 Jan 2016

Apple's fiscal first quarter results and second-quarter outlook painted a gloomy picture in terms of currency headwinds and sluggish macroeconomic conditions, but we still don't see any long-term structural problems, such as market share loss or a lack of innovation, around the firm's core business. Our long-term thesis and narrow economic moat rating for Apple remain intact. We will likely cut our fair value estimate for Apple by about 5%, as near-term iPhone unit sales and Apple Watch revenue are poised to come in below our prior projections. Yet we still view Apple as one of our better long-term investment ideas within Tech, as the market still appears to be pricing Apple as if iPhone sales are is in secular decline. We think this bearish scenario is unlikely as we don't see a premium "iPhone killer" on the market, all while customer satisfaction remains high and Apple continues to attract switchers away from Android. iPhone replacement cycles are likely lengthening due to macroeconomic issues, but we think that sets Apple up nicely for a bounce back in iPhone sales at some point if the macro picture improves or, more important, the firm delivers on innovative new features within future iPhones.

Apple's total revenue in the December quarter was $75.9 billion, up 2% year over year but at the low end of the firm's previously forecast range, a rare miss by the firm. Revenue would have been up to $80.8 billion, up 8% year over year, on a constant currency basis. Apple sold 74.8 million iPhones in the December quarter, up by only 311,000 units or 0.4% year over year, with sales actually down on a sell-through basis to end customers. On the bright side, iPhone average selling prices were still spectacular at $691 per phone, up 3% sequentially, despite $49 of negative currency effects. We estimate that Apple sold about 5.5 million Watches in the quarter, which, if accurate, was softer than the sort of exponential growth we were previously expecting.

For the March quarter, Apple expects revenue in the range of $50 billion-$53 billion, which would represent a 9%-14% decline from the year-ago quarter. Whereas China was still a hot market for Apple last summer, despite hefty stock market volatility in the region, management saw some softening in the Chinese economy earlier in January, particularly in Hong Kong, which bodes poorly for total iPhone sales for the rest of fiscal 2016. Our prior near-term thesis suggested that Apple would achieve modest revenue growth in fiscal 2016, but flat-to-slightly down revenue appears more likely at this point unless foreign exchange rates significantly reverse course. Nonetheless, 400 basis points of the 9%-14% decline will come from currency, and we still tend to think of the remaining 5%-10% decline in revenue as cyclical, rather than secular.

We still attribute the weak results to stiff currency headwinds and sluggish macroeconomic conditions, which have likely lengthened replacement cycles for the iPhone as customers might be holding on to models for a little while longer. Apple cited that 60% of customers are using models older than the iPhone 6 series, which launched 16 months ago, which could be a data point that bodes well for pent up demand for future iPhones, possibly even an iPhone 7 next year if it has especially innovative features. By region, unit sales in China in the December quarter (up 18% year over year) were still solid, but demand was probably lower than last year in developed markets like the U.S. IPhone unit sales in India grew 76%, and although the region probably represents a nearly immaterial portion of revenue today, we think Apple is laying the ground work for future premium smartphone growth.

IPad and Mac sales were both relatively in line with our expectations. IPad ASPs of $439, up less than 2% sequentially, suggests that sales of the recently launched, higher-priced iPad Pro didn't set the world on fire, but given its focus on the enterprise, the holiday season likely won't be peak iPad Pro gift-giving season either. Other product revenue was $4.35 billion, up 43% sequentially—while

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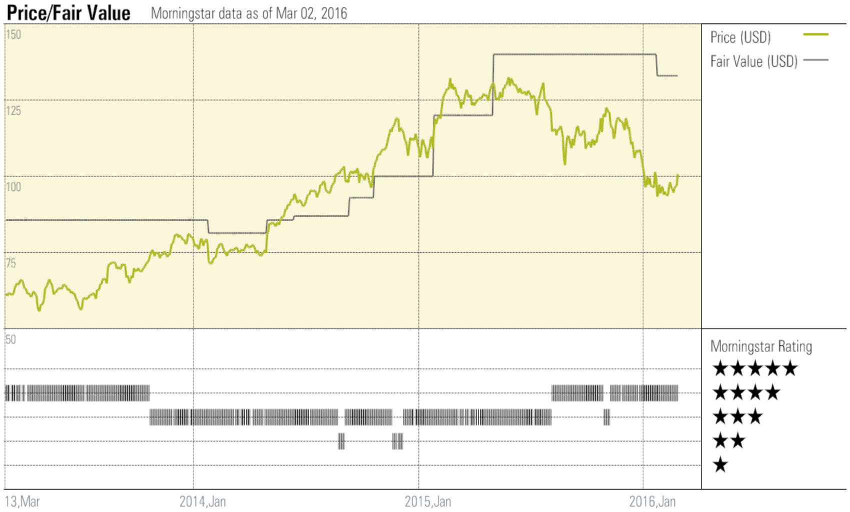
Price/Fair Value Morningstar data as of Mar 02, 2016



impressive, the sequential growth was lower than that of both the iPhone and iPad. We view the figure as a sign that Apple Watch and Apple TV demand is growing, but haven't hit an inflection point toward mammoth growth either. Demand for more discretionary Apple items, like iPads and Watches, may also be muted in the near-term if economic headwinds persist.

Finally, Apple shed some insight into Services revenue. Officially, revenue grew 26% year-over-year, thanks in part to $548 million of revenue from a patent litigation settlement. Excluding the settlement, Apple's revenue grew 15%, but the firm highlighted that customer billings (including payments made to developers and content creators) was a bit higher, with 24% year-over-year growth. Apple also announced that one billion devices are currently active, a higher figure than our prior estimates and one that suggests hefty usage of older, traded-in iPhones. Yet we also wonder about the incremental value captured by Apple from users of older, used phones and whether this customer segment can move the needle for Apple's services revenue in any way.

Apple seemingly released these service figures as an attempt to appease investors that are looking for Apple to transform into a pure-play software company, which would perhaps be rewarded with a higher multiple. We're skeptical of such a transformation. Apple's software and services clearly capture value, but in our view, such value isn't solely based on services revenue and earnings, but more important, Apple's ability to maintain premium pricing on the iPhone within a smartphone market where virtually no other OEM can earn excess returns on capital. Such services also create customer switching costs (the source of our narrow economic moat rating) which we think will help Apple sell future iPhones and other devices to loyal customers over time. While we still don't project double-digit revenue growth from the iPhone in the long-term, we think iPhone sales will be more resilient over time, thanks to such software and services, and that we haven't reached peak iPhone just yet. All that said, when looking at services revenue, we're pleased to see healthy growth but we also view it as a bit of a lagging indicator, with revenue rising thanks to massive iOS and Mac device sales made in current and prior years as customers remain engaged with these devices.

Valuation, Growth and Profitability 26 Jan 2016

We are lowering our fair value estimate for Apple to $133 per share from $140, based on lower near-term revenue assumptions. Our fair value estimate implies fiscal 2016 (ending September 2016) price/earnings of 15 times (and only 12 times after excluding Apple's net cash balance on hand). Apple's tremendous iPhone 6 and 6 Plus enabled the firm to grow fiscal 2015 revenue by 28% or $51 billion dollars, more than total revenue earned by almost 90% of the Fortune 500. Due to this amazingly high revenue bar, as well as currency headwinds and macroeconomic softness, , we project that Apple's revenue in fiscal 2016 will fall by 3%, down from our prior projection of 5% growth.

Longer term, we foresee Apple returning to growth and achieving modest iPhone revenue growth in the

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low-single-digit range, with unit sales growing at a mid-single-digit pace. We envision Apple's iPhone unit sales growing at a similar pace to the high-end of a maturing smartphone market. While we're not overly bullish on long-term iPhone growth, we think that Apple's moat will help the firm retain most of its current customers, thus making iPhone revenue more resilient than the ups and downs witnessed by other hardware-only smartphone makers. Longer-term, we model average revenue growth for Apple as a whole in the 3% range. We expect strong growth from Other Products (including the Watch and TV) and Services, but slower growth from larger businesses like iPhone, iPad, and Mac will serve to offset this healthy growth.

Based on Apple's premium pricing strategy and the iPhone and Watch increasing as a mix of Apple's total revenue, we model gross margins in the 40% range in both the near term and long term. We expect Apple to aggressively spend on research and development in order to fund new product categories (perhaps an Apple car), so that operating margins hover in the mid-to-high 20% range over our five year forecast period. Our fair value uncertainty rating for Apple remains high, given short product life cycles and intense competition within Apple's key end markets.

Scenario Analysis

Our base-case scenario for Apple projects average revenue growth of 2% per year from fiscal 2016 to fiscal 2020, as well as average operating margins of 27% over our five-year forecast period.

In our bullish scenario, we assume that Apple continues to build on its tremendous success with the iPhone, not only benefiting from tailwinds surrounding smartphone growth, but maintaining premium pricing for its devices. In this scenario, we model average iPhone revenue growth of 5% per year. We are also more bullish on iPad and Mac revenue and project average revenue growth of 5% and 6%, respectively. We also model a larger incremental spike in revenue from upcoming Watch sales, make modestly higher gross margin assumptions for the business as a whole, as well as lower operating expense growth. In this scenario, we model average revenue growth for all of Apple at 7% per year, average operating margins of 32% per year, and our fair value estimate would be $192 per share as the company would exceed a trillion dollar market cap.

In our bearish scenario, we assume Apple's iPhone revenue essentially peaks in fiscal 2015, falls 9% per year on average over the next three years (due to increased competition, longer upgrade cycles, or both) and is flat thereafter. We also model average iPad revenue declines of 10% per year as cannibalization from iPhones rises at a faster pace. We model modest Mac revenue declines of 3% per year and only 4% growth in Services and Other Products, as Apple Watch adoption is relatively limited. In this bearish scenario, we also project higher operating expenses. In turn, we model average revenue declines for Apple of 5% per year, average operating margins of 24% per year, and our fair value estimate would be $79 per share.

Economic Moat

We believe Apple has a narrow economic moat based on modest, but not insurmountable, customer switching costs. We don't believe these switching costs are critical factors in attracting new iOS customers, especially in emerging markets, but that such switching costs will allow Apple to build a loyal iOS user base that may be less likely to flee to other operating systems for future device purchases in the long term. As the smartphone market matures and a greater proportion of purchases come from previous smartphone owners, we foresee these switching costs as extremely important differentiators in favor of Apple. That said, given the short product life cycles of two to four years for most of its devices, we still think competing products will have

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plenty of chances to lure iOS customers away from Apple's platform and overcome these switching costs, especially if Apple were to stumble in any given product refresh cycle. This prevents us from assigning the company a wide economic moat.

Inherently, we believe there are minimal switching costs associated with smartphones, as all of these devices can perform most necessary functions--place calls, send texts, browse the web, and so on. However, we believe Apple has done a much better job at trying to develop switching costs than its handset predecessors (such as Motorola and BlackBerry) that failed to lock in customers when they were on top. In our opinion, Apple's switching costs stem from its iOS operating system and appear to be increasing, thanks to its iCloud offering. Apple iOS users who purchase movies, TV shows, and applications from the iTunes store are unable to port these media to Android or other portable devices (music is transferrable). iCloud adds another layer of switching costs by synchronizing media, photos, notes, and other items across all Apple devices. New services like Apple CarPlay and Apple Pay also aid the firm’s efforts not only to improve the entire iOS ecosystem and the overall user experience, but also to build switching costs that give users more and more reasons not to depart the platform. Furthermore, in hardware, we believe an owner of multiple Apple devices (say, an iPhone and iPad) is less likely to switch from an iPhone to an Android phone if it means that he or she will be unable to sync or access a portion of their content. Additional Apple devices, such as the Mac and potentially Apple Watch or other gadgets tied to iOS via HomeKit, could raise these switching costs even further. By comparison, no other former handset leader (Nokia, Motorola, BlackBerry) offered secondary devices that partnered with their phones, giving Apple a unique edge. Other hardware vendors, such as Samsung, are emulating this model by bundling devices together. However, Samsung doesn’t control the operating system (Android) used to run these products, and the company has had several false starts in trying to build its own operating system, Tizen.

Looking at other sources of economic moat, Apple holds intangible assets associated with patents for its hardware and software designs. However, both the value of such assets and the sustainable competitive advantage stemming from these assets remain cloudy. Regarding Apple’s sterling brand equity, we view brands within technology differently than, say, consumer luxury goods. We doubt that Apple can charge double the price for a product that has the exact same hardware and software specifications as an unbranded product. However, we think that Apple benefits from intangible assets, or a brand, in terms of the (mostly) positive user experiences that customers capture from the firm’s integrated hardware, software and services. This brand equity may encourage customers to go with Apple for their first wearable device instead of a host of other offerings. Similarly, Apple might be the world's most trusted consumer technology firm in terms of delivering flawlessly working products in existing, and even new, product categories. However, we still think tech brands are relatively fleeting, as technological inferiority can supersede years of brand equity at any given time. As an example, Nokia was long considered a top-10 brand, but brand recognition failed to make up for its lack of technological innovation in the smartphone space.

Apple is trying to improve the network effects of its devices with functions like iMessage and FaceTime. However, BlackBerry's demise proves that even highly popular smartphone-centric networks like BlackBerry Messenger can be broken if other smartphone features (or lack thereof) drive customers to flee. Network effects may be forming around Apple’s apps developers, as a more robust apps store is likely helping Apple attract new customers. However, these same developers likely build for Android as well, so we think that developers will flock to the ecosystem that

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offers the most attractive return on investment. Along these lines, Apple Pay may ultimately develop a network effect between merchants, credit card networks, and users, but we would also anticipate that some other service (PayPal, Google) could come close to replicating this service and provide customers with a non-iOS alternative. Finally, Apple may have some cost advantages associated with its supply chain, such as squeezing suppliers or making massive purchases of flash memory and other key components. However, we believe these advantages are predicated on the enormous forecast volume of Apple's products, and we suspect these advantages would evaporate if Apple's device production were to shrink.

Moat Trend

We believe Apple has a positive moat trend. The company's iCloud offering should raise switching costs associated with iOS devices as more and more customers buy and own multiple iOS devices (iPhones plus iPads, for example), use native Apple iOS services (CarPlay, Apple Pay, iMessage), and acquire Apple-only media and applications on their iOS devices and choose to upload this content, along with photos and other items, to iCloud. We believe these switching costs are increasing based on Apple's strong sales of second and third hardware devices, whether it be the iPad (which is slumping today but still commands a market share lead), Mac or Apple Watch. We see that more and more iPhone users now own a second device that runs the iOS system and syncs between the two devices. Apple disclosed that it has 1 billion active devices in use today, and we suspect that many iPhone users also own other Apple products. In our view, ownership of multiple devices not only decreases the likelihood that customers would look for alternative devices that would be incompatible with these products, but perhaps improves the probability that customers buy even more Apple devices including Macs, Apple Watches, and/or Apple TVs.

To a lesser extent, we also believe Apple's switching costs are increasing in regard to iOS device sales into the enterprise. In September 2015, Apple disclosed that enterprise revenue reached $25 billion in fiscal 2015, rising 40% from the prior year and making up 11% of total revenue. We believe that not only are a growing number of corporations purchasing Macs, iPads and iPhones today, but that these companies are writing native applications for its employees that work solely on iOS products, rather than browser-based apps that would run on multiple tablet platforms. Apple's recently announced partnership with IBM may accelerate Apple's penetration into the enterprise, and lead to a more robust ecosystem of enterprise-specific apps. We think it would be increasingly unlikely that such businesses would migrate to Android- or Windows-based tablets based purely on cost savings, and tend to think of business users are "stickier" to the ecosystem than personal users. Although enterprise revenue doesn't move the needle on our valuation today, we believe Apple's growing presence in the enterprise is leading to stronger switching costs.

Along the same lines, switching costs may also arise from the education market, to the extent that schools and universities also build iOS apps that work with iPads used by students. Apple disclosed that, as of June 2014, the firm has sold 13 million iPads to education customers globally. Further adoption of iOS products within schools may allow Apple to have a steadier stream of customers and future iOS device buyers in the long term. That said, we're more optimistic about Apple's progress in the enterprise than in education, both in terms of market size as well as competition, as Google's Chromebooks are aggressively entering the educational market, as well.

In our view, much of Apple's outsized growth in recent years has stemmed not from the firm's moat, but rather from a first-mover advantage as a result of building the first truly revolutionary smartphone with a robust apps store and ecosystem that attracted new users to platform--all while facing little early direct competition. Apple's ability to attract new iPhone users to the platform may wane in the years ahead, partially due to greater competition from several Android-based competitors, but mostly because Apple's premium pricing strategy may prevent new customers in emerging markets from switching to iPhones. However, we don't necessarily see either of these factors as a sign that the company's moat is eroding rather than strengthening. Neither of these factors indicate weakening switching costs, in our view, and we have not yet seen much evidence that iOS users are abandoning the platform. For example, data from Comscore indicates that Apple is gaining, rather than losing, smartphone subscribers in the U.S.

Nonetheless, we continue to believe that the short product life cycles associated with Apple's products will prevent the firm from gaining a wide economic moat. iOS and iCloud provide some switching costs, but we don't think these costs are overwhelming. If Apple were to ever launch a buggy, frustrating flop of a product or operating system, or if a device was to lose a significant aspect of functionality (say, if Google Search were no longer offered), customers might not stick around and pay premiums for Apple products that offer an inferior user experience. Another risk to Apple's moat trend, in our view, is that a variety of platform-agnostic web-based services, such as Dropbox, Evernote, Spotify, and Netflix may make media ownership, iCloud and the operating system, less important differentiators for Apple in the future.

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Bulls Say/Bears Say

Bulls Say

- Between first-time smartphone buyers, people switching away from Android, and repeat sales to current customers, Apple's iPhone business still has potential for further revenue growth.
- 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.
- Innovation at Apple lives on with introductions of Apple Pay, Apple Watch, and Apple TV, each of which could drive incremental revenue but, more important, help to retain iPhone users over time.

Bears Say

- Apple's recent 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 emerging market customers.
- Apple has a host of large tech rivals, many of which are willing to sell devices at bare-bones prices in order to earn income elsewhere.
- Apple's less-than-stellar launches of Apple Maps and iOS 8.0.1 were near-misses that frustrated many users for short periods of time, but any other buggy software launches could diminish Apple's reputation for building products that "just work."

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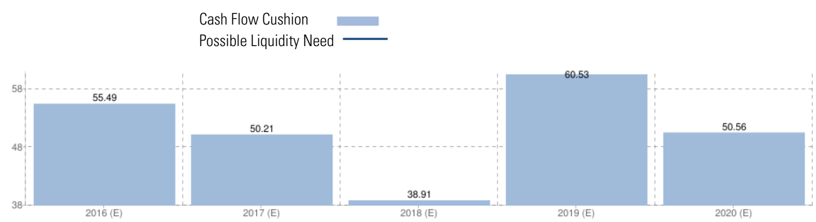
Five Year Adjusted Cash Flow Forecast (USD Mil)

	2016(E)	2017(E)	2018(E)	2019(E)	2020(E)
Cash and Equivalents (beginning of period)	205,666	230,061	263,569	294,462	326,588
Adjusted Available Cash Flow	40,294	41,978	41,927	40,981	39,503
Total Cash Available before Debt Service	245,960	272,039	305,496	335,442	366,091
Principal Payments	-2,500	-3,500	-6,000	-3,775	-5,581
Interest Payments	-1,161	-1,144	-1,106	-1,051	-986
Other Cash Obligations and Commitments	-772	-774	-744	-715	-674
Total Cash Obligations and Commitments	-4,433	-5,418	-7,850	-5,541	-7,241

Cumulative Annual Cash Flow Cushion



Adjusted Cash Flow Summary

	USD Millions	% of Commitments
Beginning Cash Balance	205,666	674.7
Sum of 5-Year Adjusted Free Cash Flow	204,683	671.5
Sum of Cash and 5-Year Cash Generation	410,349	1,346.2
Revolver Availability	—	—
Asset Adjusted Borrowings (Repayment)	—	—
Sum of Cash, 5-Year Cash Generation, Revolver and Adjustments	410,349	1,346.2
Sum of 5-Year Cash Commitments	-30,483	—

Financial Health

Apple maintains a conservative capital structure with large cash reserves. As of September 2015, the firm held a whopping $206 billion in gross cash. However, a majority of cash and investments is held overseas, and Apple cannot efficiently repatriate it to the United States in order to use it for dividends, stock repurchases, or domestic acquisitions without paying additional taxes. In order to utilize this massive overseas cash balance during the past two years, Apple has taken on $47.5 billion of incremental debt at extremely low rates, including $30 billion in 2015 alone. We continue to believe that Apple's appetite for leverage is largely driven by highly favorable bond market pricing relative to the market valuation of Apple's earnings, as well as current U.S. corporate tax policies that make it difficult to tap overseas cash.

During the past 12 months, Apple produced $69.6 billion of free cash flow, up 12% from a year ago. Over the same period, it paid $11.4 billion in dividends and completed net share repurchases of $38.4 billion. This leaves about $150 billion remaining under its commitment to return $200 billion to shareholders through March 2017. U.S.-based cash as of September 2015 was $19 billion, up slightly from a year ago. As long as interest rates remain low, we expect Apple to take on additional debt in order to fund future buybacks, rather than repatriate overseas cash and pay additional taxes. We continue to expect acquisitions to remain a lower priority for cash flow, with transactions focused on intriguing startups, from which Apple is able to capture unique engineering and development talent to help improve the firm's product offerings while fitting in seamlessly with Apple's corporate culture. We do not believe that Apple is likely to pursue a high-profile, high-priced acquisition that risks destroying value for shareholders.

Enterprise Risk

Apple faces several key risks as competitors attack the firm from all angles. Smartphone and tablet competition is rising, both from upstart Chinese OEMs on the low- and mid-range, and tech titans like Samsung, Lenovo and Huawei all have the size and scale to build large smartphone portfolios to suit customers at every price point. As a premium phone supplier, Apple also runs the risk that wireless carriers could reduce or eliminate the subsidies that have made iPhones more affordable to many customers. Finally, some competitors like Xiaomi and Amazon are more than willing to sell hardware at close to cost in order to drive other revenue streams. If any of these devices offer a similar user experience to iOS products, Apple may be unable to capture an adequate premium on future hardware sales. All the while, the low end of the smartphone market (where Apple does not participate) will likely be the faster growing portion of the smartphone market for years to come. Apple also must continually innovate on the hardware front. Any severe slip up could be damaging to Apple's brand and customer loyalty. Apple must also deliver immaculate software and services in order to generate premiums on hardware sales, but mistakes like the early launch of Apple Maps and a failed iOS 8.0.1 release show the difficulty in flawlessly staying on the cutting edge. Further, Apple still relies on a robust app-developer base and strong partnerships with third parties, yet these companies will likely focus on the operating system that provides the best return on investment and could turn their attention to Android if Apple's iOS user base were to slip. If Apple were to falter and its exceptional brand be diminished as customers departed iOS in droves, we're not even sure that Apple's mighty cash cushion could help the firm buy its way out of any problem.

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Management & Ownership

Management Activity

Name	Position	Shares Held	Report Date*	InsiderActivity
MR. ARTHUR D. LEVINSON, PHD	Director	1,133,283	01 Feb 2016	2,008
MR. TIMOTHY D. COOK	Director	1,039,598	09 Nov 2015	—
MR. ALBERT A. GORE,JR	Director	442,994	01 Feb 2016	—
CRAIG FEDERIGHI		439,728	01 Oct 2015	—
MR. JOHNY SROUJI		101,881	16 Dec 2015	—
MR. D. BRUCE SEWELL		47,593	01 Oct 2015	—
MR. ROBERT A. IGER	Director	44,120	01 Feb 2016	—
DANIEL J. RICCIO		40,755	02 Nov 2015	—
DR. RONALD D. SUGAR	Director	17,359	01 Feb 2016	—

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

Fund Ownership

Top Owners	% of Shares Held	% of Fund Assets	Change (k)	Portfolio Date
Vanguard Total Stock Mkt Idx	1.79	2.50	2,313	31 Jan 2016
Vanguard 500 Index Fund	1.25	3.17	985	31 Jan 2016
Vanguard Institutional Index Fund	1.09	3.17	218	31 Jan 2016
SPDR® S&P 500® ETF Trust	0.96	3.40	—	31 Dec 2015
SPDR® S&P 500 ETF	1.00	3.16	257	26 Feb 2016
Concentrated Holders				
Fidelity® Select Computers Portfolio	0.02	22.88	51	31 Jan 2016
Sidera North American Equity	—	21.42	86	31 Jan 2016
Upright Growth Fund	—	19.87	—	31 Dec 2015
Fidelity® Select Wireless Portfolio	0.01	19.10	6	31 Jan 2016
ProFunds VP Technology	—	19.05	-10	30 Sep 2015

Institutional Transactions

Top 5 Buyers	% of Shares Held	% of Fund Assets	Shares Bought/ Sold (k)	Portfolio Date
BlackRock Advisors LLC	5.69	—	315,426	31 Dec 2015
Janus Capital Management LLC	0.64	2.65	16,491	30 Sep 2015
Enhanced Investment Technologies Inc	0.42	3.29	12,008	30 Sep 2015
Lansdowne Partners Limited Partnership	0.17	6.74	9,204	31 Dec 2015
Magellan Asset Management Limited	0.13	4.17	7,078	31 Dec 2015
Top 5 Sellers				
Wellington Management Company LLP	0.69	1.16	-14,966	30 Sep 2015
Fidelity Management and Research Company	2.87	2.68	-12,846	30 Sep 2015
Deutsche Bank AG	0.14	1.67	-8,137	30 Sep 2015
Capital Research Global Investors	0.11	0.23	-7,999	30 Sep 2015
HSBC Holdings PLC	0.20	3.15	-7,445	30 Sep 2015

Management 27 Jan 2016

We view Apple as a good steward of shareholder capital. 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 to be Jobs' right-hand man and served in various operations roles with Apple before becoming COO in 2005. We believe Jobs' passing was a blow to the firm, as he was a one-of-a-kind leader and creative mind. Arthur Levinson, former chairman and CEO of Genentech, is chairman of Apple's board of directors.

We're comfortable with Apple's level of technological innovation over the past couple of years after Jobs' passing. Much of this innovation has come from new software and services within iOS like Apple Pay, rather than brand-new smash-hit products. That said, we still have high hopes that the Apple Watch will deliver incremental earnings growth to Apple, and the firm's ability to execute and deliver another premium product will likely be viewed by many as a sign that Tim Cook's Apple can, or cannot, deliver successful new products over time. We are not concerned by the relatively slow start for the Apple Watch, as both the iPod and iPhone had similarly tepid launches, at least in terms of unit sales.

Although Apple maintains sterling brand recognition and has hundreds of millions of loyal followers, the company has made a couple of missteps under Cook that, some skeptics would argue, would have never happened under Steve Jobs. Apple executed poorly when it decided to part ways with Google Maps in iOS 6 and launch Apple Maps with a variety of bugs and errors, leading to a formal apology. Also, Apple was relatively slow to recognize demand for larger-screen iPhones, and although the firm rectified this issue with its iPhone 6 product lineup, Samsung and other Android-based competitors had a two-year head start and were able to steal away some iOS customers who sought out a larger-screen device.

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Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Industry Group
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More recently, Apple launched an iOS 8.0.1 update that was quickly recalled after it rendered some users' phones useless. Further, several prominent tech analysts and developers have questioned Apple’s cadence of updating iOS and OS X annually without fully fixing the bugs and problems with current software versions. These types of missteps could potentially leave the door open for any frustrated customers to try another platform like Android or Windows. At the very least, Apple may find it more difficult to quickly push its iOS user base onto the latest version of its operating system in future releases, which we see as a key positive differentiator for Apple over Android as apps developers don’t need to build and test their apps for a wide variety of operating system versions.

On the bright side, while many may have questioned Apple’s management team about its decision to initially price the iPhone 5c at $549, rather than at lower prices that more directly addresses emerging market demand, we approve of Apple’s decisions to maintain its premium pricing position. We also applaud Cook’s decision to initiate dividend and stock buyback programs, as well as take on debt in order to fund such programs. We recognize that many high-profile investors have called for larger buyback programs, but we think that Apple’s current plan of $140 billion is more than satisfactory as long as buybacks (and the debt issuances needed to fund these buybacks) are made in a prudent manner. In retrospect, the misstep may have come from not front-loading the buyback program in 2013, when both Apple’s share price and interest rates were lower than today.

Perhaps more importantly, 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, and we suspect that solid revenue growth and gross margins on headphone hardware sales may have justified the valuation. 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 and Kevin Lynch, former CTO of Adobe. 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 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.

Apple Inc AAPL (NAS) | ★★★★

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Analyst Notes

Apple is Bruised but Not Rotten as Currency and Macro Headwinds Weigh on iPhone Demand 26 Jan 2016

Apple's fiscal first quarter results and second-quarter outlook painted a gloomy picture in terms of currency headwinds and sluggish macroeconomic conditions, but we still don't see any long-term structural problems, such as market share loss or a lack of innovation, around the firm's core business. Our long-term thesis and narrow economic moat rating for Apple remain intact. We will likely cut our fair value estimate for Apple by about 5%, as near-term iPhone unit sales and Apple Watch revenue are poised to come in below our prior projections. Yet we still view Apple as one of our better long-term investment ideas within Tech, as the market still appears to be pricing Apple as if iPhone sales are is in secular decline. We think this bearish scenario is unlikely as we don't see a premium "iPhone killer" on the market, all while customer satisfaction remains high and Apple continues to attract switchers away from Android. iPhone replacement cycles are likely lengthening due to macroeconomic issues, but we think that sets Apple up nicely for a bounce back in iPhone sales at some point if the macro picture improves or, more important, the firm delivers on innovative new features within future iPhones.

Apple's total revenue in the December quarter was $75.9 billion, up 2% year over year but at the low end of the firm's previously forecast range, a rare miss by the firm. Revenue would have been up to $80.8 billion, up 8% year over year, on a constant currency basis. Apple sold 74.8 million iPhones in the December quarter, up by only 311,000 units or 0.4% year over year, with sales actually down on a sell-through basis to end customers. On the bright side, iPhone average selling prices were still spectacular at $691 per phone, up 3% sequentially, despite $49 of negative currency effects. We estimate that Apple sold about 5.5 million Watches in the quarter, which, if accurate, was softer than the sort of exponential growth we were previously expecting.

For the March quarter, Apple expects revenue in the range of $50 billion-$53 billion, which would represent a 9%-14% decline from the year-ago quarter. Whereas China was still a hot market for Apple last summer, despite hefty stock market volatility in the region, management saw some softening in the Chinese economy earlier in January, particularly in Hong Kong, which bodes poorly for total iPhone sales for the rest of fiscal 2016. Our prior near-term thesis suggested that Apple would achieve modest revenue growth in fiscal 2016, but flat-to-slightly down revenue appears more likely at this point unless foreign exchange rates significantly reverse course. Nonetheless, 400 basis points of the 9%-14% decline will come from currency, and we still tend to think of the remaining 5%-10% decline in revenue as cyclical, rather than secular.

We still attribute the weak results to stiff currency headwinds and sluggish macroeconomic conditions, which have likely lengthened replacement cycles for the iPhone as customers might be holding on to models for a little while longer. Apple cited that 60% of customers are using models older than the iPhone 6 series, which launched 16 months ago, which could be a data point that bodes well for pent up demand for future iPhones, possibly even an iPhone 7 next year if it has especially innovative features. By region, unit sales in China in the December quarter (up 18% year over year) were still solid, but demand was probably lower than last year in developed markets like the U.S. IPhone unit sales in India grew 76%, and although the region probably represents a nearly immaterial portion of revenue today, we think Apple is laying the ground work for future premium smartphone growth.

IPad and Mac sales were both relatively in line with our expectations. IPad ASPs of $439, up less than 2% sequentially, suggests that sales of the recently launched, higher-priced iPad Pro didn't set the world on fire, but given its focus on the enterprise, the holiday season likely won't

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Analyst Notes

be peak iPad Pro gift-giving season either. Other product revenue was $4.35 billion, up 43% sequentially—while impressive, the sequential growth was lower than that of both the iPhone and iPad. We view the figure as a sign that Apple Watch and Apple TV demand is growing, but haven't hit an inflection point toward mammoth growth either. Demand for more discretionary Apple items, like iPads and Watches, may also be muted in the near-term if economic headwinds persist.

Finally, Apple shed some insight into Services revenue. Officially, revenue grew 26% year-over-year, thanks in part to $548 million of revenue from a patent litigation settlement. Excluding the settlement, Apple's revenue grew 15%, but the firm highlighted that customer billings (including payments made to developers and content creators) was a bit higher, with 24% year-over-year growth. Apple also announced that one billion devices are currently active, a higher figure than our prior estimates and one that suggests hefty usage of older, traded-in iPhones. Yet we also wonder about the incremental value captured by Apple from users of older, used phones and whether this customer segment can move the needle for Apple's services revenue in any way.

Apple seemingly released these service figures as an attempt to appease investors that are looking for Apple to transform into a pure-play software company, which would perhaps be rewarded with a higher multiple. We're skeptical of such a transformation. Apple's software and services clearly capture value, but in our view, such value isn't solely based on services revenue and earnings, but more important, Apple's ability to maintain premium pricing on the iPhone within a smartphone market where virtually no other OEM can earn excess returns on capital. Such services also create customer switching costs (the source of our narrow economic moat rating) which we think will help Apple sell future iPhones and other devices to loyal customers over time. While we still don't project double-digit revenue growth from the iPhone in the long-term, we think iPhone sales will be more resilient over time, thanks to such software and services, and that we haven't reached peak iPhone just yet. All that said, when looking at services revenue, we're pleased to see healthy growth but we also view it as a bit of a lagging indicator, with revenue rising thanks to massive iOS and Mac device sales made in current and prior years as customers remain engaged with these devices.

We're Looking Past Apple Supply Chain Jitters as Recent Sell-Off Appears Overdone; Maintain $140 FVE 06 Jan 2016

Apple's shares have faced pressure as a variety of reports and, more important, a couple of the firm's component suppliers have suggested that inventory corrections are taking place as iPhone 6s and 6s Plus sales are not living up to the company's estimates. A clear takeaway, in our view, is that strong quarterly revenue beats for the December and March quarters, which Apple has routinely generated, are likely off the table with the 6s launch. Yet we still see a scenario where iPhone unit sales are able to meet our estimates despite grim production cuts, depending on how overly optimistic Apple may have been when building for its 6s launch. We still project that iPhone unit sales will be in the high-70 million range for the December quarter, which would represent modest growth from the year-ago quarter. Admittedly, iPhone unit sales in the March quarter, which would rely on Chinese New Year spending, looks shakier and may in fact decline year over year (we currently model slight growth).

More important, we still see little evidence of market share erosion for Apple at the high end of the market, and any shortfall in sales may stem from sluggish macroeconomic conditions or longer replacement cycles as iOS users delay upgrades. Either of these factors could lead to pent-up demand for new iPhones later this year or beyond. We still

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Analyst Notes

consider Apple's competitive position in mobile computing to be as strong as ever, yet shares in the $100 range are priced as if the iPhone will never grow again, which we think is possible but unlikely as we see the iOS ecosystem creating customer stickiness. We will maintain our $140 fair value estimate for Apple and still consider it one of the better investment ideas within technology. We will update our valuation after the firm's fiscal first-quarter earnings report, which may confirm or refute our near-term thesis. We'll also maintain our narrow moat rating for the firm.

Ultimately, we think that reported production cuts might not be mutually exclusive from Apple's prior revenue forecast or our estimates for near-term iPhone unit sales. We can start our analysis by looking at the Wall Street Journal's report from July 2015, where Apple asked manufacturers to build 85 million-90 million iPhone units for the December quarter (we should note that a similar Journal report from last year, which reported a 70 million-80 million unit build for the iPhone 6, appeared overly optimistic at first but turned out to be spot on). We estimate that Apple's revenue forecast of $77.5 billion (at the high end) from October implies iPhone sales in the mid- to high 70 million unit range, in line with our estimates. If Apple built up to 90 million iPhones (perhaps prepping for an even hotter 6s launch) but sells "only" 78 million units as we project, then up to 12 million units of iPhone inventory, or a 13% overbuild, may need to be digested.

We think that certain component order cuts appear reasonable in the light of a possible 13% or so inventory build. Avago's forecast essentially called for a low-teens year-over-year decline in radio frequency chip revenue, as both Apple and other Android customers may see sales declines at the same pace. Meanwhile, Dialog Semi, which has enormous customer concentration with Apple, also cut its December revenue forecast by 10%.

For March, a Nikkei report suggested that iPhone production in the March 2016 quarter was initially expected to be even with a year ago (a quarter in which Apple sold 61 million iPhones), but will now be down by 30%. If we again assume 12 million units of inventory digestion, then Apple could still achieve flattish year-over-year sales in March even if production were cut by 20%. A 30% cut, if true, would imply mid-50 million iPhone unit sales in March and a mid- to high-single-digit decline from a year ago. China is the key region to watch for March iPhone sales, in light of the Chinese New Year, and macroeconomic conditions may be muting demand for the device. On the competitive front, Huawei appears to be gaining share in the region, selling 108 million smartphones globally in calendar 2015, and perhaps price-sensitive customers are opting for lower-priced Huawei phones over low-end iPhones. Yet we suspect that Huawei's share gains are even more likely to be coming from other Android players like Samsung and Xiaomi, rather than solely from Apple.

In the end, we can't rule out the possibility that Apple announces a year-over-year decline in iPhone unit sales. However, if our analysis is accurate, then a dramatic fall-off in iPhone sales might not be happening after all, while the sell-off in Apple's stock would likely be well overdone.

Finally, Apple also issued a press release with insight into its Apps Store business, but ultimately, all of Apple's disclosed figures were in line with our projections. Apple generated $20 billion of gross App Store sales in calendar 2015 (meaning that Apple's 30% revenue cut implies $6 billion of revenue to the firm over this time frame). The firm also paid out $40 billion to developers since 2008, over a third of which was paid in calendar 2015, again in line with our estimates.

Apple Still Shines as Our Long-Term Thesis Remains Intact; Shares Appear Undervalued 27 Oct 2015

Apple reported solid fiscal fourth-quarter results which

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Analyst Notes

were modestly ahead of our expectations. However, more important, although Apple's forecast for the all-important December quarter was modestly below our expectations as a result of currency headwinds, underlying demand for Apple's products remain strong and the company isn't seeing any ill effects from a slowing Chinese economy. Our long-term thesis for Apple remains intact, as does our near-term outlook that fiscal 2016 will still be a growth year for the company. We will maintain our $140 fair value estimate and narrow moat rating for Apple. With shares trading around $115 after hours, we still view Apple as undervalued and consider it to be one of our better investment ideas in technology.

Apple sold 48 million iPhones in the September quarter, up 22% from the year-ago quarter. More impressive, iPhone average selling prices rose 2% sequentially to $670, as the firm continues to sell higher-priced "Plus" models and iPhones with increased storage capacity. iPhone unit sales in greater China were up 87% year over year, and Apple saw no major signs of economic deceleration in the region. Total revenue from Other Products was $3.0 billion, up 15% sequentially, which we think only implies modest revenue growth from the Apple Watch. We remain optimistic that the device will take off at some point, especially as customer satisfaction metrics (per Wristly) are encouraging.

Apple's revenue forecast for the December quarter is in the range of $75.5-$77.5 billion, which would represent only 1%-4% year-over-year growth. However, Apple expects its topline to be hindered by more than $5 billion of negative currency effects in the period. On a constant currency basis, Apple foresees 8%-11% growth. Combined with Apple seeing more switchers from Android than at any point during the past three-plus years, we still think that Apple's competitive position remains as strong as ever.

We continue to see many bright signs for long-term iPhone demand. About two-thirds of iPhone users are still on the iPhone 5s or prior, so Apple's tremendous growth in fiscal 2015 wasn't a function of a one-time push by customers to larger screen phones. In line with our narrow moat thesis for Apple, we still see switching costs enabling Apple to convert the majority of these "smaller screen" customers to larger, higher-priced iPhones in the next couple of years.

Also, half of Apple's iPhone 6 and 6 Plus sales in China this quarter were to first-time customers. While our narrow moat thesis for Apple focuses more on repeat smartphone customers, as we think that switching costs will allow Apple to hold on to most of its user base over time, we're encouraged that the size of the iOS user base continues to rise as Apple attracts new customers. These first-time customers might not be loyal Apple users today, but we remain optimistic that Apple will successfully convert many of these customers to repeat Apple buyers in the long term.

Furthermore, out of iPhone sales which Apple did make to repeat smartphone customers, 30% of those iPhone sales were made to prior Android users. This switching rate is likely a combination of two factors--Apple might not only be gaining even more share at the high-end of the market, but might also be getting entry-level and midtier smartphone customers to trade up to higher-priced iPhones as well. We're much more hopeful to see the latter. Many investors fear that the high-end of the smartphone market has no growth left. We are modestly more optimistic and foresee some long-term premium smartphone growth, albeit at a lower rate than the meteoric rise the market saw in recent years. Yet if Apple can get low-end customers to trade up to the high-end of the market and buy new iPhones, then Apple (and the premium smartphone market as a whole) may still have some room to grow. In turn, our long-term iPhone assumptions of midsingle digit unit sales growth (in line with our estimates for premium smartphone growth as a whole) may be conservative.

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Analyst Notes

Apple also disclosed that $25 billion, or 11%, of fiscal 2015 revenue came from enterprise customers across all product lines, up 40% from the prior year. We remain encouraged by Apple's slow, but steady, growth in the enterprise, as we view corporate customers as relatively stickier than consumers, which may lead to even higher switching costs which could warrant a wide economic moat rating for Apple in the future.

Finally, looking at Apple's forecast for the December quarter of $75.5-$77.5 billion of revenue, we don't think that the firm's new products and services (iPad Pro, new Apple TV, iPhone Upgrade Program in the U.S.) will move the needle very much. Instead, in our view, Apple remains an iPhone story, as it serves as the funnel which allows Apple to monetize all of its other software and services by maintaining premium pricing on hardware, in spite of collapsing prices seen by many Android-based smartphone makers.

We estimate that Apple's forecast implies iPhone unit sales in the high-70 million unit range, or roughly 5% growth from the year-ago quarter, which would be in line with CEO Tim Cook's comments for iPhone unit and revenue growth next quarter. We still believe that the two primary growth drivers for such spectacular iPhone growth in the near term—larger screen devices and distribution with China Mobile—will spur Apple to recognize iPhone growth in fiscal 2016 as well.

Apple Off to Another Record-Breaking Start With IPhone 6s; Maintaining $140 Fair Value Estimate 28 Sep 2015

On Monday, Apple announced another iPhone opening weekend sales record of 13 million iPhone 6s and 6s Plus models. We view these early sales results as a good sign for our near-term thesis that Apple's competitive position at the high end of the smartphone space remains as strong as ever and that fiscal 2016 will be another growth year for the iPhone and Apple. We will maintain our narrow moat rating and $140 fair value estimate, and we still consider Apple to be one of our best ideas within the technology sector. We suspect that Apple's sales results were relatively in line with, but did not outshine, prior market expectations, and we view Apple's early stock sell-off of 1% on Monday morning as being consistent with the broader U.S. stock market, rather than company-specific disappointment.

We view Apple's 13 million units as a strong enough "beat" over last year's record of 10 million to give us comfort that iPhone unit sales can still rise at a high-single-digit pace, if not more, next year. Yet, we don't blindly assume that iPhone demand is 30% stronger than a year ago.

Skeptics have argued that Apple should have handily beaten last year's mark, since China was not part of last year's total (although Hong Kong, a hot spot for Chinese buyers, was open) and because Apple gave customers a 15-day window to preorder iPhones (versus 9 days in years past). Further, Apple's opening weekend sales in any given year are not just a function of demand, but also supply. Apple disclosed that its 10 million-unit figure last year was hindered by supply constraints, but gave no such indication this year. It is quite possible that iPhone demand is only equal to, but not stronger than, last year, but that improved supply enabled Apple to ship 3 million more units this year. Nonetheless, at $113, Apple appears to be priced as if iPhone revenue has already peaked, so long-term investors will be rewarded for any upside in iPhone demand from here on out, in our view.

Apple Remains One of Our Best Ideas in Tech as Innovation Lives On; Maintaining $140 Fair Value 09 Sep 2015

We like what we saw out of Apple's jam-packed product announcement event on Sept. 9, as the company continues to push the envelope on hardware, software, and service

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Analyst Notes

innovations. Features and pricing around new products like the iPhone 6s and 6s Plus, iPad Pro, and Apple TV were in line with reports leading up to the event, and we don't view Apple's stock sell-off after the event as company-specific, but rather in line with the broader decline in the U.S. stock market. We will maintain our $140 fair value estimate for Apple and consider it to be one of our best investment ideas within the technology sector. Our narrow moat rating for Apple remains intact, while the announcements give us even more confidence in our positive moat trend rating. We think more and more customers are likely to buy additional Apple products and services (like the newest Apple TV), which should increase switching costs around iOS and allow Apple to sell repeat iPhones to this customer base well into the future.

The iPhone 6s will have its usual "s-series" upgrades from the prior year's model, such as improved processors and cameras with Ultra HD video capabilities. New features like Live Photos and 3D Touch appear compelling, but perhaps not as exciting as upgrades like TouchID as in years past. Nonetheless, we still foresee iPhone growth in fiscal 2016 as the two big drivers of last year's growth—demand for large-screen iPhones and expanded distribution with China Mobile—continue on. The health of China's true economy remains the biggest risk to Apple's near-term growth, in our view.

We view the iPad Pro as focusing on the enterprise and serving niche audiences, all while protecting its premium tablet leadership position and cutting off areas of differentiation from competitors like Microsoft. We found Apple's revised TV and tvOS to be its most interesting product, as the company strives to develop a one-stop platform for home content viewing (movies, TV, streaming video, gaming).

Ultimately, we view the iPhone 6s and 6s Plus, along with iOS 9, as solid improvements to its lineup. Again, we see the large screens and further expansion into China, rather than a must-have new feature within the 6s, as the two main drivers for ongoing iPhone growth in fiscal 2016. In our view, the risks to iPhone growth remain the same—tough comparisons from stellar sales a year ago, and, more important, a downward spiral in China's true economy that leads consumers to either hold on to their existing iPhones for a longer period of time or opt for lower-priced Android phones for their next (or first) smartphone. We are less concerned about the recent devaluation of the Chinese yuan for Apple, although undoubtedly, it will provide the company with near-term headwinds as sales of iPhones in China are translated back into relatively fewer U.S. dollars.

Apple's latest iPhones are available for pre-order on Sept. 12 and are available for sale on Sept. 25 in 12 countries, including China. We will keep a close eye on opening-weekend sales, which will presumably be disclosed by Apple on Sept. 28. We'd like to see Apple exceed the 10 million units sold in its opening weekend a year ago, as setting yet another weekend record could bode well for iPhone growth this fiscal year. Conversely, selling fewer opening weekend units than last year, or failure by Apple to disclose weekend sales at all, could be ominous signs for the iPhone and, most likely, investor sentiment over the next 12 months.

Perhaps the biggest iPhone-related surprise was Apple's iPhone Upgrade Program through its retail stores, where customers can pay monthly for an unlocked iPhone, AppleCare+, and the right to upgrade to Apple's latest iPhone every 12 months. Our initial thoughts are that the program is aimed at Apple controlling more of the overall customer experience, while also improving profitability as we believe that iPhones sold in retail stores carry modestly higher gross margins than those sold through third-party carriers and retailers.

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Analyst Notes

We were most impressed with Apple's revised TV, both in terms of hardware around the remote control (much improved versus previous Apple TVs), operating system and support for third-party apps. The new Apple TV user interface appears slick, as customers can search across multiple content apps (iTunes, Netflix, Hulu, HBO, Showtime and others in the future) and provide all viewing options on a single screen. Another nifty demo came when
Siri reacted to the command "What did she say?" by rewinding 15 seconds and automatically including closed captions. These types of elegant user interface features could make Apple TV the premier connected home platform for over-the-top video services today, and perhaps (as rumored) a streaming package for live TV later on. We're still not sold on Apple emerging as a dominant TV platform, given high fragmentation in this market. But like many of Apple's services, to the extent that customers gravitate to, and invest in, Apple TV, such loyal customers are more than likely to pay premium prices for iPhones and other Apple hardware products well into the future.

We continue to like Apple's moves to focus on the enterprise, and the iPad Pro is no exception. Ultimately, we view enterprise customers as stickier than consumers, especially as corporate apps are built specifically for iOS. We also anticipate that the iPad Pro will carry higher gross margins than the rest of Apple's iPad lineup, but doesn't yet move the needle on our fair value estimate.

The iPad Pro has an impressive feature set and Apple claims that the tablet is faster than 80% of PCs shipped over the past 12 months. Features within the iPad Pro, such as a stylus (named Apple Pencil), Smart Keyboard (akin to the case used with the Microsoft Surface) and multitasking appear to be radical departures from the iPad's introduction and copycat moves versus the competition. Yet we view such moves as satisfying niche audiences, and with a market leadership position in tablets, Apple is giving its customers fewer incentives to switch to alternate vendors and ecosystems. Apple started down this path last year by allowing third-party keyboards within iOS 8, after years of usage within Android, and it doesn't appear to have harmed the firm in any way. More important, features like the Pencil are nice-to-have's for certain corporate users, but still aren't the main sources of interaction with the device and do not degrade the basic user experience. We also don't view Apple's launch of the Pencil as a sign that Apple is somehow going against its core values; Steve Jobs was notoriously against a stylus in years past, but again, as the primary method of interacting with the device.

Apple Watch announcements, such as the unveiling of the Hermes collection and a variety of new Watch and band colors, don't move the needle on our estimates for future Watch sales. Yet Apple's allocation of event time to a demo by Airstrip, a medical app for doctors built for the Watch, bears watching, as Apple continues to inch the Watch closer to being a medical device, an area where pure-play tech firms have not expanded in the past, most likely due to (rightfully) hefty regulations in the medical field. Any advances by Apple in medical might be especially hard for competitors to emulate.

Looking at Apple's recent stock performance, at a closing price of $110, Apple's stock price is down 18% from its intraday high of $134.54 in late April. Compared with the 45% sell-off in Apple's stock from September 2012 to April 2013, we still view Apple as in a much better competitive position today, while we can also make a stronger case for a valuation floor. In 2012 and 2013, we saw Apple concede some share to Samsung, while we also weighed concerns that Android would win out as the sole ecosystem of choice for developers and consumers. We also saw investor concerns over Tim Cook's leadership, innovation within the company, and frustration from Apple's failure to distribute

Apple Inc AAPL (NAS) | ★★★★

Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Industry Group
100.75 USD	133.00 USD	79.80 USD	206.15 USD	High	Narrow	Positive	Standard	Computer Hardware

Analyst Notes

cash to shareholders.

Today, Apple has gained premium smartphone market share and built a sustainable mobile computing ecosystem, while the leading Android-based firms appear to be only winning at the middle and low end of the market. Meanwhile, Apple has exhibited clear innovation in hardware (Apple Watch), software, and services (Apple Pay) under Cook's leadership, while the firm now offers close to a 2% dividend yield and has a $50 billion stock buyback program in place. Combined with our narrow-moat thesis, where switching costs around iOS will help Apple retain a good portion of its user base over time, we continue to like Apple's prospects. Concerns around China's economy and its ability to offset all other tailwinds in Apple's favor are valid and bear watching, but barring further deceleration and prolonged sluggishness in the Chinese economy, we view Apple's recent stock sell-off as a bit overdone.

Apple Inc AAPL (NAS) | ★★★★

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Morningstar Analyst Forecasts

Financial Summary and Forecasts

Fiscal Year Ends in September

Growth (% YoY)	3-Year Hist. CAGR	2013	2014	2015	*Forecast* *2016*	*2017*	*5-Year Proj. CAGR*
Revenue	*14.3*	9.2	7.0	27.9	*-3.4*	*2.5*	*1.5*
EBIT	*8.8*	-11.3	7.2	35.7	*-10.9*	*4.4*	*-2.1*
EBITDA	*12.1*	-4.7	8.4	36.5	*-8.9*	*5.5*	*-0.5*
Net Income	*8.6*	-11.3	6.7	35.1	*-9.5*	*4.1*	*-2.0*
Diluted EPS	*13.5*	-10.0	13.6	42.8	*-6.3*	*4.1*	*-1.3*
Earnings Before Interest, after Tax	*6.4*	-17.5	10.2	32.5	*-9.8*	*2.6*	*-2.4*
Free Cash Flow	*17.6*	4.5	2.1	52.2	*-29.1*	*4.5*	*-6.0*

Profitability	3-Year Hist. Avg	2013	2014	2015	*2016*	*2017*	*5-Year Proj. Avg*
Operating Margin %	*29.3*	28.7	28.7	30.5	*28.1*	*28.6*	*27.3*
EBITDA Margin %	*33.7*	32.6	33.1	35.3	*33.3*	*34.3*	*33.2*
Net Margin %	*22.0*	21.7	21.6	22.9	*21.4*	*21.7*	*20.6*
Free Cash Flow Margin %	*25.3*	24.5	23.4	27.9	*20.5*	*20.9*	*20.2*
ROIC %	*110.0*	108.0	102.3	119.8	*95.6*	*82.6*	*73.2*
Adjusted ROIC %	*118.4*	112.1	110.1	133.0	*105.8*	*90.8*	*80.3*
Return on Assets %	*19.3*	19.3	18.0	20.5	*15.9*	*15.1*	*13.5*
Return on Equity %	*36.8*	30.6	33.6	46.3	*35.1*	*28.8*	*24.9*

Leverage	3-Year Hist. Avg	2013	2014	2015	*2016*	*2017*	*5-Year Proj. Avg*
Debt/Capital	*0.24*	0.12	0.24	0.35	*0.26*	*0.21*	*0.17*
Total Debt/EBITDA	*0.56*	0.30	0.58	0.78	*0.71*	*0.63*	*0.56*
EBITDA/Interest Expense	*221.03*	409.97	140.58	112.53	*64.75*	*69.33*	*72.95*

Valuation Summary and Forecasts

	2014	2015	*2016(E)*	*2017(E)*
Price/Fair Value	1.08	0.79	—	—
Price/Earnings	15.6	12.0	*11.7*	*11.2*
EV/EBITDA	9.7	7.7	*7.8*	*7.4*
EV/EBIT	11.1	8.9	*9.2*	*8.8*
Free Cash Flow Yield %	8.5	11.4	*9.3*	*9.7*
Dividend Yield %	1.9	1.9	*2.1*	*2.2*

Key Valuation Drivers

Cost of Equity %	9.0
Pre-Tax Cost of Debt %	5.5
Weighted Average Cost of Capital %	8.8
Long-Run Tax Rate %	26.0
Stage II EBI Growth Rate %	1.9
Stage II Investment Rate %	7.6
Perpetuity Year	15

Additional estimates and scenarios available for download at http://select.morningstar.com.

Discounted Cash Flow Valuation

	USD Mil	Firm Value (%)	Per Share Value
Present Value Stage I	188,039	31.4	33.09
Present Value Stage II	213,882	35.7	37.64
Present Value Stage III	197,565	33.0	34.76
Total Firm Value	**599,487**	**100.0**	**105.49**
Cash and Equivalents	205,666	—	36.19
Debt	-64,462	—	-11.34
Preferred Stock	—	—	—
Other Adjustments	—	—	—
Equity Value	**740,691**	**—**	**130.33**
Projected Diluted Shares	5,683		
Fair Value per Share (USD)	—		

The data in the table above represent base-case forecasts in the company's reporting currency as of the beginning of the current year. Our fair value estimate may differ from the equity value per share shown above due to our time value of money adjustment and in cases where probability-weighted scenario analysis is performed.

Apple Inc AAPL (NAS) | ★★★★

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100.75 USD	133.00 USD	79.80 USD	206.15 USD	High	Narrow	Positive	Standard	Computer Hardware

Morningstar Analyst Forecasts

Income Statement (USD Mil)
Fiscal Year Ends in September

				Forecast	
	2013	2014	2015	*2016*	*2017*
Revenue	**170,910**	**182,795**	**233,715**	***225,774***	***231,483***
Cost of Goods Sold	106,606	112,258	140,089	*137,120*	*136,794*
Gross Profit	**64,304**	**70,537**	**93,626**	***88,654***	***94,688***
Selling, General & Administrative Expenses	10,830	11,993	14,329	*15,221*	*16,438*
Research & Development	4,475	6,041	8,067	*9,996*	*11,995*
Other Operating Expense (Income)	—	—	—	—	—
Depreciation & Amortization (if reported separately)	—	—	—	—	—
Operating Income (ex charges)	**48,999**	**52,503**	**71,230**	***63,437***	***66,255***
Restructuring & Other Cash Charges	—	—	—	—	—
Impairment Charges (if reported separately)	—	—	—	—	—
Other Non-Cash (Income)/Charges	—	—	—	—	—
Operating Income (incl charges)	**48,999**	**52,503**	**71,230**	***63,437***	***66,255***
Interest Expense	136	430	733	*1,161*	*1,144*
Interest Income	1,292	1,410	2,018	*2,773*	*2,873*
Pre-Tax Income	**50,155**	**53,483**	**72,515**	***65,050***	***67,985***
Income Tax Expense	13,118	13,973	19,121	*16,736*	*17,676*
Other After-Tax Cash Gains (Losses)	—	—	—	—	—
Other After-Tax Non-Cash Gains (Losses)	—	—	—	—	—
(Minority Interest)	—	—	—	—	—
(Preferred Dividends)	—	—	—	—	—
Net Income	**37,037**	**39,510**	**53,394**	***48,314***	***50,309***
Weighted Average Diluted Shares Outstanding	6,522	6,123	5,793	*5,594*	*5,594*
Diluted Earnings Per Share	**5.68**	**6.45**	**9.22**	***8.64***	***8.99***
Adjusted Net Income	37,037	39,510	53,394	*48,314*	*50,309*
Diluted Earnings Per Share (Adjusted)	**5.68**	**6.45**	**9.22**	***8.64***	***8.99***
Dividends Per Common Share	1.62	1.82	1.98	*2.14*	*2.24*
EBITDA	**55,756**	**60,449**	**82,487**	***75,141***	***79,284***
Adjusted EBITDA	**55,756**	**60,449**	**82,487**	***75,141***	***79,284***

Apple Inc AAPL (NAS) | ★★★★

Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Industry Group
100.75 USD	133.00 USD	79.80 USD	206.15 USD	High	Narrow	Positive	Standard	Computer Hardware

Morningstar Analyst Forecasts

Balance Sheet (USD Mil)

Fiscal Year Ends in September

	2013	2014	2015	*Forecast* *2016*	*2017*
Cash and Equivalents	146,761	155,239	205,666	*230,061*	*263,569*
Investments	—	—	—	—	—
Accounts Receivable	13,102	17,460	16,849	*16,277*	*16,688*
Inventory	1,764	2,111	2,349	*2,299*	*2,294*
Deferred Tax Assets (Current)	3,453	4,318	5,546	*5,358*	*5,493*
Other Short Term Assets	14,421	19,565	23,033	*22,250*	*22,813*
Current Assets	**179,501**	**198,693**	**253,443**	***276,245***	***310,856***
Net Property Plant, and Equipment	16,597	20,624	22,471	*25,350*	*27,646*
Goodwill	1,577	4,616	5,116	*5,766*	*6,416*
Other Intangibles	4,179	4,142	3,893	*3,060*	*2,485*
Deferred Tax Assets (Long-Term)	—	—	—	—	—
Other Long-Term Operating Assets	5,146	3,764	5,556	*5,367*	*5,503*
Long-Term Non-Operating Assets	—	—	—	—	—
Total Assets	**207,000**	**231,839**	**290,479**	***315,789***	***352,906***
Accounts Payable	22,367	30,196	35,490	*34,738*	*34,655*
Short-Term Debt	—	6,308	10,999	*3,500*	*6,000*
Deferred Tax Liabilities (Current)	—	—	—	—	—
Other Short-Term Liabilities	21,291	26,944	34,121	*32,962*	*33,795*
Current Liabilities	**43,658**	**63,448**	**80,610**	***71,200***	***74,450***
Long-Term Debt	16,960	28,987	53,463	*49,963*	*43,963*
Deferred Tax Liabilities (Long-Term)	16,489	20,259	24,100	*26,100*	*28,100*
Other Long-Term Operating Liabilities	2,625	3,031	3,624	*3,501*	*3,589*
Long-Term Non-Operating Liabilities	3,719	4,567	9,327	*9,327*	*9,327*
Total Liabilities	**83,451**	**120,292**	**171,124**	***160,090***	***159,430***
Preferred Stock	—	—	—	—	—
Common Stock	19,764	23,313	27,416	*27,416*	*27,416*
Additional Paid-in Capital	—	—	—	—	—
Retained Earnings (Deficit)	104,256	87,152	92,284	*128,627*	*166,405*
(Treasury Stock)	—	—	—	—	—
Other Equity	-471	1,082	-345	*-345*	*-345*
Shareholder's Equity	**123,549**	**111,547**	**119,355**	***155,698***	***193,476***
Minority Interest	—	—	—	—	—
Total Equity	**123,549**	**111,547**	**119,355**	***155,698***	***193,476***

Apple Inc AAPL (NAS) | ★★★★

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100.75 USD	133.00 USD	79.80 USD	206.15 USD	High	Narrow	Positive	Standard	Computer Hardware

Morningstar Analyst Forecasts

Cash Flow (USD Mil)

Fiscal Year Ends in September

				Forecast	
	2013	2014	2015	*2016*	*2017*
Net Income	37,037	39,510	53,394	*48,314*	*50,309*
Depreciation	5,800	6,900	9,200	*10,621*	*12,205*
Amortization	957	1,046	2,057	*1,083*	*825*
Stock-Based Compensation	2,253	2,863	3,586	*3,464*	*3,552*
Impairment of Goodwill	—	—	—	—	—
Impairment of Other Intangibles	—	—	—	—	—
Deferred Taxes	1,141	2,347	1,382	*2,188*	*1,865*
Other Non-Cash Adjustments	—	—	—	—	—
(Increase) Decrease in Accounts Receivable	-2,172	-4,232	611	*572*	*-412*
(Increase) Decrease in Inventory	-973	-76	-238	*50*	*5*
Change in Other Short-Term Assets	1,303	-2,053	-3,914	*883*	*-463*
Increase (Decrease) in Accounts Payable	2,340	5,938	5,400	*-752*	*-83*
Change in Other Short-Term Liabilities	5,980	7,470	9,788	*-1,159*	*833*
Cash From Operations	**53,666**	**59,713**	**81,266**	***65,264***	***68,637***
(Capital Expenditures)	-8,165	-9,571	-11,247	*-13,500*	*-14,500*
Net (Acquisitions), Asset Sales, and Disposals	-496	-3,765	-343	*-1,000*	*-1,000*
Net Sales (Purchases) of Investments	-25,113	-9,243	-44,684	—	—
Other Investing Cash Flows	—	—	—	*66*	*-47*
Cash From Investing	**-33,774**	**-22,579**	**-56,274**	***-14,434***	***-15,547***
Common Stock Issuance (or Repurchase)	-22,860	-45,000	-35,253	—	—
Common Stock (Dividends)	-10,564	-11,126	-11,561	*-11,971*	*-12,531*
Short-Term Debt Issuance (or Retirement)	—	6,306	2,191	*-7,499*	*2,500*
Long-Term Debt Issuance (or Retirement)	16,896	11,960	27,114	*-3,500*	*-6,000*
Other Financing Cash Flows	149	311	-207	*-3,464*	*-3,552*
Cash From Financing	**-16,379**	**-37,549**	**-17,716**	***-26,434***	***-19,582***
Exchange Rates, Discontinued Ops, etc. (net)	—	—	—	—	—
Net Change in Cash	**3,513**	**-415**	**7,276**	***24,395***	***33,507***

Apple Inc AAPL (NAS) | ★★★★

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100.75 USD	133.00 USD	79.80 USD	206.15 USD	High	Narrow	Positive	Standard	Computer Hardware

Comparable Company Analysis

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

Valuation Analysis

		Price/Earnings			EV/EBITDA			Price/Free Cash Flow			Price/Book			Price/Sales		
Company/Ticker	Price/Fair Value	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)
Alphabet Inc GOOG USA	0.95	24.1	21.4	19.3	16.8	14.4	13.2	31.0	25.7	22.0	4.1	3.7	3.2	6.6	5.8	5.1
Microsoft Corp MSFT USA	1.02	28.2	16.2	16.5	11.5	8.6	10.0	14.8	13.3	15.5	4.3	3.8	4.1	3.7	3.8	4.1
HP Inc HPQ USA	0.91	—	7.1	7.0	—	6.3	6.4	—	8.7	10.3	—	NM	-3.9	—	0.4	0.4
Average		26.2	14.9	14.3	14.2	9.8	9.9	22.9	15.9	15.9	4.2	3.8	1.1	5.2	3.3	3.2
Apple Inc AAPL US	**0.76**	**12.0**	**11.7**	**11.2**	**7.7**	**7.8**	**7.4**	**8.8**	**10.8**	**10.3**	**5.2**	**3.6**	**2.9**	**2.6**	**2.5**	**2.4**

Returns Analysis

		ROIC %			Adjusted ROIC %			Return on Equity %			Return on Assets %			Dividend Yield %		
Company/Ticker	Last Historical Year Total Assets (Mil)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)
Alphabet Inc GOOG USA	— USD	33.8	33.1	34.2	52.6	49.7	50.9	14.5	14.6	14.8	11.7	12.0	12.4	—	—	—
Microsoft Corp MSFT USA	— USD	102.1	224.8	243.5	-410.2	-395.6	-401.4	14.4	27.7	26.0	7.0	13.3	13.3	2.9	2.1	2.1
HP Inc HPQ USA	— USD	133.7	60.4	47.8	-248.2	772.1	214.8	-28.1	-35.9	-47.6	7.1	7.7	8.0	—	4.9	5.1
Average		89.9	106.1	108.5	-201.9	142.1	-45.2	0.3	2.1	-2.3	8.6	11.0	11.2	2.9	3.5	3.6
Apple Inc AAPL US	**290,479** USD	**119.8**	**95.6**	**82.6**	**133.0**	**105.8**	**90.8**	**46.3**	**35.1**	**28.8**	**20.5**	**15.9**	**15.1**	**1.9**	**2.1**	**2.2**

Growth Analysis

		Revenue Growth %			EBIT Growth %			EPS Growth %			Free Cash Flow Growth %			Dividend/Share Growth %		
Company/Ticker	Last Historical Year Revenue (Mil)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)
Alphabet Inc GOOG USA	75,368 USD	14.2	14.0	12.1	17.2	17.5	17.0	7.8	12.6	11.2	947.7	31.8	25.5	—	—	—
Microsoft Corp MSFT USA	93,580 USD	7.8	-0.2	10.1	1.6	7.5	7.1	-43.8	84.8	17.3	-10.7	49.5	0.0	13.8	-23.2	21.8
HP Inc HPQ USA	52,701 USD	-6.4	-9.0	-4.5	4.1	-21.5	-0.6	16.9	-29.1	1.4	-102.0	-2,166.4	-30.7	4.0	-20.0	6.0
Average		5.2	1.6	5.9	7.6	1.2	7.8	-6.4	22.8	10.0	278.3	-695.0	-1.7	8.9	-21.6	13.9
Apple Inc AAPL US	**233,715** USD	**27.9**	**-3.4**	**2.5**	**35.7**	**-10.9**	**4.4**	**42.8**	**-6.3**	**4.1**	**52.2**	**-29.1**	**4.5**	**9.0**	**8.1**	**4.7**

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Apple Inc AAPL (NAS) | ★★★★

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Comparable Company Analysis

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

Profitability Analysis

Company/Ticker	Last Historical Year Net Income (Mil)	Gross Margin %			EBITDA Margin %			Operating Margin %			Net Margin %			Free Cash Flow Margin %		
		2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)
Alphabet Inc GOOG USA	21,099 USD	62.2	61.7	61.2	33.7	34.4	33.6	25.7	26.4	27.6	28.0	28.2	28.5	21.2	22.4	23.3
Microsoft Corp MSFT USA	12,193 USD	64.7	65.8	64.2	25.8	36.2	34.9	30.1	32.4	31.5	13.0	25.6	24.8	24.7	28.6	26.3
HP Inc HPQ USA	4,121 USD	20.9	19.2	19.2	10.2	8.8	9.2	9.9	8.5	8.9	7.8	6.1	6.5	1.9	4.7	4.1
Average		49.3	48.9	48.2	23.2	26.5	25.9	21.9	22.4	22.7	16.3	20.0	19.9	15.9	18.6	17.9
Apple Inc AAPL US	**53,394** USD	**40.1**	**39.3**	**40.9**	**35.3**	**33.3**	**34.3**	**30.5**	**28.1**	**28.6**	**22.9**	**21.4**	**21.7**	**30.0**	**22.9**	**23.4**

Leverage Analysis

Company/Ticker	Last Historical Year Total Debt (Mil)	Debt/Equity %			Debt/Total Cap %			EBITDA/Interest Exp.			Total Debt/EBITDA			Assets/Equity		
		2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)
Alphabet Inc GOOG USA	5,237 USD	4.3	3.9	3.4	4.2	3.8	3.3	—	—	—	0.2	0.2	0.2	1.2	1.2	1.2
Microsoft Corp MSFT USA	32,793 USD	41.0	31.4	29.8	29.1	23.9	23.0	—	136.9	156.9	1.4	0.9	0.9	2.2	2.0	1.9
HP Inc HPQ USA	18,146 USD	-210.8	-252.5	-323.7	190.2	165.6	144.7	9.9	7.9	8.3	3.4	4.1	3.8	-4.2	-5.2	-6.9
Average		-55.2	-72.4	-96.8	74.5	64.4	57.0	9.9	72.4	82.6	1.7	1.7	1.6	-0.3	-0.7	-1.3
Apple Inc AAPL US	**64,462** USD	**54.0**	**34.3**	**25.8**	**35.1**	**25.6**	**20.5**	**112.5**	**64.7**	**69.3**	**0.8**	**0.7**	**0.6**	**2.4**	**2.0**	**1.8**

Liquidity Analysis

Company/Ticker	Market Cap (Mil)	Cash per Share			Current Ratio			Quick Ratio			Cash/Short-Term Debt			Payout Ratio %		
		2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)	2015	2016(E)	2017(E)
Alphabet Inc GOOG USA	494,799 USD	103.72	110.88	128.42	5.35	5.72	6.52	5.35	5.72	6.52	36.49	39.80	47.01	—	—	—
Microsoft Corp MSFT USA	418,798 USD	0.68	4.12	5.55	2.50	2.91	3.03	2.44	2.85	2.96	1.12	26.38	14.72	81.1	30.8	35.0
HP Inc HPQ USA	19,531 USD	5.85	5.93	5.59	1.19	1.20	1.20	1.01	1.02	1.02	4.28	4.34	4.09	45.1	34.2	35.8
Average		36.75	40.31	46.52	3.01	3.28	3.58	2.93	3.20	3.50	13.96	23.51	21.94	63.1	32.5	35.4
Apple Inc AAPL US	**558,617** USD	**35.50**	**41.13**	**47.12**	**3.14**	**3.88**	**4.18**	**3.11**	**3.85**	**4.14**	**18.70**	**65.73**	**43.93**	**21.5**	**24.8**	**24.9**

Research Methodology for Valuing Companies

Components of Our Methodology
- Economic Moat™ Rating
- Moat Trend™ Rating
- Moat Valuation
- Three-Stage Discounted Cash Flow
- Weighted Average Cost of Capital
- Fair Value Estimate
- Scenario Analysis
- Uncertainty Ratings
- Margin of Safety
- Consider Buying/Selling
- Stewardship Rating

We believe 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: our assessment of the firm's economic moat, our estimate of the stock's fair value, our uncertainty around that fair value estimate and the current market price. This process ultimately culminates in our single-point star rating. Underlying this rating is a fundamentally focused methodology and a robust, standardized set of procedures and core valuation tools used by Morningstar's equity analysts.

The concept of the Morningstar Economic Moat™ Rating plays a vital role not only in our qualitative assessment of a firm's investment potential, but also in our actual calculation of our fair value estimates. We assign three moat ratings—none, narrow, or wide—as well as the Morningstar Moat Trend™ Rating—positive, stable, or negative—to each company we cover. Companies with a narrow moat are those we believe are more likely than not to achieve normalized excess returns on invested capital over 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. The assumptions that we make about a firm's economic moat play a vital role in determining the length of "economic outperformance" that we assume in the terminal sections of our valuation model. To assess the sustainability of excess profits, analysts perform ongoing assessments of what we call 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.

At the heart of our valuation system is a detailed projection of a company's future cash flows. The first stage of our three-stage discounted cash flow model can last from 5 to 10 years and contains numerous detailed assumptions about various financial and operating items. The second stage of our model—where a firm's return on new invested capital (RONIC) and earnings growth rate implicitly fade until the perpetuity year—can last anywhere from one year (for companies with no economic moat) to 10-15 years (for wide-moat companies). In our third stage, we assume the firm's RONIC equals its weighted average cost of capital, and we calculate a continuing value using a standard perpetuity formula. In deciding on the rate at which to discount future cash flows, we use a building block approach,

Morningstar Research Methodology for Valuing Companies

Source: Morningstar, Inc.

Detailed Methodology Documents and Materials*

- Comprehensive Equity Research Methodology
- Uncertainty Methodology
- Cost of Equity Methodology
- Morningstar DCF Valuation Model
- Stewardship Rating Methodology

*Please contact a sales representative for more information.

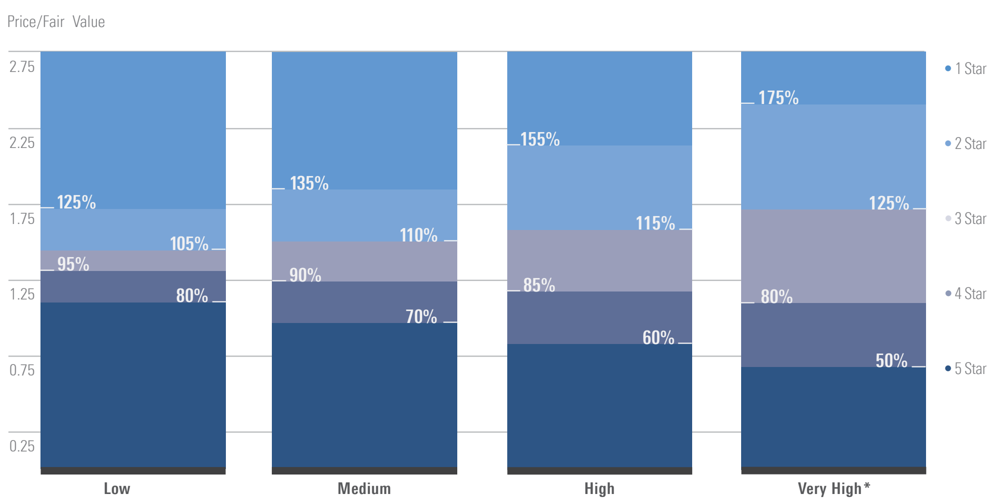
which takes into account expectations for market real return, inflation, country risk premia, corporate credit spread, and any additional systematic risk.

We also employ a number of other tools to augment our valuation process, including scenario analysis, where we assess the likelihood and performance of a business under different economic and firm-specific conditions. Our analysts model three scenarios for each company we cover, stress-testing the model and examining the distribution of resulting fair values.

The Morningstar Uncertainty Rating captures the range of likely potential fair values 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 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, and other company-specific factors.

Our corporate Stewardship Rating represents our assessment of management's stewardship of shareholder capital, with particular emphasis on capital allocation decisions. Analysts consider companies' investment strategy and valuation, financial leverage, dividend and share buyback policies, execution, compensation, related party transactions, and accounting practices. Corporate governance practices are only considered if they've had a demonstrated impact on shareholder value. Analysts assign one of three ratings: "Exemplary," "Standard," and "Poor." Analysts judge stewardship from an equity holder's perspective. Ratings are determined on an absolute basis. Most companies will receive a Standard rating, and this is the default rating in the absence of evidence that managers have made exceptionally strong or poor capital allocation decisions.

Morningstar Margin of Safety and Star Rating Bands

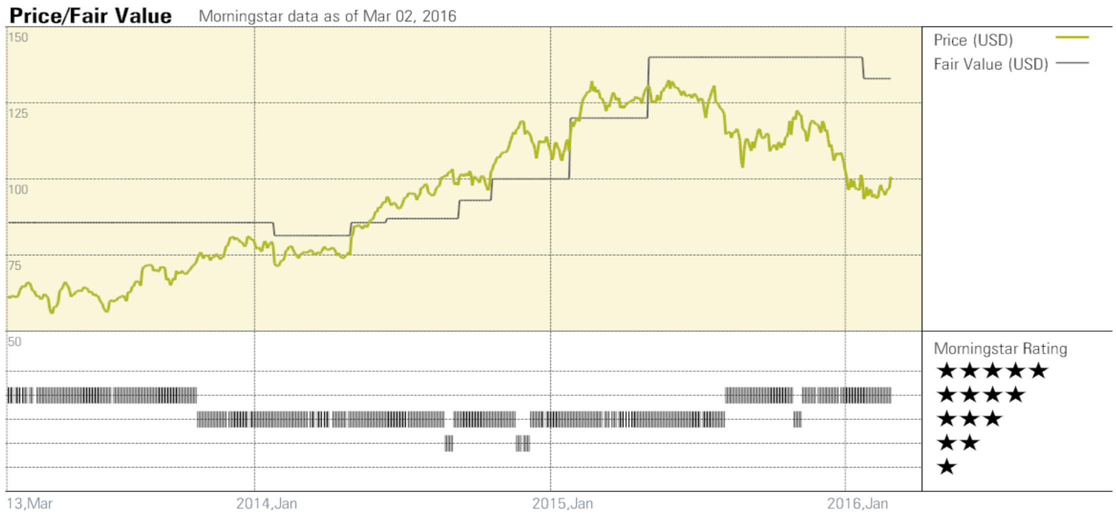


* Occasionally a stock's uncertainty will be too high for us to estimate, in which case we label it Extreme.

Source: Morningstar, Inc.

Apple Inc AAPL (NAS) | ★★★★

Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Industry Group
100.75 USD	133.00 USD	79.80 USD	206.15 USD	High	Narrow	Positive	Standard	Computer Hardware



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Apple Inc AAPL (NAS) | ★★★★

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Apple Inc AAPL (NAS) | ★★★★

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