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CLICKS vs. BRICKS Vol. 54: Raise, Expand, Repeat

February 7, 2019

Key Takeaway

In our weekly update, we highlight key developments from digitally native retailers, trends in e-comm, and the strategies that traditional retailers are adopting to compete in an increasingly digital world. This week, we highlight funding raises by Cuyana and Rebag.

Cuyana raises \$30M. The accessories and apparel retailer has recently raised \$30M in funding from H.I.G. Capital, bringing its total funding to ~\$45M. The capital raise will go toward generating supply chain efficiencies, growing its domestic store footprint, and the consideration of new categories such as beauty, shoes, jewelry, and home. The digital native currently operates 5 stores, but hopes to open permanent stores in place of pop-ups in Chicago, Seattle, Washington, DC, and Texas.

OUR VIEW: This move comes on the heels of the business's plan last year [here](#) to open an NYC flagship. Management has stated that their stores are used as marketing hubs, a common theme given many digitally native businesses build locations in highly trafficked cities to expand their brand presence. Additionally, brands such Cuyana are increasingly offering sustainable product to a young and growing customer base willing to pay premium for quality eco-friendly product, and this trend should well position the business as it continues to expand.

Rebag Raises \$25M. Digital native Rebag, a luxury handbag marketplace, has raised \$25M, bringing total funding to \$52M. Management plans to use the capital to open stores in Florida, Chicago, and San Francisco, with a goal of 30 locations over the next 2-3 years (inc. 5 existing locations in NYC/LA).

OUR VIEW: The theme of online retailers opening stores has permeated its way into the resale market, such as StockX and ThredUp. Last week, we discussed StockX's plans to move into London [here](#) and their capital raise late last year [here](#). We continue to expect resale players to utilize capital to open stores as this will help to increase touchpoints with the consumer and raise awareness.

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[^]Prior trading day closing price unless otherwise noted.

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Company Valuation/Risks

Apple Inc.

Our PT of \$160 is derived by a DCF (11% WACC) and implies 14x our 2019 EPS, supported by a SOTP and multiples. Risks to our call include a rebound in China and iPhone revenue, or shares re-rating around Services or trade war news. Risks to AAPL's business include a trade war with China, consumer pushback against higher ASP, competitive services diluting the value of Apple's ecosystem, and a strengthening dollar.

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Investment Recommendation Record

(Article 3(1)e and Article 7 of MAR)

Recommendation Published	February 7, 2019 , 13:06 ET.
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Other Companies Mentioned in This Report

- Apple Inc. (AAPL: \$174.24, HOLD)



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Legend:

I: Initiating Coverage

D: Dropped Coverage

B: Buy

H: Hold

UP: Underperform

Distribution of Ratings

Distribution of Ratings						
			IB Serv./Past12 Mos.		JIL Mkt Serv./Past12 Mos.	
	Count	Percent	Count	Percent	Count	Percent
BUY	1145	55.37%	92	8.03%	12	1.05%
HOLD	795	38.44%	14	1.76%	1	0.13%
UNDERPERFORM	128	6.19%	2	1.56%	0	0.00%

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February 5, 2019

Rating:

OUTPERFORM

Price:

\$171.25

12-Month Price Target:

\$200.00

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Apple (AAPL)

Retail Chief Ahrendts Departs Cupertino; Timing a Surprise But Limited Impact

After the bell Apple announced that retail chief and one of the company's top executives Angela Ahrendts will be leaving Cupertino to pursue "new personal and professional pursuits" in April after five years at the company. Taking over for Ahrendts will be Deirdre O'Brien, currently Vice President of People and an Apple veteran for the last three decades who is well respected both internally at Apple and within the industry. Our initial take is this move by Ahrendts is a "surprise to the Street" as she was one of the key executives at Apple and a linchpin around running 500+ retail stores on five continents and potentially was seen by some as a future heir to Cook as CEO further down the line. Her background as CEO of Burberry and the last five years at Apple established Ahrendts as one of the most respected retail visionaries and executives around and was clearly an asset for Cupertino especially as the company was looking to innovate the design and vibe of its flagship Apple retail stores around the world. That said, Apple is entering a critical period with iPhone demand sluggish on this latest XS/XR cycle and driving demand on the retail front will be critical to a rebound in success for Apple as it heads into its next product cycle in September 2019. A major focus of Apple with O'Brien now running the show will be catalyzing demand in China with the store experience a major factor in this region as well as other regions with consumers getting the "Apple experience" when they look to test drive new technology in the store, a key ingredient in Cupertino's recipe for success. We are encouraged that a core Apple insider took over the reigns at this juncture as an outsider running retail going into one of the most pivotal, defining periods for Cook & Co. in the company's history would have been a risky endeavor. In a nutshell, while the timing of this departure is a head scratcher, change could be a good thing for Apple as the last year has been nothing to write home about with the XR China debacle still a black eye for the company as it looks to rebound over the next 6-9 months with the retail strategy playing a vital role on this front. We do not expect this news to negatively impact the retail strategy for Apple as iPhone product development, the massive installed base/upgrade cycle, and pricing continue to be the major sway factors going forward for Apple. We maintain our OUTPERFORM rating and \$200 price target.

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Valuation

Our \$200 price target represents our SOTP valuation on Apple

Risks to the Attainment of Our Price Target and Rating:

- Increasing competition, pricing, technology shifts, and macroeconomic conditions.
- The success of the iPhone product cycle remains key to the company's growth prospects
- Apple's ability to successfully ramp its software/services business is dependent on further penetration of its installed base
- Success of Apple's product strategy in China, which remains a key growth driver for the coming years and could be impaired by lower priced smartphones and competition. China macro/tariffs issue remain a long-term risk.

Analyst Certification

We, Daniel Ives and Strecker Backe, certify that the views expressed in this report accurately reflect our personal opinions and that we have not and will not, directly or indirectly, receive compensation or other payments in connection with our specific recommendations or views contained in this report.

Mentioned Companies

Company	Rating	Price	Target
Apple	OUTPERFORM	\$171.25	\$200.00

Investment Rating System:

OUTPERFORM: Expect the total return of the stock to outperform relative to the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

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UNDERPERFORM: Expect the total return of the stock to underperform relative to the median total return of the analyst's (or the analyst's team) coverage universe of the next 6-12 months.

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Rating distribution (as of February 5, 2019)	Investment Banking Relationships (as of February 5, 2019)
OUTPERFORM: 59.82%	OUTPERFORM: 11.28%
NEUTRAL: 38.96%	NEUTRAL: 0.79%
UNDERPERFORM: 1.23%	UNDERPERFORM: 0.00%

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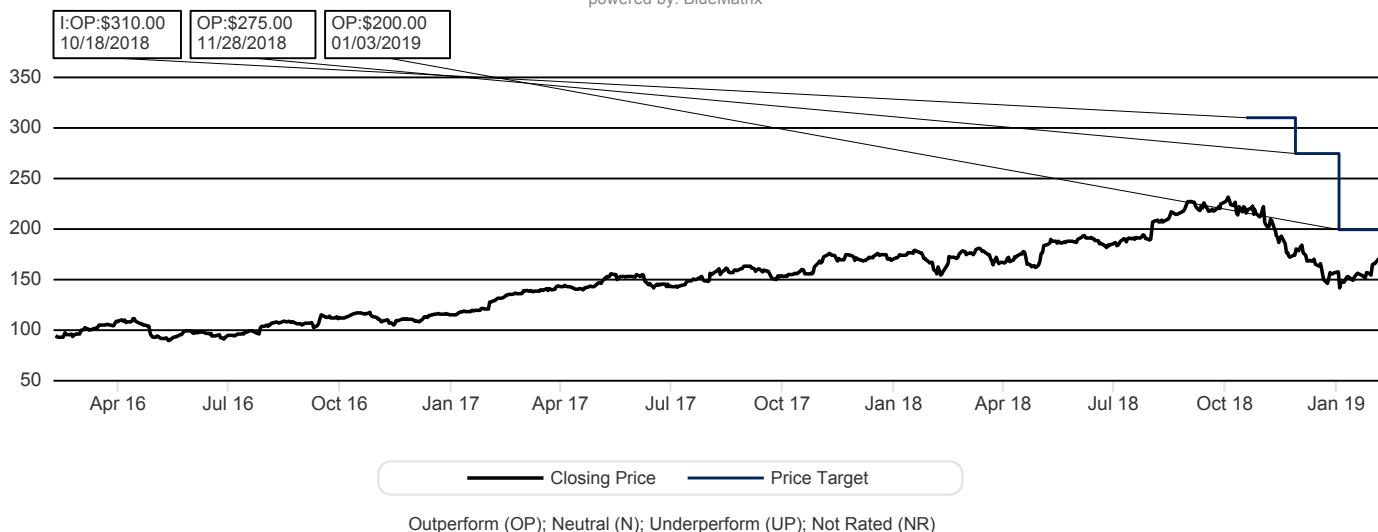
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Price Charts

Apple Rating History as of 02-04-2019

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Apple

Strategic M&A Fits Include Gaming, Video, & Home Speaker to Accelerate Services Growth and Leverage Wider Installed Base

Acquisition targets for Apple have been widely discussed in press reports on a regular basis, despite the company itself offering no comments on the subject or giving any indication to investors of its intentions about future products/services. Surveying a sample of these press reports (*see Appendix*) shows that speculation has included a wide range of industries, from automobile manufacturers, like Tesla, to information platforms, like Twitter. Speculation has likely in part been driven by the ~\$130 bn of net cash on Apple's balance sheet, an average of \$45 bn of cash flow generated each year after dividends, and stated target of being in a net cash neutral position long-term without accompanying details on the roadmap. While investors hardly seem to be complaining about the massive buyback pace, including ~\$73 bn last year, we believe they do hope the firm uses its balance sheet strength to insulate the business against often-seen disruptions in the technology landscape, some of which Apple itself has driven in the past. Of the potential acquisition targets that have been widely speculated, we find three industries to be of the most strategic value, providing potential growth opportunities to leverage services over a wider installed base.

- **Video gaming** stands out to us as a potential sector target given the combination of: 1) leverage to an industry rapidly transitioning to mobile; 2) hardware capabilities for high-end gaming potentially supporting a replacement cycle; 3) synergies in gaming services with iPhone's hardware leadership, including in AR/VR; and 4) access to installed gaming hardware of hundreds of millions of units, including both mobile and consoles. *Among targets mentioned in press reports, we find Activision Blizzard to be the best strategic fit.*
- **Smart home speaker** also stands out given the combination of: 1) focus on high engagement with customers; 2) synergies in driving Apple Music services; 3) currently lagging competitors in the smart home category. *Among targets mentioned in press reports, we find Sonos to be the best strategic fit* due to its differentiated position as a premium home speaker system relative to Amazon Alexa and Google Home, strong loyalty among current consumers, and robust international presence.
- **Video content** is another possibility given the combination of: 1) leverage to rapid growth in content consumption on mobile; 2) an established platform to accelerate Apple's nascent investments in original content; and 3) opportunities for advertising revenues in the future, enhancing Apple's position as an aggregator of content. *We find Netflix as the best strategic fit*, although we appreciate a combination is less likely as Netflix is unlikely to be a seller for a modest premium.

Apple Inc. (AAPL;AAPL US)

FYE Sep	2016A	2017A	2018A	2019E	2020E	2021E
EPS (pro forma) (\$)						
Q1 (Dec)	3.18	3.36	3.89	4.18A	4.73	5.49
Q2 (Mar)	1.90	2.10	2.73	2.32	2.85	3.46
Q3 (Jun)	1.42	1.67	2.34	2.03	2.54	3.03
Q4 (Sep)	1.67	2.07	2.91	2.81	3.33	3.72
FY	8.18	9.19	11.87	11.35	13.45	15.70
Bloomberg EPS FY (\$)	8.27	9.00	11.79	11.62	12.99	14.56

Source: Company data, Bloomberg, J.P. Morgan estimates.

Overweight

AAPL, AAPL US

Price: \$166.52

Price Target: \$228.00

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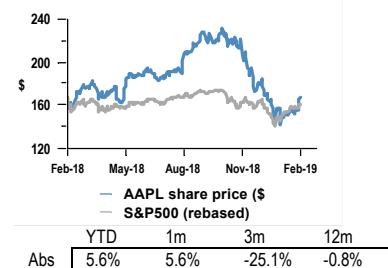
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Price Performance



	YTD	1m	3m	12m
Abs	5.6%	5.6%	-25.1%	-0.8%
Rel	-2.4%	-2.4%	-23.9%	3.3%

Company Data

Price (\$)	166.52
Date Of Price	01-Feb-19
52-week Range (\$)	233.47-142.00
Market Cap (\$ bn)	794.84
Fiscal Year End	Sep
Shares O/S (mn)	4,773
Price Target (\$)	228.00
Price Target End Date	31-Dec-19

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Solid execution on Services; however, need to accelerate Services to offset smartphone headwinds in a more appreciable manner

To date, Apple has performed better than expected on its Services opportunity, including delivering \$40 bn (adjusted for recent accounting change) of revenues in FY18, which is more than 1.5x the \$24 bn reported in FY16 (on old accounting) when management issued a target of doubling Services revenue by FY20. However, despite the success of the firm's Services strategy, the recently accelerating headwinds in the smartphone industry (and iPhones) are likely to drive a need for Apple to accelerate its Services offering and offset the smartphone-related headwinds in a more appreciable manner.

Opportune time to use strong balance sheet to re-focus on Services theme

In recent times, headwinds in the smartphone industry, including a challenging outlook for iPhone volumes in both calendar 2018 and 2019, has diluted investors' focus on the Services opportunity for Apple and riveted investors to iPhone volume fluctuations. Given the broader sell-off in the markets and with most technology companies trading below their recent 52-week highs, we believe valuations for technology companies are more digestible currently relative to mid-2018 and would argue that it is an opportune time for Apple to leverage its strong balance sheet to further consolidate its ecosystem. Apple ended the most recent quarter with \$130 bn of cash on the balance sheet and generates roughly \$45 bn of free cash flow after dividends annually, which effectively puts ~\$175 bn at its disposal without having to end a fiscal year with an increased debt position (in line with its long-term target of being cash neutral).

Use of \$175 bn can buy a lot of growth, although Apple does not have a history of large acquisitions

As shown in Table 1, Apple has a history of making multiple "bolt-on" acquisitions every year, which have largely been focused on bringing hardware technology that the company expects to be crucial to competitive differentiation in-house and better manage its development toward commercialization. In fact, Apple has been very successful with the strategy to-date as many of the applications in use on iPhones today can be associated with bolt-on technology acquisitions of the past (e.g., 3D sensing facial recognition, Siri speech recognition). Despite a track record of multiple acquisitions, the largest acquisition to date for Apple remains Beats Electronics, which was acquired for proceeds of \$3 bn, while typical acquisition sizes are in the hundreds of millions. Apple's track record on acquisitions has made a lot of investors question the willingness of the current management team to explore large acquisitions.

Table 1: Sampling of Apple's Acquisition Strategy

Date	Company	Business	Solution
Oct-18	Dialog Semiconductor	Power management integrated circuits	Battery
Sep-18	Shazam	Music and Image recognition	Music
Mar-18	Texture	Digital magazine subscription service	Books
Nov-17	InVisage	Smartphone Camera Sensors	Camera
Oct-17	PowerbyProxi	Design wireless power solutions	Wireless Charging
Sep-17	Regaind	Photo and facial analysis	Camera
Sep-15	Perceptio	Advanced artificial intelligence systems for smartphones	Camera
Sep-15	VocalIQ	Speech Technology	Siri
Sep-15	Mapsense	Cloud-based mapping virtualization	Maps
Apr-15	Linx	Multi-aperture camera equipment for mobile devices	Camera
Aug-14	Beats Electronics	Subscription music service and audio devices	Music
Jun-14	BookLamp	Personalized book recommendations to readers	Books
Jan-14	SnappyLabs	PhotoApp Developer	Camera
Nov-13	PrimeSense	3D sensor technology	Face ID
Oct-13	Cue	Personal assistant app	Siri
Aug-13	Embark	Mobile Apps for mapping	Maps
Aug-13	Passif Semiconductor	Wireless chip development	Low-power Bluetooth (Battery)
Dec-11	Anobit	Design of flash memory controllers	Flash Memory Controller
Aug-11	C3 Technologies	3D mapping software	Maps

Source: J.P. Morgan.

However, Apple has been open to changing strategic direction in the past

Contrary to popular investor opinion, which questions Apple's willingness to explore opportunities outside its traditional strategy, it is worth underscoring the acquisition of Beats Electronics represented a significant change in strategy. In addition to the \$3 bn purchase price, which was significantly higher than the typical acquisition price, the Beats Electronics acquisition highlighted Apple's appetite for acquiring Service businesses to stimulate growth (e.g., Beats Music) as it aimed to revitalize its floundering music business, that was largely predicated on iTunes, which was facing stiff competition from streaming services, such as Spotify and Pandora. A year after acquiring Beats Music, Apple successfully launched a rebranded music and video streaming service, Apple Music, which has since grown its paid subscriber base at a +70% CAGR to more than ~50 mn by end of FY18. By comparison, Apple's largest competitor, Spotify (covered by JPM Internet analyst, Doug Anmuth), boasts ~90 mn paid subscribers (revenue of ~\$5 bn), which has grown at a +50% CAGR over a similar time period. Interestingly, with the acquisition of Beats Electronics, Apple also showed a change in strategy by illustrating a willingness to maintain the Beats brand image as it relates to its product portfolio of premium headphones and earbuds, which have also been successful to date. To that end, examples of Service businesses that we believe best fit with Apple's strategy include media content delivery platforms, such as Netflix, and gaming platforms, such as Activision and Zynga.

Even hardware acquisitions could prove synergistic to certain Services offerings

As we look at the importance of the Services opportunity for the company, the popular investor perception seems to be that subscription-based software acquisitions represents the greatest strategic priority. However, we do not rule out the possibility of hardware product acquisitions that could drive synergies with certain services offerings and drive accelerated pace of growth. Examples of hardware-based businesses include home platforms, such as Sonos, and health platforms, such as Peloton.

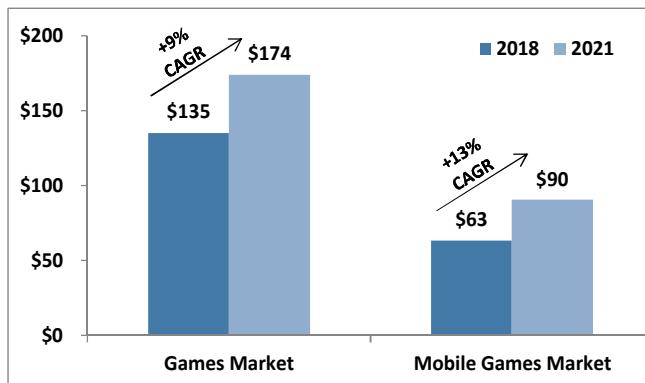
The following section takes a closer look at some of the specific examples we discussed on page 1 and the potential impact on Apple's business drivers.

Video Gaming

The gaming industry could fit strategically in terms of services offering and provide leverage to an industry rapidly moving to the mobile platform

The video gaming industry is in the midst of a physical to digital game transition with consumers increasingly purchasing content and services digitally and engaging with live services including micro-transactions, downloadable content, subscriptions, and Esports. NewZoo estimates that 2.3 bn gamers globally will spend roughly \$135 bn in 2018, including slightly less than half of the spend being on mobile platforms. Additionally, within mobile platforms, 80% of the spend is expected on smartphones, while the remaining comes from a variety of devices including tablets. Looking forward, continuing on the broader trend of growth above the industry, NewZoo expects mobile gaming to grow at a strong CAGR of +13% over the next few years, outperforming the overall gaming industry growth at +9% CAGR.

Figure 1: Global Games Market vs. Global Mobile Games Market
\$ in Billions



Source: Newzoo.

High-end gaming could drive a smartphone replacement cycle and support the iPhone premium through leadership in compute/graphics capabilities

Similar to the experience with the PC market, where gaming as a use case continues to drive a certain section of consumers to look for continuous hardware upgrades, we believe the increasing utilization of mobile devices for gaming can drive a replacement cycle for smartphones. For example, consumers engaged in competitive high-end gaming look for the latest compute and graphics capabilities, which can not only help drive a replacement cycle for iPhones with every launch, but could further support the premium for iPhones if Apple can maintain a leadership in terms of compute/graphics capabilities.

Gaming could fit strategically into Apple's AR/VR leadership

Gaming should offer synergies with Apple's iPhone hardware given well-established leadership that Apple has shown relative to 3D sensing, which would be a key enabler for augmented reality and virtual reality applications. We expect adoption of world-facing 3D sensing on iPhones in 2020, which should stimulate growth in AR/VR applications for smartphones, including on the gaming front.

Streaming of gaming content on mobile could be on the horizon following similar moves in audio and video content over time

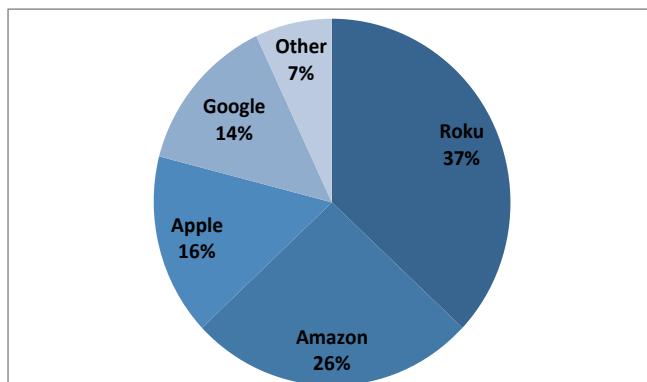
Delivery of media content has visibly transitioned from physical formats to digital formats and, within digital, from downloads to streaming services. Examples include transitions from cassettes/CDs to iTunes downloads to Apple Music streaming; and transition in video content delivery from CDs to Netflix or Hulu streaming — all of which has driven the higher consumption of content on mobile. While today most gaming applications still need memory space on the physical device, we believe streaming games (with minimal time and memory used to download them first) could be on the horizon and would further drive adoption of mobile gaming. Apple could position itself as a first mover among smartphone OEMs in this aspect through the acquisition of gaming service delivery platforms.

Installed base of gaming devices could enable incremental Services growth

An acquisition would not only give Apple access to gaming content to sell directly to consumers, it would also in turn give it access to the installed base of hardware gaming devices capable of streaming content in homes, which Apple could leverage to cross-sell other service offerings, like Apple Music and original video content, in the absence of Apple TV devices in the home. We estimate Apple TV has a fairly small installed base in its primary market, the US, which includes much larger competitors like Roku and Amazon Fire TV Stick. The access to the gaming hardware installed base will address the installed base shortfall that Apple TV currently has relative to market leaders Roku, which currently has one-third of the installed base in the US, relative to around one-sixth for Apple TV.

Figure 2: Streaming Media Player: Brand Share by US Installed Base (FY17)

% of Total



Source: Park Associates.

Activision Blizzard fits strategically on industry leading gaming content, rapid transition to mobile, as well as headroom to leverage growth in mobile gaming

Activision Blizzard (*covered by JPM media analyst Alexia Quadrani*) is a leading game publisher that develops and distributes content and services that can be played on a variety of platforms (e.g., video game console, PC, mobile device). Activision also operates Esports events and produces film/TV content based on its video games. Activision markets and sells its games and services through digital and retail channels; although content is largely available in digital format for consumers to download directly to their platforms. Activision also utilizes its proprietary online gaming service, Blizzard's Battle.net, to distribute most of Blizzard's PC content

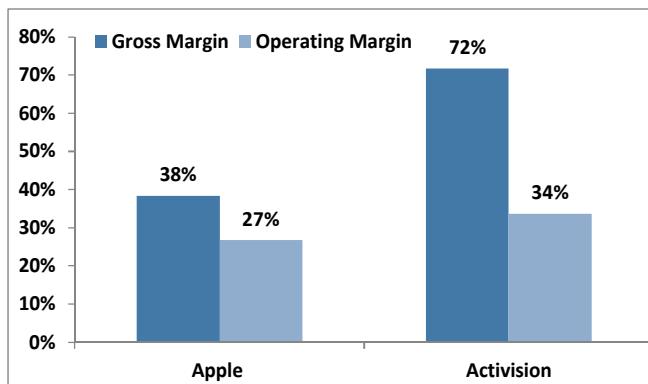
directly to consumers. Activision's mobile and tablet games/services are available through the Apple App Store and Google Play. Activision's digital revenue has increased from \$2.2 bn (46% of total) in 2014 to \$5.4 bn in 2017 (76%).

Additionally, the digital game transition is coinciding with expanding computing capabilities and screen sizes for mobile devices, which is expected to drive consumer gaming habits gradually toward mobile devices. For example, Activision' mobile revenue increased from \$446 mn (9%) in 2014 to \$2.1 bn in 2017 (29%). However, it is important to highlight that Activision has not made any comments on M&A to express willingness to be either a seller or a buyer.

Acquisition could be margin accretive for Apple, excluding acceleration of investments in content development on gaming to fortify its position

Activision reported a revenue growth rate of +14% per annum from 2014 to 2017 (\$4.8 bn to \$7.2 bn), which consensus expects to moderate to +3% over the following three years as the company is forecasted to report revenue of \$8.0 bn by 2020. On a pro-forma basis, a potential acquisition could add more than \$2 bn of services revenues from mobile based platforms. Current full year 2018 consensus expectation for gross margin of 72% and operating margins of 34% would be accretive to Apple's gross and operating margins. The contribution of services, based on consensus revenue expectation of \$7.5 bn in FY18, would increase to 17% of total company revenues relative to 14% prior, and a greater portion of operating earnings.

Figure 3: Apple Margins vs. Activision Margins (FY18)
%



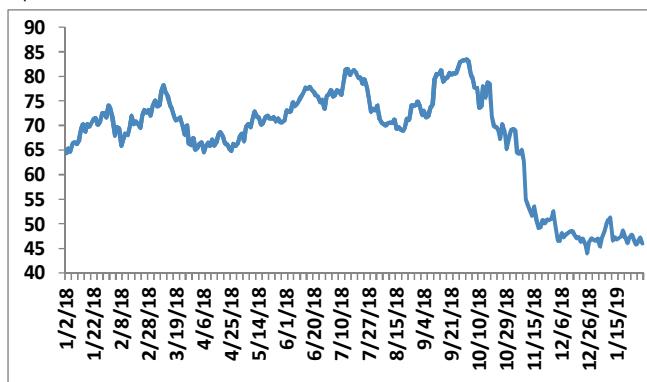
Source: J.P. Morgan estimates, Bloomberg estimates.

Timing could capitalize on Activision's attractive valuation

As shown in Figure 4, shares of Activision have retreated -45% to ~\$46 from their 52-week high (as well as all-time high) of ~\$83 on October 2nd. JPM media analyst, Alexia Quadrani, highlighted in a recent report that investors are now overly focused on the short-term execution and growth of Activision, which is creating an attractive entry point for what remains a compelling long-term story driven by a secular shift to digital, extension of core intellectual property to mobile, an expanding console and player base, and continued innovation in live services (see report [here](#)). If we assume Apple were to purchase Activision for a 20% premium to current prices, it would imply an enterprise value of \$42 bn, of which we expect Apple would use cash on hand to fund.

Figure 4: Activision Share Price Performance

\$ per Share



Source: Bloomberg.

So why not Nintendo?

Given that we are highlighting Activision as a gaming platform that is attractive to investors, we expect an obvious question to be as to why we don't think Apple should acquire Nintendo, as recently speculated in a [Barrons article](#). While we will not rule anything out, our preference for Activision as a strategic fit over Nintendo relates to the opportunity for Apple to acquire a services platform with access to a wide installed base of devices, instead of a services platform that has access to only Nintendo's installed-base of hardware. With recent moves from Apple to allow Apple Music to leverage Amazon Alexa's installed base and Apple TV to leverage Samsung's, LG's and Vizio's installed base of TVs, with stand-alone software offerings, we believe Apple is more focused on leveraging a wider installed base to drive services growth.

We believe Activision Blizzard could be more synergistic relative to EA

While both Activision Blizzard and Electronic Arts have been mentioned as potential targets in press reports, with EA likely mentioned more than Activision, we believe Activision Blizzard might present more synergies over EA Sports because: 1) Activision has a wider genre of games, including Call of Duty, World of Warcraft, Overwatch, and Candy Crush in mobile, relative to EA's focus on the sports genre of video games; 2) Although largely driven by Candy Crush, Activision has a higher contribution of revenues from mobile gaming relative to EA Sports; 3) AR/VR capabilities supplementing mobile gaming should drive greater synergies with Activision's genre of games relative to EA's sports games, in our view; and 4) Activision has a broader portfolio of games that it can potentially offer on mobile platforms in the future, offering opportunity for future growth in mobile gaming.

Smart Home Speaker

Smart Home Speaker category remains an untapped opportunity for Apple in driving high engagement with existing customers

Apple's engagement with a consumer on mobile platforms is high, including solid growth for its portfolio of services which is successfully leveraging the growth in time spent by consumers on their smartphones. However, engagement levels are more mixed in the home. As indicated by an Accenture study in early 2018, use of smart speakers for entertainment is on the rise and cannibalizing time that consumers would have otherwise spent using their smartphones for the same content.

Admittedly, Apple's HomePod has not seen the same success in finding a position in the home as Amazon's Alexa and Google's Home. Competition is fierce and barriers to entry for new entrants stems from high cost of switching a multi-device ecosystem in use by existing customers.

Sonos is best strategic fit with established installed base in the smart home speaker category; acquisition of an established player to lower barriers to entry for Apple into the Home

Sonos is a leading smart speaker manufacturer that develops both proprietary hardware and software. Sonos's solutions include wireless speakers, home theater speakers, components, accessories and software, which enables advanced acoustics, synchronized playback, wireless feature updates, intelligent customization, and smart control via Sonos App/voice. However, it is important to highlight that Sonos has not made any comments on M&A to express willingness to be either a seller or a buyer.

Sonos would give Apple access to high income households to play catch up with Amazon and Google in the home

Amazon and Google have both hit the ground running with the early launches of their respective products, Amazon Alexa (2014) and Google Home (2016), and thus have created a sizeable market share lead relative to competitors, like Apple's HomePod (2018), which we believe is unlikely to be a significant challenger in its current form. Additionally, the typical replacement cycle of 2-3 years for smart speakers is creating a barrier to entry for new entrants into the existing installed base, as switching cost is high for households with multiple smart speakers. We believe the positioning of Sonos as a premium speaker system with software support for multiple services platforms will enable Apple to get into homes that desire a premium experience. Additionally, we estimate that households with premium purchases, such as a Sonos speaker system, are typically high-income households that can afford multiple media content subscriptions, allowing Apple Music to play catch up relative to leading platforms like Spotify.

Sonos looks well positioned to enable a smart home ecosystem relative to competitors

As of September 2018, Sonos had 21 mn products registered globally, including wireless smart speakers (e.g., Play:1, Play:3 and Play:5, Sonos One) and smart home theater speakers (e.g., Playbar, Playbase and Sub), which already include native voice control and support from multiple content platforms like Google Music, Apple Music and Spotify. Additionally, Sonos' proprietary software enables multi-room experience and customization of listening experience, flexible control either through the Sonos app, voice control or even third-party apps, along with advanced acoustics, which Apple has maintained is priority for its own smart speaker, HomePod. However, interestingly, the 21 mn Sonos products were registered across only 7.4 mn households, implying each household owned roughly three Sonos products, which we believe is ahead of competitors, such as Amazon Alexa and Google Home. Thus, we believe Sonos is better positioned relative to competitors to enable a seamless and holistic smart home ecosystem (e.g., smart speaker in every room connected to every "smart device") given the proliferation of multiple speakers on a per home basis.

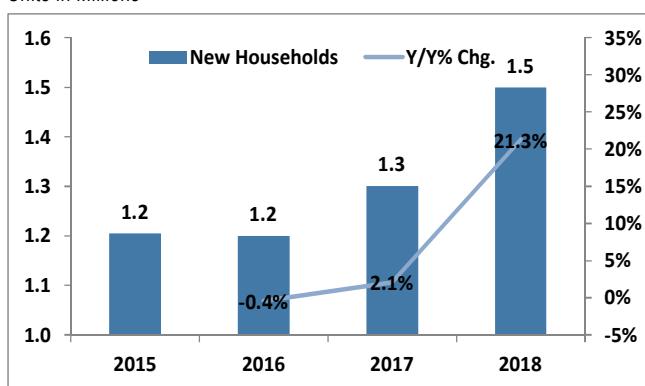
Sonos has a strong loyalty among its installed base, much like Apple products

Based on latest disclosures from Sonos, roughly 62% of the 7.4 mn households had more than one Sonos product, which suggests that consumers owning one of Sonos'

products tend to buy more over time. The number of new households that Sonos has added globally accelerated from 1.2 mn incremental households in 2016 to 1.3 mn in 2017 to 1.5 mn in 2018 (fiscal year ending September). Additionally, around 37% of new product registrations in the latest year were to existing Sonos customers, implying that customers tend to prefer the Sonos ecosystem over competing products.

Figure 5: Sonos' New Household Additions

Units in Millions



Source: Sonos.

Sonos has a strong international presence; another opportunity for Apple

We estimate HomePod sales are currently limited and largely skewed to the US. An acquisition of Sonos would be likely to help Apple diversify its presence outside of the US market into international markets. Sonos sold roughly 5 mn devices in the twelve months ending September 2018, and given that it derives roughly half of its revenues from markets outside the US, we estimate more than 2.5 mn speaker systems are sold outside the US on an annual basis.

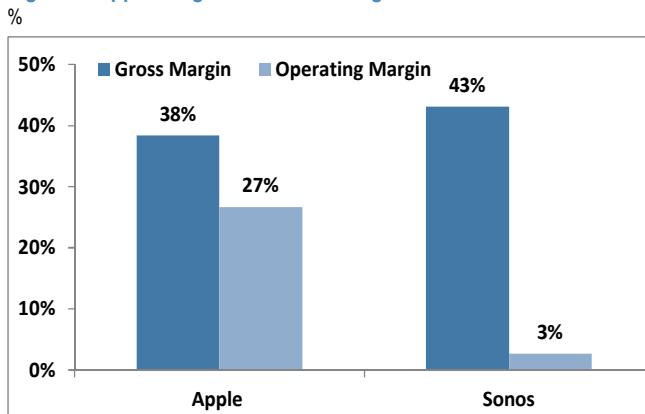
Sonos could be synergistic for Apple's music content and could also give it a position in the home theatre segment in combination with position in video

We believe an acquisition of Sonos would provide synergies for Apple's music business and likely drive a stronger growth trajectory through the integration of the hardware with services. Additionally, Sonos's product portfolio includes smart home theater products, including sound bars, soundbases, subwoofers, and amps, which we believe would give Apple a first mover advantage into the smart home theater segment, which today is unpenetrated by competitors such as Amazon and Google.

An acquisition of Sonos would not be incremental to Services revenue inorganically, but could drive stronger growth for existing Services

Relative to the potential acquisition of Activision discussed above, an acquisition of Sonos would have no immediate Services revenue to contribute to the firm. However, we believe there would be value to Apple's Services business from such an acquisition in the form of enabling stronger growth for various Services offerings, such as Apple Music, and by giving Apple an easier entry into the smart home segment, which the company has struggled to find to date. Sonos's revenues of \$1.1 bn and gross margins of 43% in FY18 are likely to be marginally accretive to Apple. However, Apple's operating margins are likely to be diluted by the acquisition of Sonos.

Figure 6: Apple Margins vs. Sonos Margins

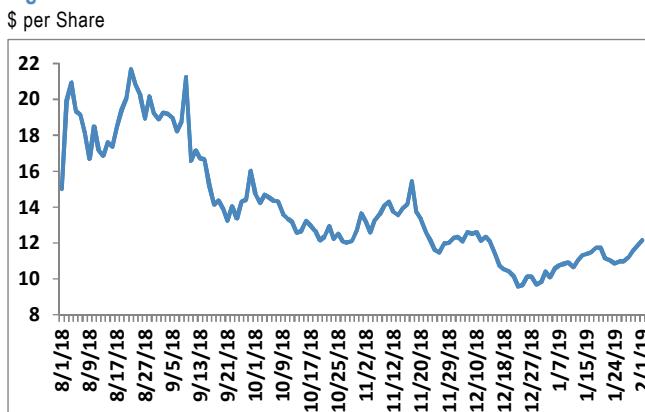


Source: J.P. Morgan estimates, Bloomberg estimates.

Recent share price performance of Sonos since IPO offers easier valuation

We believe the share price performance of Sonos over the past couple of months provides Apple an opportunity to acquire the company at a much easier valuation. As shown in Figure 7, shares of Sonos have retreated -44% to ~\$12 from their 52-week high of ~\$22 on August 22nd or down -19% from its IPO pricing of \$15 on August 2nd. If we assume Apple were to purchase Sonos for a 20% premium to current share prices, it would imply an enterprise value of \$1.3 bn, which is fairly modest relative to the optionality on Apple's balance sheet.

Figure 7: Sonos Share Price Performance



Source: Bloomberg.

Video Content

Video content consumption is growing materially above other forms of content and Apple should position itself better to leverage this growth

As per networking leader, Cisco, 75% of network traffic is driven by video, and by 2022 the same will expand to 82% of all IP traffic. Additionally, nearly half of all devices and connections to the network are expected to be video capable by 2022, driven primarily by video streaming traffic growth in addition to gaming and virtual reality traffic. Success of Apple's service portfolio will be predicated on engagement levels with the consumer and we believe Apple should prioritize gaining greater leverage to video content services.

Synergies of content consumption on mobile with Apple's leadership in mobile

As reported by Ooyala (subsidiary of Australian telecommunications company Telstra focusing on online video platforms and workflow management systems), in the second quarter of 2018, smartphone-only video starts were more than 50% of total for the first time globally, and increase ~10% y/y – the largest increase in a few quarters. In North America particularly, long-form video (more than 20 minutes) time on smartphones was more than 75% of total, while total starts and plays on mobile were in the vicinity of ~50%, implying consumers are not only watching more videos on mobile but also watching longer videos on mobile than before. Similarly strong growth in video consumption on mobile was seen across all geographies. We believe Apple can drive synergies between its leading position in smartphones and the rapid transition of video consumption to mobile to drive stronger services growth.

We think Netflix is best strategic fit on leading position in engagement level as well as original content, differentiating itself from pure aggregators of content

Netflix's success in the media content segment, including with original content, which has also been a focus for Apple of late, has made a potential Apple-Netflix combination the most talked about amongst investors relative to the other potential targets discussed in this report. Netflix (*covered by JPM internet analyst Doug Anmuth*) is a leading online subscription and streaming service offering movies and TV series commercial-free, and the firm estimates it now accounts for almost 10% of the total TV viewing time for US consumers — placing it in a solid position in an otherwise fragmented market. More importantly, while Netflix's streaming content is bucketed into two categories: 1) Netflix Originals, which are either self-produced (e.g., *Stranger Things*) or exclusively licensed (e.g. MRC's *House of Cards*); and 2) "second run" movies and TV shows (e.g., Showtime's *Shameless*), the firm is increasingly transitioning toward leveraging more Netflix Originals (~30% of content spend is on Originals and growing). Netflix Originals include both self-produced, as it enables lower costs (no studio middle-man), ownership of IP (monetization optionality), and greater rights flexibility, as well as exclusively licensed, as it enables a differentiated service relative to competition.

Competitive marketplace will make it tough to scale smaller media companies

While we appreciate that Netflix is an unlikely seller for a modest premium and the transformational nature of the acquisition makes it less realistic, we believe there is value to acquiring the most successful player in this space, which is hard to replicate with a smaller player in this market. Video streaming, including original video content, is a highly competitive market with established traditional media houses as well new entrants fighting aggressively for incremental subscribers, which is likely to make it difficult to scale any new platform to compete effectively.

The combination would accelerate Apple's original content plans

Apple has recently been more visible with its plans to invest in original content, including roughly a billion dollars each year, which will allow it to differentiate itself relative to other streaming services. While we do expect Apple to ramp up investments in original content over time beyond the ~\$1 bn, we would expect it to be a slow ramp. A combination with a company like Netflix would accelerate Apple's progression toward investment in original content, including access to talent with expertise in developing original content. In comparison to Apple's \$1 bn investment level, JPM internet analyst Doug Anmuth expects Netflix to invest \$14

bn in 2019 (“cash spend”) and Amazon likely \$5 bn+. The focus on original content is driven by the need to differentiate content in an otherwise highly competitive marketplace with most “second run” content available on multiple streaming platforms at the same time.

Apple could enhance its position as an aggregator of content in addition to offering original content

Apple has already made changes to its existing platform by starting to provide original content in addition to the external content it has for purchase. Additionally, Apple has started to position itself as an aggregator of content on Apple TV, which provides a single point of access into multiple subscriptions (Netflix, Amazon Prime Video, etc.). An acquisition of Netflix could help Apple drive consumers faster to their gateway app, which is serving as an aggregator of content and multiple subscriptions, and could enhance the opportunity around potential advertising revenues in the future.

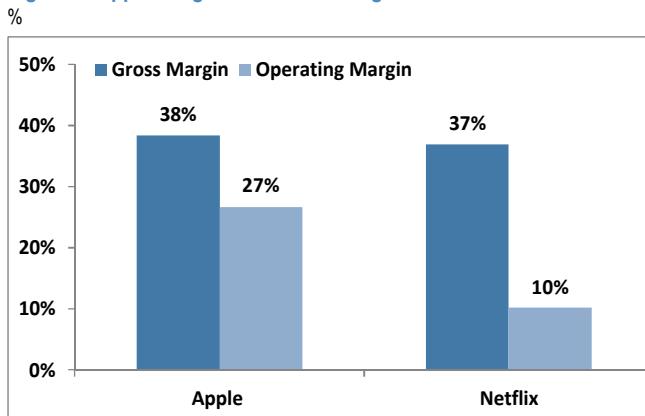
Netflix could be a conduit for Apple to access more than 139 mn on-demand content consumers globally

Netflix is estimated to have reached more than 139 mn paid subscribers globally by end of 2018. An acquisition of Netflix by Apple could be strategic in giving Apple access to the 139 mn+ devices that Netflix subscribers are using to stream, including a recent uptick in Netflix content being consumed on mobile devices. With media/video consumption expected to increasingly move to mobile devices, Apple could fortify its ecosystem with the acquisition of one of the largest on-demand content providers.

That said, an acquisition of Netflix is the least likely given its transformational impact on Apple's balance sheet

A combination with Netflix could increase pro-forma Apple revenues to \$280 bn, with Services accounting for 20% of revenues on a pro-forma basis vs. 14% currently. Additionally, Netflix’s consensus revenue CAGR of +29% by 2020 implies an acquisition could be accretive to the growth rate for both Apple and its Services group. However, if we assume Apple were to purchase Netflix for a 20% premium (Netflix is unlikely to be a seller, in our view, and might command a much higher premium), it would imply an enterprise value of \$189 bn (Netflix has a net debt position of ~\$7 bn), implying that Apple would likely end the year with a neutral cash position, which is a long-term target for the company (assuming the termination of share repurchases in the year of the acquisition).

Figure 8: Apple Margins vs. Netflix Margins



Source: J.P. Morgan estimates, Bloomberg estimates.

We see other speculated potential targets as less likely

Press reports have discussed a wide range of traditional media companies, including Sony Pictures, as potential targets. We believe Netflix is a better strategic fit relative to other speculated targets because: 1) Netflix would further support Apple's intent to act as an aggregator of content relative to traditional media companies; 2) Netflix's subscription revenue model is a better fit for Apple's strategic direction with services revenues, and it is challenging to transition the revenue models of the traditional media companies to subscription-based models; and 3) While Netflix is a less likely seller, there are even greater barriers to acquire its direct competitors, including Hulu and Amazon Prime.

Appendix I: Press Reports on Targets

Table 2: Potential Acquisition Targets Speculated in Press Reports

Industry	Targets Mentioned	Source
Automotive	Tesla	fortune.com/2018/01/18/apple-cash-acquire-netflix-tesla/ www.forbes.com/sites/steveandriole/2018/12/11/apples-new-revenue-streams-are-everything-about-timing-risk/#30e1ac541ce0
Automotive	SAIC	
Digital Media	Netflix	fortune.com/2018/01/18/apple-cash-acquire-netflix-tesla/
Health & Fitness	Peloton	fortune.com/2018/01/18/apple-cash-acquire-netflix-tesla/
Health & Fitness	Fitbit	investorplace.com/2018/01/3-of-the-top-apple-inc-aapl-acquisition-targets/
Semis	MultiPhy	fortune.com/2018/01/18/apple-cash-acquire-netflix-tesla/
Connectivity	Valens	fortune.com/2018/01/18/apple-cash-acquire-netflix-tesla/
Payments	PayPal	www.imd.org/research-knowledge/articles/its-time-for-apple-to-buy-these-tech-giants/
Video Gaming	Activision Blizzard	www.imd.org/research-knowledge/articles/its-time-for-apple-to-buy-these-tech-giants/ www.forbes.com/sites/steveandriole/2018/12/11/apples-new-revenue-streams-are-everything-about-timing-risk/#143a392d1ce0
Video Gaming	Electronic Arts	
Video	Nintendo	https://www.barrons.com/articles/two-ideas-to-fix-apple-51547484015
Recording	GoPro	investorplace.com/2018/01/3-of-the-top-apple-inc-aapl-acquisition-targets/
Media	Sony Pictures	www.investors.com/news/technology/click/2019-predictions-amazon-apple-snap-tesla/
Media	Pandora	www.imd.org/research-knowledge/articles/its-time-for-apple-to-buy-these-tech-giants/ www.forbes.com/sites/steveandriole/2018/12/11/apples-new-revenue-streams-are-everything-about-timing-risk/#143a392d1ce0
Media	Spotify	
Media	Sonos	observer.com/2017/01/apple-should-acquire-sonos/
Internet	Twitter	investorplace.com/2018/01/3-of-the-top-apple-inc-aapl-acquisition-targets/ www.forbes.com/sites/steveandriole/2018/12/11/apples-new-revenue-streams-are-everything-about-timing-risk/#143a392d1ce0
Internet	eBay	

Source: JP Morgan.

Investment Thesis, Valuation and Risks

Apple (*Overweight; Price Target: \$228.00*)

Investment Thesis

We rate AAPL shares Overweight given our favorable outlook on iPhone and Services revenues relative to investor expectations, catalysts to accelerate revenue growth, and upside risk to our base forecast for +14% earnings CAGR. We see upside on several aspects of the business as well as financials that remain underappreciated by investors, namely the transformation of the company to Services, growth in the installed base, technology leadership, and optionality around capital deployment — all of which together leads us to expect double digit earnings growth and a modest re-rating for the shares.

Valuation

We maintain our December 2019 price target of \$228, which is predicated on a 17.1x blended P/E multiple, which implies a re-rating from NTM trading multiple of 14.0x. Our blended P/E is arrived at based on a SOTP methodology using 11.0x P/E for iPhones, 10.0x for Mac and iPad devices, 25x for Services, and 20x for Apple Watch, and 10.0x for Other Products.

Key assumptions used in formulating the price target are:

- **iPhone:** We use an 11.0x P/E multiple for our iPhone earnings estimate in calendar 2020, modest discount to the 14.0x multiple that industry leader Nokia, traded at from 2005 to 2010 when the firm had a leadership position in feature phones.
- **Mac devices:** P/E multiple of 10.0x, modest premium to the 9.5x NTM P/E multiple for competitor HPQ, largely subject to similar industry dynamics, although with higher profitability.
- **iPad devices:** P/E multiple of 10.0x, in line with the multiple we assign for Mac devices as growth opportunities are limited for both notebooks as well as tablets. Additionally, we believe increasing consumption of content on smartphones is likely to substitute purchases of laptops/notebooks as well as tablets in the future.
- **Services:** P/E multiple of 25.0x on the Services segment, in line with the average trading multiple for a peer group of luxury/retail companies (Costco, Estée Lauder and Home Depot), which are leaders in their respective markets and derive a stickiness for product sales through customer loyalty in the form of either membership programs or brand value. We believe the subscription nature of Apple's Services segment, with high visibility of revenue and earnings, warrants it being valued in line with the leading luxury/retail companies.
- **Apple Watch:** P/E multiple of 20x, modest discount to 25.0x target multiple we use for the Services group, on account of lower margins and cyclical growth outlook tied to product cycle relative to Services.
- **Other Products:** P/E multiple of 10.0x, in line with legacy hardware devices like iPad, and Mac.

Table 3: AAPL P/E Based Price Target Analysis

\$ in millions, except per share amounts

	NTM Qtrs 1-4	CY20E
JPM Net Income	53,093	58,158
JPM EPS	\$11.89	\$14.22
P/E Multiple	14.0x	
JPM P/E Multiple		17.1x
Total Equity Value	794,842	991,601
Average Diluted Share Count	4,773.3	4,346.9
Implied Share Price	\$166.5	\$228.0
Current Value per Share	\$166.5	\$166.5
Upside vs. Current		37%
<u>Memo:</u>		
(-) Net Cash/(Debt)	96,888	77,504
Enterprise Value	697,954	914,097
JPM EBITDA	73,798	80,524
<i>Implied EV/EBITDA</i>	<i>9.5x</i>	<i>11.4x</i>

Source: J.P. Morgan estimates.

Risks to Rating and Price Target

Industry Downside Risks

Deceleration or contraction in the handset and smartphone market could be faster than expected

Economic conditions or shifting consumer demand could cause greater-than-expected deceleration or contraction in the handset and smartphone markets. This would negatively impact Apple's prospects for growth, and the shares may fail to achieve our target price as a result.

Increase in competitive pressures in international markets

Apple is increasingly participating in international markets, such as China and India, where local players, which are better situated, could leverage their position and pull on levers such as pricing to make the market more competitive. In addition, tariffs enacted by local governments may further hurt Apple's ability to effectively compete in international markets.

Company-Specific Downside Risks

Investment in new business strategies and acquisitions could be fruitless

Apple has historically invested in new business strategies and acquisitions. As such, success on these investments has low visibility at this time and could lead to greater-than-expected liabilities and expense. Additionally, new investments could have a negative impact on current operations by distracting management.

Key man risk around departure of chief executive officer

While risks related to departure of management executives appear considerably lower relative to in the past, we believe the execution on strategic priorities under

CEO Tim Cook's leadership does still present modest risk to the share price, although we see a strong group of executives to support business performance without disruptions.

Litigation with Qualcomm could drive unexpected liabilities

As part of risk mitigation from the ongoing litigation with Qualcomm, Apple has provisioned what management believes could be worst-case payments to Qualcomm in the event of an adverse judgement. However, less favorable outcomes with greater damages awarded to Qualcomm could be a liability for Apple beyond the provisions, and drive downside to our price target.

Table 4: AAPL Summary Table

\$ mns

	1Q - December			2Q - March			3Q - June			4Q- September			Annual				
	2017	2018	2019	2017	2018	2019E	2017	2018	2019E	2017	2018	2019E	2017	2018	2019E	2020E	2021E
Revenue	78,351	88,293	84,310	52,896	61,137	56,677	45,408	53,265	51,720	52,579	62,900	62,287	229,234	265,595	254,993	270,226	288,963
% chg y/y	4.0%	12.7%	-4.5%	4.6%	15.6%	-7.3%	7.2%	17.3%	-2.9%	12.2%	19.6%	-1.0%	6.6%	15.9%	-4.0%	6.0%	6.9%
Cost of Sales	48,175	54,381	52,279	32,305	37,715	35,402	27,920	32,844	32,242	32,648	38,816	38,792	141,048	163,756	158,716	167,342	178,489
SG&A	3,946	4,231	4,783	3,718	4,150	4,704	3,783	4,108	4,603	3,814	4,216	4,672	15,261	16,705	18,762	18,587	19,998
as % of sales	5.0%	4.8%	5.7%	7.0%	6.8%	8.3%	8.3%	7.7%	8.9%	7.3%	6.7%	7.5%	6.7%	6.3%	7.4%	6.9%	6.9%
R&D	2,871	3,407	3,902	2,776	3,378	3,826	2,937	3,701	4,034	2,997	3,750	4,139	11,581	14,236	15,901	16,966	18,250
as % of sales	3.7%	3.9%	4.6%	5.2%	5.5%	6.8%	6.5%	6.9%	7.8%	5.7%	6.0%	6.6%	5.1%	5.4%	6.2%	6.3%	6.3%
Operating Income (COI)	23,359	26,274	23,346	14,097	15,894	12,744	10,768	12,612	10,840	13,120	16,118	14,684	61,344	70,898	61,615	67,330	72,226
operating margin	29.8%	29.8%	27.7%	26.7%	26.0%	22.5%	23.7%	23.7%	21.0%	25.0%	25.6%	23.6%	26.8%	26.7%	24.2%	24.9%	25.0%
bp chg y/y	-155 bp	-6 bp	-207 bp	-102 bp	-65 bp	-351 bp	-14 bp	-4 bp	-272 bp	-15 bp	67 bp	-205 bp	-89 bp	-7 bp	-253 bp	75 bp	8 bp
Other income/(expense)	821	756	560	587	274	300	540	672	300	797	303	300	2,745	2,005	1,460	1,100	1,100
Pre-tax Income	24,180	27,030	23,906	14,684	16,168	13,044	11,308	13,284	11,140	13,917	16,421	14,984	64,089	72,903	63,075	68,430	73,326
Income Tax	6,289	6,965	3,941	3,655	2,346	2,205	2,591	1,765	1,883	3,203	2,296	2,532	15,738	13,372	10,561	11,633	12,355
tax rate %	26.0%	25.8%	16.5%	24.9%	14.5%	16.9%	22.9%	13.3%	16.9%	23.0%	14.0%	16.9%	24.6%	18.3%	16.7%	17.0%	16.9%
Net Income	17,891	20,065	19,965	11,029	13,822	10,840	8,717	11,519	9,257	10,714	14,125	12,452	48,351	59,531	52,514	56,797	60,971
Diluted EPS	\$3.36	\$3.89	\$4.18	\$2.10	\$2.73	\$2.32	\$1.67	\$2.34	\$2.03	\$2.07	\$2.91	\$2.81	\$9.19	\$11.87	\$11.35	\$13.45	\$15.70
Diluted Shares (avg.)	5,328	5,158	4,773	5,262	5,068	4,673	5,233	4,927	4,550	5,184	4,848	4,432	5,263	5,016	4,628	4,224	3,883
EBITDA ex-equity income	26,346	29,019	26,741	16,429	18,633	15,352	13,122	15,277	13,581	15,604	18,872	17,612	71,501	81,801	73,286	78,752	84,448
% chg y/y	-0.9%	10.1%	-7.9%	-0.2%	13.4%	-17.6%	3.9%	16.4%	-11.1%	9.1%	20.9%	-6.7%	2.2%	14.4%	-10.4%	7.5%	7.2%
EBITDA margin	33.6%	32.9%	31.7%	31.1%	30.5%	27.1%	28.9%	28.7%	26.3%	29.7%	30.0%	28.3%	31.2%	30.8%	28.7%	29.1%	29.2%
bp chg y/y	-166 bp	-76 bp	-115 bp	-151 bp	-58 bp	-339 bp	-92 bp	-22 bp	-242 bp	-86 bp	33 bp	-173 bp	-134 bp	-39 bp	-206 bp	40 bp	8 bp
Cash	246,090	285,097	245,035	256,841	267,226	225,166	261,516	243,743	211,618	268,895	237,100	210,290	268,895	237,100	210,290	191,156	172,551
Debt	87,549	122,400	114,730	98,522	121,840	114,730	108,339	114,600	114,730	115,680	114,483	114,730	115,680	114,483	114,730	114,730	114,730
Gross Leverage (ttm)	1.3x	1.7x	1.4x	1.4x	1.6x	1.5x	1.5x	1.5x	1.5x	1.6x	0.9x	1.6x	1.6x	1.4x	1.6x	1.5x	1.4x
Net Debt	(158,541)	(162,697)	(130,305)	(158,319)	(145,386)	(110,436)	(153,177)	(129,143)	(96,888)	(153,215)	(122,617)	(95,560)	(153,215)	(122,617)	(95,560)	(76,426)	(57,821)
Net Leverage (ttm)	-2.3x	-2.2x	-1.6x	-2.3x	-1.9x	-1.4x	-2.2x	-1.6x	-1.3x	-2.1x	-1.0x	-1.3x	-2.1x	-1.5x	-1.3x	-1.0x	-0.7x
Operating Cash Flow	27,056	28,293	26,690	12,523	15,130	6,916	8,363	14,488	13,075	15,656	19,523	25,526	63,598	77,434	72,207	77,935	78,309
Capital Expenditures	(3,334)	(2,810)	(3,355)	(2,975)	(4,195)	(3,401)	(2,277)	(3,267)	(3,103)	(3,865)	(3,041)	(3,426)	(12,451)	(13,313)	(13,285)	(13,649)	(13,819)
Free Cash Flow	23,722	25,483	23,335	9,548	10,935	3,515	6,086	11,221	9,972	11,791	16,482	22,100	51,147	64,121	58,922	64,286	64,490
Share repurchases	(10,851)	(10,095)	(8,796)	(7,161)	(22,756)	(20,000)	(7,093)	(20,783)	(20,000)	(7,795)	(19,104)	(20,000)	(32,900)	(72,738)	(68,796)	(70,000)	(70,000)

Source: Company reports and J.P. Morgan estimates

Apple: Summary of Financials

Income Statement - Annual						Income Statement - Quarterly					
	FY17A	FY18A	FY19E	FY20E	FY21E		1Q19A	2Q19E	3Q19E	4Q19E	
Revenue	229,234	265,595	254,993	270,226	288,963	Revenue	84,310A	56,677	51,720	62,287	
COGS	(141,048)	(163,756)	(158,716)	(167,342)	(178,489)	COGS	(52,279)A	(35,402)	(32,242)	(38,792)	
Gross profit	88,186	101,839	96,278	102,884	110,474	Gross profit	32,031A	21,274	19,477	23,495	
SG&A	(15,261)	(16,705)	(18,762)	(18,587)	(19,998)	SG&A	(4,783)A	(4,704)	(4,603)	(4,672)	
Adj. EBITDA	71,501	81,801	73,286	78,752	84,448	Adj. EBITDA	26,741A	15,352	13,581	17,612	
D&A	(10,157)	(10,903)	(11,671)	(11,422)	(12,222)	D&A	(3,395)A	(2,607)	(2,741)	(2,927)	
Adj. EBIT	61,344	70,898	61,615	67,330	72,226	Adj. EBIT	23,346A	12,744	10,840	14,684	
Net Interest	-	-	-	-	-	Net Interest	-	-	-	-	
Adj. PBT	64,089	72,903	63,075	68,430	73,326	Adj. PBT	23,906A	13,044	11,140	14,984	
Tax	(15,738)	(13,372)	(10,561)	(11,633)	(12,355)	Tax	(3,941)A	(2,205)	(1,883)	(2,532)	
Minority Interest	-	-	-	-	-	Minority Interest	-	-	-	-	
Adj. Net Income	48,351	59,531	52,514	56,797	60,971	Adj. Net Income	19,965A	10,840	9,257	12,452	
Reported EPS	9.19	11.87	11.35	13.45	15.70	Reported EPS	4.18A	2.32	2.03	2.81	
Adj. EPS	9.19	11.87	11.35	13.45	15.70	Adj. EPS	4.18A	2.32	2.03	2.81	
DPS	-	-	-	-	-	DPS	-	-	-	-	
Payout ratio	-	-	-	-	-	Payout ratio	-	-	-	-	
Shares outstanding	5,263	5,016	4,628	4,224	3,883	Shares outstanding	4,773A	4,673	4,550	4,432	
Balance Sheet & Cash Flow Statement						Ratio Analysis					
	FY17A	FY18A	FY19E	FY20E	FY21E		FY17A	FY18A	FY19E	FY20E	FY21E
Cash and cash equivalents	20,289	25,913	20,000	20,000	20,000	Gross margin	38.5%	38.3%	37.8%	38.1%	38.2%
Accounts receivable	17,874	23,186	24,223	23,828	22,989	EBITDA margin	31.2%	30.8%	28.7%	29.1%	29.2%
Inventories	4,855	3,956	6,896	7,996	8,646	EBIT margin	26.8%	26.7%	24.2%	24.9%	25.0%
Other current assets	85,627	78,284	72,992	72,992	72,992	Net profit margin	21.1%	22.4%	20.6%	21.0%	21.1%
Current assets	128,645	131,339	124,111	124,817	124,627	ROE	36.9%	49.4%	56.1%	85.0%	143.7%
PP&E	33,783	41,304	41,251	43,478	45,075	ROA	13.9%	16.1%	14.7%	16.7%	18.8%
LT investments	194,714	170,799	148,634	129,500	110,895	ROCE	19.9%	24.6%	24.6%	30.8%	38.2%
Other non current assets	18,177	22,283	34,686	34,686	34,686	SG&A/Sales	6.7%	6.3%	7.4%	6.9%	6.9%
Total assets	375,319	365,725	348,682	332,481	315,283	Net debt/equity	71.2%	82.7%	118.3%	177.1%	302.1%
Short term borrowings	18,473	20,748	21,741	21,741	21,741	P/E (x)	18.1	14.0	14.7	12.4	10.6
Payables	49,049	55,888	53,878	59,973	63,705	P/BV (x)	6.5	7.8	9.6	13.1	20.6
Other short term liabilities	33,292	40,230	45,410	49,737	50,931	EV/EBITDA (x)	9.0	7.8	8.8	8.1	7.6
Current liabilities	100,814	116,866	121,029	131,451	136,377	Dividend Yield	-	-	-	-	-
Long-term debt	97,207	93,735	92,989	92,989	92,989	Sales/Assets (x)	0.7	0.7	0.7	0.8	0.9
Other long term liabilities	43,251	47,977	54,555	54,555	54,555	Interest cover (x)	-	-	-	-	-
Total liabilities	241,272	258,578	268,573	278,995	283,921	Operating leverage	47.8%	98.2%	328.0%	155.3%	104.9%
Shareholders' equity	134,047	107,147	80,109	53,486	31,362						
Minority interests	-	-	-	-	-						
Total liabilities & equity	375,319	365,725	348,682	332,481	315,283						
BVPS	25.47	21.36	17.31	12.66	8.08	Revenue y/y Growth	6.6%	15.9%	(4.0%)	6.0%	6.9%
y/y Growth	9.6%	(16.1%)	(19.0%)	(26.8%)	(36.2%)	EBITDA y/y Growth	2.2%	14.4%	(10.4%)	7.5%	7.2%
Net debt/(cash)	95,391	88,570	94,730	94,730	94,730	Tax rate	24.6%	18.3%	16.7%	17.0%	16.9%
Cash flow from operating activities	63,598	77,434	72,207	77,935	78,309	Adj. Net Income y/y Growth	7.1%	23.1%	(11.8%)	8.2%	7.3%
o/w Depreciation & amortization	10,157	10,903	11,671	11,422	12,222	EPS y/y Growth	12.3%	29.2%	(4.4%)	18.5%	16.8%
o/w Changes in working capital	(5,550)	34,694	6,464	9,717	5,116	DPS y/y Growth	-	-	-	-	-
Cash flow from investing activities	(46,446)	16,066	(4,086)	(13,649)	(13,819)						
o/w Capital expenditure	(12,451)	(13,313)	(13,285)	(13,649)	(13,819)						
as % of sales	5.4%	5.0%	5.2%	5.1%	4.8%						
Cash flow from financing activities	(17,347)	(87,876)	(84,008)	(83,421)	(83,094)						
o/w Dividends paid	(12,769)	(13,712)	(13,900)	(13,421)	(13,094)						
o/w Net debt issued/(repaid)	29,014	432	6	0	0						
Net change in cash	(195)	5,624	(15,887)	(19,135)	(18,604)						
Adj. Free cash flow to firm	51,147	64,121	58,922	64,286	64,490						
y/y Growth	(3.7%)	25.4%	(8.1%)	9.1%	0.3%						

Source: Company reports and J.P. Morgan estimates.

Note: \$ in millions (except per-share data). Fiscal year ends Sep. o/w - out of which

Other Companies Discussed in This Report (all prices in this report as of market close on 01 February 2019)

Activision Blizzard (ATVI/\$46.01/Overweight), Netflix Inc (NFLX/\$339.85/Overweight)

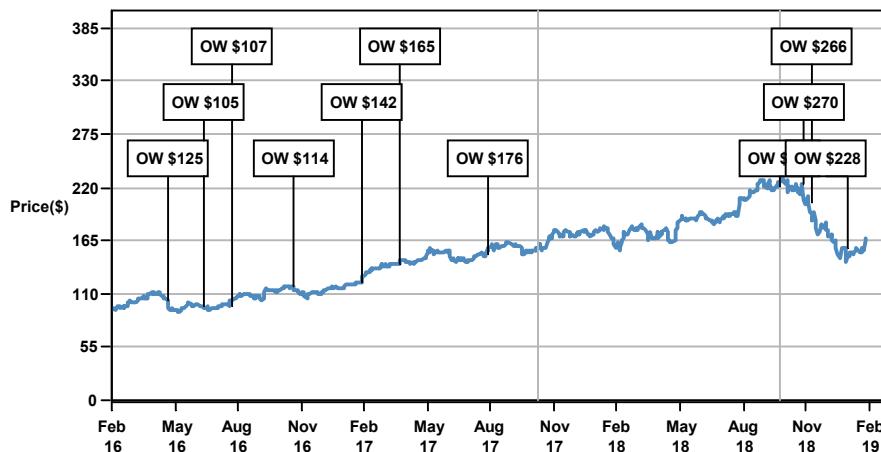
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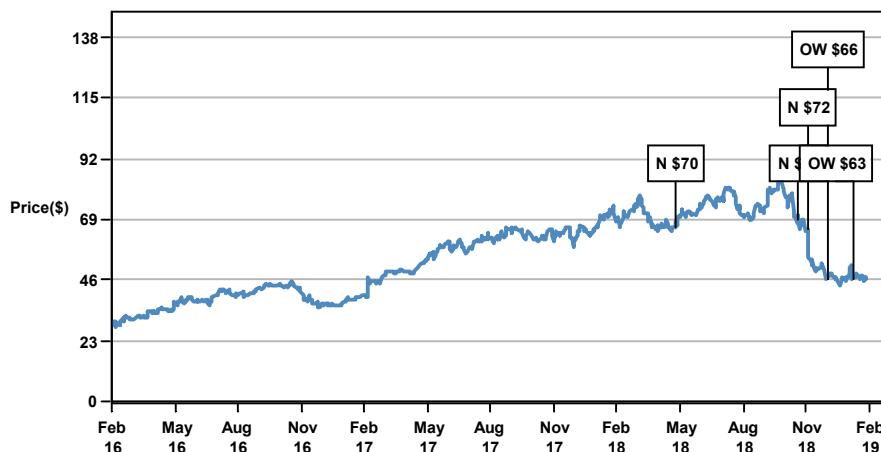
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Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
 Initiated coverage May 01, 1999. All share prices are as of market close on the previous business day. Break in coverage Oct 13, 2017 - Se

Activision Blizzard (ATVI, ATVI US) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
 Initiated coverage May 01, 2018. All share prices are as of market close on the previous business day.

Netflix Inc (NFLX, NFLX US) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
 Initiated coverage Aug 13, 2004. All share prices are as of market close on the previous business day.

Date	Rating	Share Price (\$)	Price Target (\$)
07-Apr-16	OW	104.83	139.00
19-Apr-16	OW	108.40	126.00
12-Jul-16	OW	94.67	125.00
19-Jul-16	OW	98.81	116.00
27-Sep-16	OW	94.56	125.00
14-Oct-16	OW	100.23	122.00
18-Oct-16	OW	99.80	140.00
19-Jan-17	OW	133.26	175.00
18-Apr-17	OW	147.25	178.00
18-Jul-17	OW	161.70	210.00
13-Oct-17	OW	195.86	225.00
17-Oct-17	OW	202.68	242.00
23-Jan-18	OW	227.58	285.00
10-Apr-18	OW	289.93	328.00
17-Apr-18	OW	307.78	385.00
17-Jul-18	OW	400.48	415.00
17-Oct-18	OW	346.40	450.00
14-Jan-19	OW	337.59	425.00
18-Jan-19	OW	353.19	435.00

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January 31, 2019 05:49 PM GMT

Apple, Inc. | North America

10-Q Highlights Lower Capex and Hedge Gains Boosting Gross Margin

↳ Stock Rating Overweight	↳ Industry View In-Line	↳ Price Target \$197.00
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Apple's 10-Q shows reduced capex guidance in FY19 and normalized F1Q gross margin decline of 14Obps Y/Y when backing out the benefit from hedges & slightly lower warranty accruals, lower than the 40bps gross margin decline on a reported basis.

FY19 capex reduced by \$2B. Apple expects to incur \$12B capex in FY19, down from \$14B guided 3 months ago and \$17B reported in FY18. Apple initially highlighted lower capex Y/Y was partially attributable to 1) completing the multi-year build out of Apple's new headquarters and 2) further leverage of past tooling investments. The incrementally lower capex most likely is a function of lower tooling investments in order to align with demand in the longer replacement cycle environment, in our view.

December quarter gross margin compression was greater Y/Y than reported after normalizing for hedge gains and warranty accruals. Normalized gross margin shows a 14Obps decline Y/Y compared to a 40bps decline in reported gross margin after backing out Y/Y tailwinds in (1) benefits from FX hedges and non-designated derivatives and (2) lower warranty accruals. Normalized gross margin of 37.1% is below reported gross margin of 38.0%. First, FX hedges were a 40bps benefit to reported gross margin, greater than the 10bps headwind in the year ago reported gross margin. Second, non-designated derivatives were a 40bps benefit to reported gross margin, greater than the 10bps benefit a year ago. Lastly, lower warranty accruals was a 10bps benefit to reported gross margin, versus no impact a year ago. We calculate the impact of warranty expenses by comparing reported warranty expense to normalized expense based on three year average ratios to hardware revenue ([Exhibit 1](#)).

Non-vendor trade receivables plus inventory declined Y/Y for the first time in nearly two and half years. Inventory grew 13% Y/Y in the December quarter and increased from down 19% Y/Y in the prior quarter. Sequentially inventory increased 26% Q/Q, greater than historical seasonality of +10%. Despite the increase, inventory is still down significantly from the nearly \$8B high in March 2018. Net, we believe large memory pre-buys have largely been worked through which should allow falling NAND prices to benefit future gross margin. (On a broader basis, our semis team remains negative on the memory market as weaker

MORGAN STANLEY & CO. LLC

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Apple, Inc. (AAPL.O, AAPL US)

IT Hardware / United States of America

Stock Rating	Overweight
Industry View	In-Line
Price target	\$197.00
Shr price, close (Jan 30, 2019)	\$165.25
Mkt cap, curr (mm)	\$787,778
52-Week Range	\$233.47-142.00
Fiscal Year Ending	09/18 09/19e 09/20e 09/21e
ModelWare EPS (\$)	11.91 11.50 13.06 16.23
Prior ModelWare EPS (\$)	- - - -
P/E	19.0 14.4 12.7 10.2
Consensus EPS (\$) ^S	11.79 11.59 12.94 14.76
Div yld (%)	1.2 1.9 2.1 2.3

Unless otherwise noted, all metrics are based on Morgan Stanley ModelWare framework

^S = Consensus data is provided by Thomson Reuters Estimates

e = Morgan Stanley Research estimates

QUARTERLY MODELWARE EPS (\$)

Quarter	2018	2019e	2019e	2020e	2020e
		Prior	Current	Prior	Current
Q1	3.89	-	4.18a	-	4.52
Q2	2.73	-	2.37	-	2.87
Q3	2.34	-	2.14	-	2.52
Q4	2.91	-	2.77	-	3.09

a = Morgan Stanley Research estimates, a = Actual Company reported data

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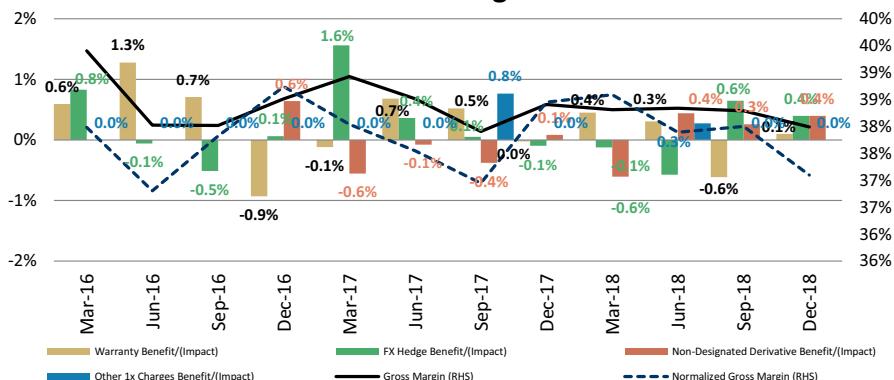
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demand across every vertical serves to exacerbate the issue of excess supply and further weigh on pricing). However, even with beneficial hedging gains noted above, currency will offset the NAND tailwind in the March quarter where Apple guided to a 60bps currency headwind. Additionally, seasonal loss of leverage and repricing of iPhones in certain regions to roll back the impact of FX poses a headwind to gross margin. Vendor non-trade receivables decelerated to down 31% Y/Y from up 45% last quarter and more than offset higher inventory. Sequentially vendor non-trade receivables declined 27% Q/Q, well below historical seasonality of +25%. Net, vendor non-trade receivables and inventory combined declined 25% Y/Y from +30% Y/Y in each of the prior three quarters. This reflects the first material decline in non-vendor trade receivables plus inventory in roughly 2.5 years, however we do note the December quarter faced a significantly tougher comparable ([Exhibit 2](#)).

Exhibits

Exhibit 1: Normalized Gross Margin Below Reported with Greater Y/Y Contraction vs. on a Reported Basis

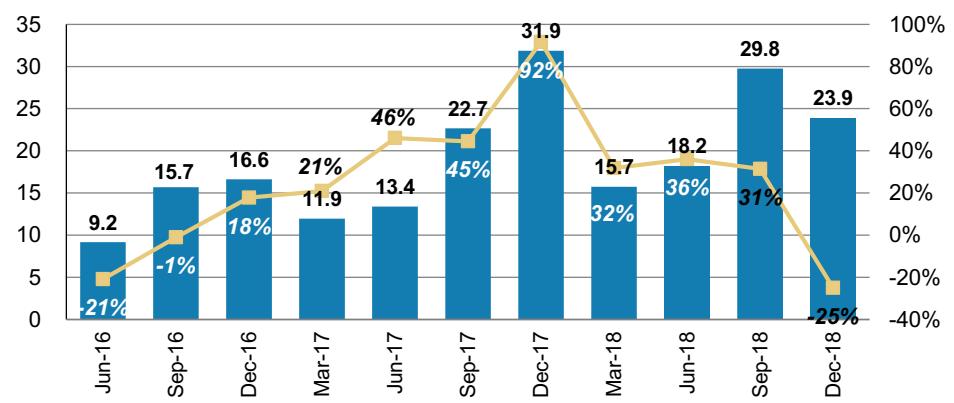
Warranty and FX Hedging Benefit/(Impact) to Apple's Gross Margin



Source: Company Data, Morgan Stanley Research

Exhibit 2: Inventory Increase More Than Offset By Decrease in Y/Y Growth From Non-Trade Receivables

Total Non-Vendor Trade Receivables and Inventory (\$B) Y/Y Growth (RHS)



Source: Company Data, Morgan Stanley Research

AAPL Risk Reward**Growth Contribution from Services Underappreciated by Investors**

Source: Thomson Reuters, Morgan Stanley Research

Price Target \$197

Derived from base-case scenario.

Bull \$243

18.0x Bull Case CY19e EPS of \$13.50

Services revenue per device accelerates to 10%+ growth annually as Apple converts more users than expected to services customers and launches new Services such as original video content. The majority of growth comes from services but hardware declines exceed low expectations as replacement cycles level off earlier than in the base case and global macro factors are lesser headwinds than expected. Gross margins move closer to 38-40% due to higher Services revenue mix. Investors focus on monetization of Apple's 1.4B and growing device base and value Apple closer to that of a platform company given the greater confidence in the sustainability of Services growth. We assume an 18x P/E multiple on CY19 bull case EPS of \$3.50, driving our \$243 bull case valuation, which is supported by SOTP analysis that values Apples Services business on longer-term revenue discounted base to today, with an EV/Sales multiple more in-line with high growth platforms like FB, SNAP, TWTR, and NFLX.

Base \$197

SoTP driven and implies 16.8x Base Case CY19e EPS of \$11.72.

Sustained 20% Services revenue CAGR with the mix shift to higher margin Services and strong Wearables growth helps offset declining iPhone units. Lengthening smartphone replacement cycles (predominantly in China), lower carrier subsidies and economic weakness in emerging markets causes iPhone revenue to decline by 14% in FY19, with a partial recovery in FY20. However, accelerating Services growth combined with growing wearables and share buybacks act as offsets, helping drive a 4% revenue and 12% EPS CAGR through FY23. With Services acting as the primary driver of our forward estimates we use a sum-of-the-parts analysis to derive our price target, which credits Apple's hardware business with an EV/Sales multiple that blends HPQ and MSFT and Apple's services business with the median of 10 consumer platform peers and drives our \$197 PT, translating to a 16.8x P/E, roughly 1-turn above Apple's 10-year CY+1 P/E trading average in light of higher recurring, margin accretive Services growth.

Bear \$110**Investment Thesis**

■ Apple has the world's most valuable technology platform with over 1.4Bn active devices, and is well positioned to capture more of its users' time in areas such as video, augmented reality, health, autos and home. Sustained ~20% Services growth, positive product mix shift, and a stabilization of the hardware business are catalysts that can help sustainably re-rate shares.

Key Debates

■ *Can Apple sustainably grow revenue and EPS?* Yes, we believe the combination of increased services mix, strong wearables growth, higher share repurchases, potential M&A, and investments in new categories like video, augmented/virtual reality, artificial intelligence, health, and autos can offset declining iPhone units to drive 5% revenue growth and 12% EPS growth over the next 5 years.

■ *Can Services growth help re-rate shares?* Yes, we believe so. Apple is a structurally different company today than it was just 5 years ago, with a larger cash balance and a Services business that accounts for 13% of revenue and 21% of gross profit dollars today, growing to 30% of revenue and 46% of gross profit dollars by FY23. As device revenue slows, Services will take the baton, driving more sustainable and more profitable growth helping to re-rate shares higher.

■ *Can Apple accelerate innovation?* Yes, FY18 was the sixth year in a row that R&D growth outpaced revenue growth, translating to new products and services over time. Over the past three years, Apple spent an incremental \$11.6B on R&D compared to less than \$1B ahead of iPhone and iPad. This compares to minimal incremental spend at top auto makers (ex-Tesla) and \$10.8B of incremental spend at Alphabet on far more projects.

Potential Catalysts

■ Increasing services mix, driven by higher penetration of the user base, increased spend per user, and new services.

10x Bear Case CY19e EPS of \$11.00

Weakening global smartphone market overshadows Services growth, resulting in total company revenue declines and margin pressure. Apple continues to invest in future products and services, driving negative operating leverage, offset by continued share repurchases. Our sum of the parts analysis assumes lower-end of platform multiples, in-line with Google, for Apple Services and a more hardware skewed multiple on Apple's device revenue, implying a roughly 10x P/E, the lower end of where large cap hardware stocks have traded over the last year and significantly below Apple's 10-year average historical P/E.

- Rising iPhone ASPs, strong wearables growth speak to increasing customer engagement and spend and help shift narrative from product cycles to a platform story.
- Expanding the platform to new industries, for example healthcare, autos or homes, drives "halo effect" across Apple's businesses.
- Expanding points-of-sale, especially in emerging markets like India

Risks to Achieving Price Target

- Weak global consumer spending or increased price elasticity on the back of higher priced iPhones
- Maturing markets, and Android competition in smartphones and tablets
- Lack of traction with new product categories and/or services limits multiple expansion
- Carriers lengthening replacement cycles and/or lower subsidies or users replace batteries instead of upgrade
- Political, regulatory and legal risk as Apple gains profit share in mobile devices and remains dependent on Asian suppliers (i.e. Tariff risk) and consumers to deliver results

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(as of December 31, 2018)

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STOCK RATING CATEGORY	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MISC
Overweight/Buy	1143	36%	282	40%	25%	540	38%
Equal-weight/Hold	1428	45%	336	47%	24%	651	46%
Not-Rated/Hold	46	1%	6	1%	13%	6	0%
Underweight/Sell	566	18%	86	12%	15%	232	16%
TOTAL	3,183		710			1429	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

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Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

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Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

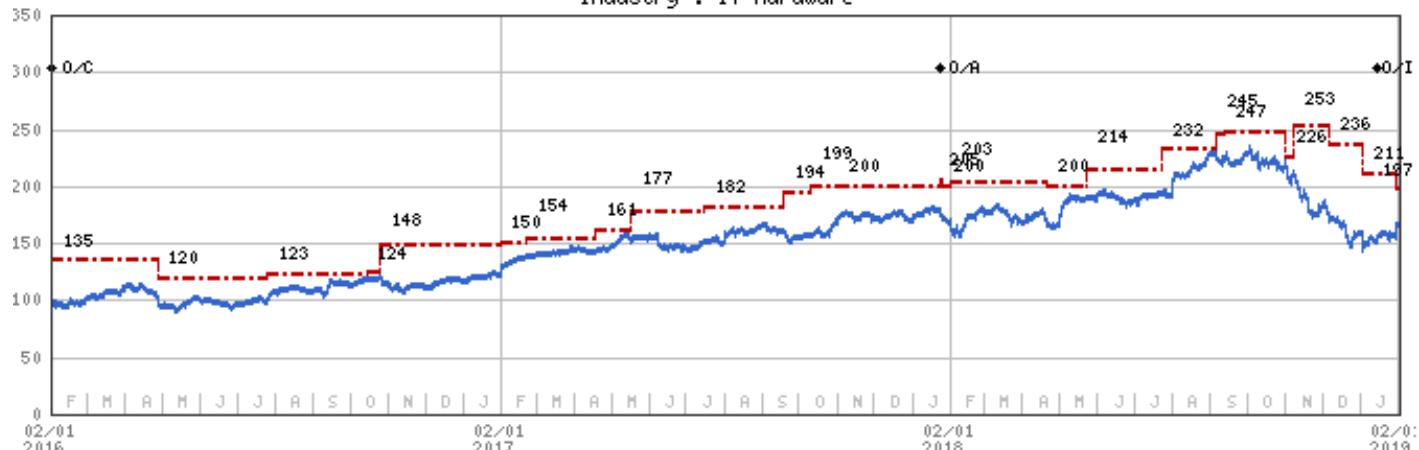
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Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Stock Price, Price Target and Rating History (See Rating Definitions)

Apple, Inc. (AAPL.O) - As of 1/31/19 in USD
Industry : IT Hardware



Stock Rating History: 2/1/16 : 0/C; 1/23/18 : 0/R; 1/15/19 : 0/I

Price Target History: 1/26/16 : 135; 4/27/16 : 120; 7/26/16 : 123; 10/14/16 : 124; 10/25/16 : 148; 1/31/17 : 150; 2/21/17 : 154; 4/19/17 : 161; 5/17/17 : 177; 7/16/17 : 182; 9/19/17 : 194; 10/10/17 : 199; 11/2/17 : 200; 1/23/18 : 205; 1/25/18 : 200; 2/1/18 : 203; 4/20/18 : 200; 5/23/18 : 214; 7/23/18 : 232; 9/6/18 : 245; 9/12/18 : 247; 11/1/18 : 226; 11/7/18 : 253; 12/7/18 : 236; 1/2/19 : 211; 1/29/19 : 197

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) ■
Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

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INDUSTRY COVERAGE: IT Hardware

COMPANY (TICKER)	RATING (AS OF)	PRICE* (01/30/2019)
Katy L. Huberty, CFA		
Apple, Inc. (AAPL.O)	O (05/26/2009)	\$165.25
CDW Corporation (CDW.O)	E (08/06/2013)	\$82.98
Dell Technologies Inc. (DELL.N)	E (01/15/2019)	\$48.00
Electronics for Imaging Inc (EFII.O)	U (08/03/2017)	\$25.62
Hewlett Packard Enterprise (HPE.N)	E (01/15/2019)	\$15.52
HP Inc. (HPQ.N)	E (01/23/2018)	\$22.20
IBM (IBM.N)	++	\$134.38
NCR Corp. (NCR.N)	E (09/25/2011)	\$26.84
NetApp Inc (NTAP.O)	U (01/15/2019)	\$63.38
Nutanix Inc (NTNX.O)	O (01/15/2019)	\$50.27
Pure Storage Inc (PSTGN)	E (05/18/2017)	\$17.74
Seagate Technology(STX.O)	O (04/09/2018)	\$43.74
Teradata (TDC.N)	O (01/15/2019)	\$44.26
Xerox Corp (XRXN)	++	\$28.16
Yuuji Anderson		
Fitbit Inc (FIT.N)	U (04/01/2018)	\$6.10
Garmin Ltd (GRMN.O)	E (01/07/2015)	\$69.10
GoPro Inc (GPRO.O)	U (01/23/2018)	\$4.87
Sonos Inc. (SONO.O)	O (01/28/2019)	\$11.57

Stock Ratings are subject to change. Please see latest research for each company.

* Historical prices are not split adjusted.

Apple Inc.

AAPL: F2019 Capex Guide Reduction (\$12B vs. Prior \$14B); 10-Q Quick Review

Market Perform/\$160

IT Hardware & Communications Networking
Market Weight

Company Note

- Please see charts on pages 2-4.**

Apple Reduces F2019 Capex Guide (Now Implies >25% Y/Y Decline): Apple's 10-Q discloses a reduction in the company's F2019 capex expectations – now guiding ~\$12B (-28% y/y), down from the company's prior \$14.0B guidance (F2018 10-K disclosure). This represents a decline from company spending \$12.8B, \$14.9B, and \$16.7B in F2016, F2017, and F2018, respectively – see chart below. As a reminder, Apple's reported *capital expenditures* can differ materially from the company's disclosed Payment for Acquisition of PP&E on the Statement of Cash Flow. Apple's 10-Q discloses that the company spent ~\$1.5B in capex during F1Q19 (vs. CF statement at \$3.355B). This represents a 30%+ y/y decline vs. ~\$2.2B spent in F1Q18; lowest level of quarterly capex spend since F2Q14 (see below). Apple's updated F2019 capex guide implies a ~\$10.5B capex spend for F2Q19-F4Q19, which would imply a cumulative decline of over 25% over the next three quarters.

Manufacturing Purchase Obligations: Apple's 10-Q discloses that the company exited F1Q19 with \$30.2 billion of total outstanding Manufacturing Purchase Obligations. This compares to \$45.2 billion and \$33.5 billion exiting the prior and year ago quarter, respectively. Apple also discloses that it exited F1Q19 with \$6.3 billion in *Other Purchase Obligations* relating to product tooling and manufacturing process equipment, and non-cancelable obligations related to advertising, licensing, R&D, and other services – a decline from \$8.5 billion and \$7.0 billion exiting the June and September quarters, respectively.

New Deferred Revenue Disclosures: Apple's 10-Q, now in conjunction with ASC606 accounting, provides incremental disclosures on deferred revenue contributions. We will be interested in these new disclosures as it will provide investors with insight into the company's incremental deferred revenue growth (e.g., Apple Care). For F1Q19, Apple's 10-Q discloses that the company generated approximately \$2.4 billion of total revenue that was included in the company's beginning period deferred revenue balance. Apple exited F1Q19 with ~\$8.4 billion in total deferred revenue (vs. ~\$8.763 billion exiting F2018), which leaves us to estimate that the company added ~\$2.0 billion in total deferred during F1Q19. Apple's 10-Q filing discloses that the company expects ~66% of its total deferred revenue balance to be recognized in revenue over the next 12-months (i.e., short-term deferred at (\$5.546B exiting F1Q19), 27% to be recognized in 1-2 years, and 6% in 2-3 years).

- Continued on following pages...**

\$ EPS	2018A	2019E	2020E	
	Curr.	Prior	Curr.	Prior
Q1 (Dec.)	3.89	4.18 A	NC	4.46
Q2 (Mar.)	2.73	2.45	NC	2.83
Q3 (June)	2.34	2.27	NC	2.64
Q4 (Sep.)	2.91	2.77	NC	2.98
FY	11.87	11.67	NC	12.92
CY	12.16	11.95		13.50
FY P/EPS	14.1x	14.3x		12.9x
Rev.(MM)	265,595	255,543		256,148

Source: Company Data, Wells Fargo Securities, LLC estimates, and Reuters
NA = Not Available, NC = No Change, NE = No Estimate, NM = Not Meaningful
V = Volatile

Ticker	AAPL
Price Target/Prior:	\$160/NC
Price (01/31/2019)	\$166.99
52-Week Range:	\$142-234
Shares Outstanding: (MM)	4,730.0
Market Cap.: (MM)	\$789,855.6
S&P 500:	2,699.70
Avg. Daily Vol.:	40,540,900
Dividend/Yield:	\$2.92/1.7%
LT Debt: (MM)	\$93,735.0
LT Debt/Total Cap.:	11.4%
ROE:	NE
3-5 Yr. Est. Growth Rate:	10.0%
CY 2019 Est. P/EPS-to-Growth:	1.4x
Last Reporting Date:	01/29/2019 After Close

NC = No Change

Source: Company Data, Wells Fargo Securities, LLC estimates, and Reuters

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Please see page 5 for rating definitions, important disclosures and required analyst certifications. All estimates/forecasts are as of 01/31/19 unless otherwise stated. 01/31/19 14:16:12 ET

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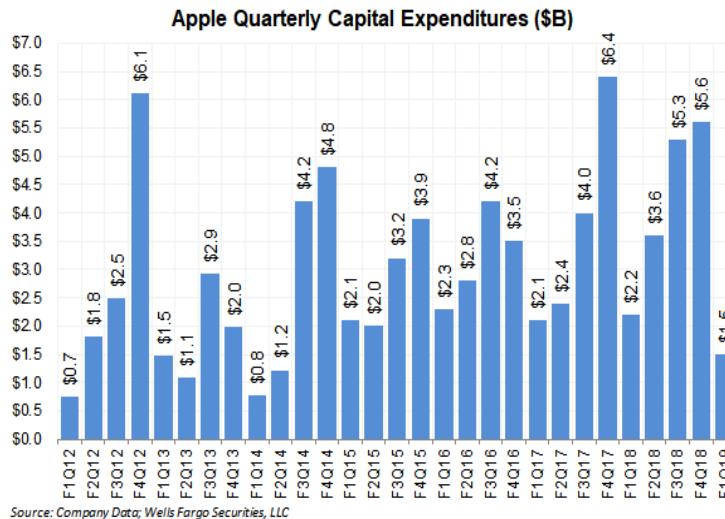
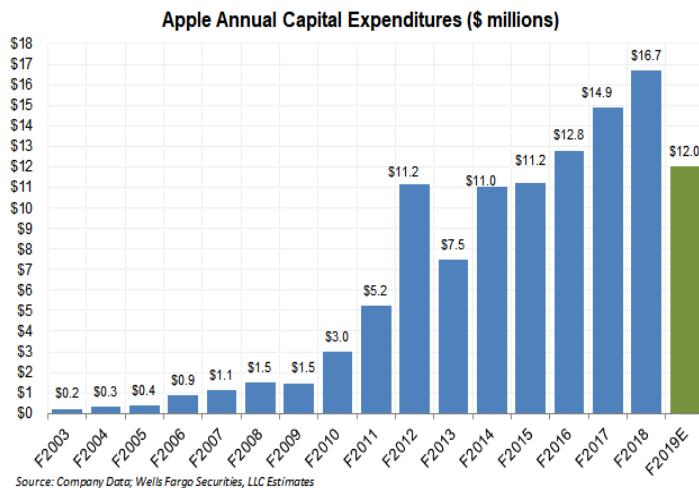
Together we'll go far

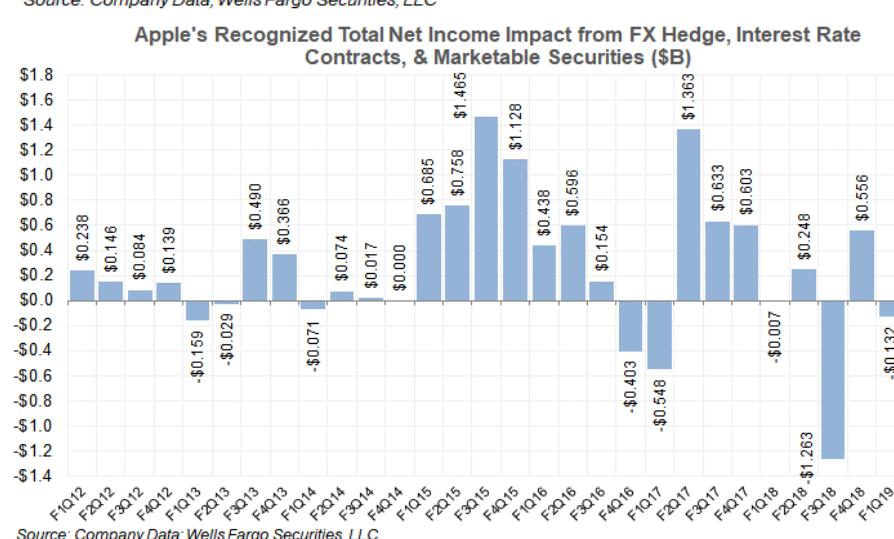
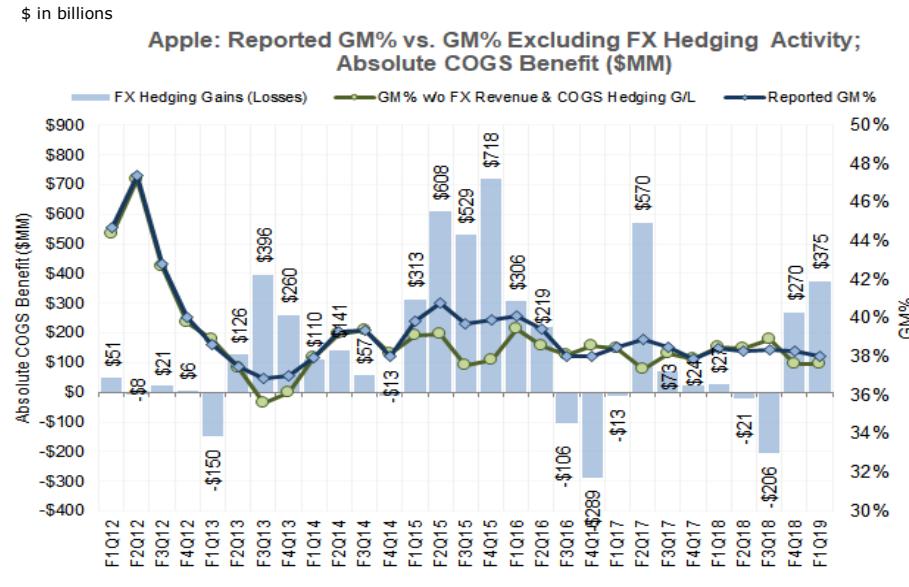
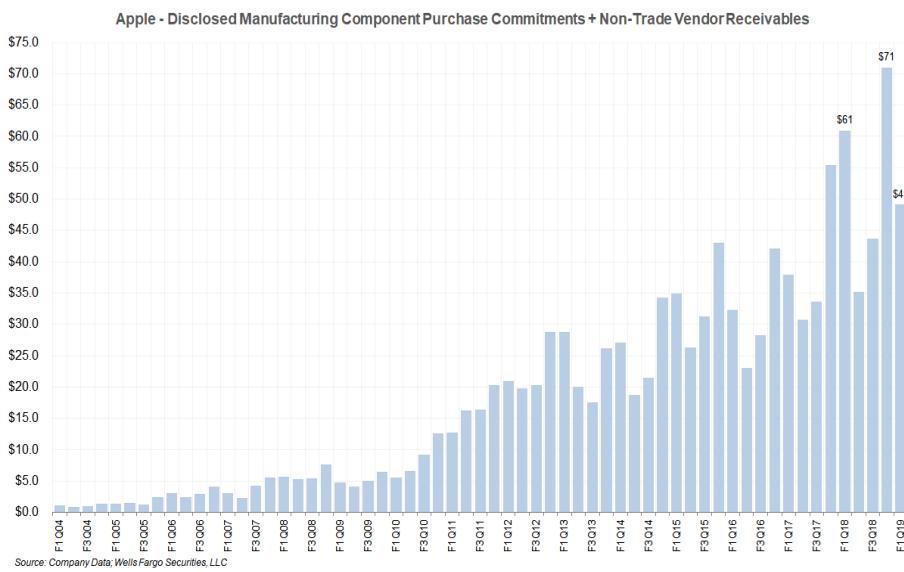


- Non-Trade Receivables (Apple's Purchase of Components for Manufacturing):** Apple exited F1Q19 with \$18.904 billion in Vendor Non-Trade Receivables, down from \$25.809 billion and \$27.459 billion exiting the prior and year ago quarters, respectively. Vendor Non-Trade Receivables represent Apple's sales of components to manufacturing partners for final products. Exiting the December quarter approximately 56% and 14% of this balance was with two vendors, down from a 62% and 12% contribution exiting September – implying a 30%+ q/q decline at the company's largest partner (Hon-Hai / Foxconn). This compares to a +140% q/q increase in the year ago quarter.

- Share Repo – No Shares Repurchased in December:** Apple's 10-Q filing notes that the company has now utilized \$37.3 billion out the \$100 billion share repurchase authorization announced on May 1, 2018. This includes the already disclosed \$8.2 billion spent during F1Q19. Apple's 10-Q disclosure highlights that the company did not repurchase shares during December; spending \$6.886B in October to repurchase 31.3M shares (\$219.71/sh.) and \$6.681B in November to repurchase 6.7M shares (\$202.07/sh.). Apple has \$62.734B remaining share repurchase authorization.

- Other: (1) Trade Receivables.** Apple exited F1Q19 with cellular networks accounting for 45% of the company's total trade receivables balance, down from a 59% contribution exiting September. This implies a ~40% q/q decline, which compares to a 30%+ q/q increase in the year ago quarter. **(2) Product Warranty:** Apple's 10-Q discloses that the company's product warranty accruals totaled \$1.123 billion in F1Q19 (1.5% of product revenue), a modest decline from \$1.295 billion in F4Q18 and versus \$1,471 billion in F1Q18. Apple's 13% q/q decline in Product Warranty Accruals in F1Q19 compares to +93%, +293%, and +164% q/q increases in F1Q16, F1Q17, and F1Q18, respectively. **(3) FX Impacts:** As illustrated in the charts below, Apple's 10-Q disclosures show a +\$375M FX hedging gain on report F1Q19 GM%, or a +40bps benefit. Apple reported a -\$132 million total net income impact from FX contracts, interest rate contracts, and marketable securities gains (losses).





Price Target

Price Target: \$160 from NC

Our \$160 price target reflects 8.2x our C2020 EV/EBITDA estimate. Risks include: (1) Reinventing product momentum - can Apple sustain current level of product innovation? (2) Emerging competition (especially in emerging markets); (3) impact of higher component pricing; (4) Slowdown in Chinese growth impacting expanding operations in the country; (5) Legal disputes; and (6) Execution missteps.

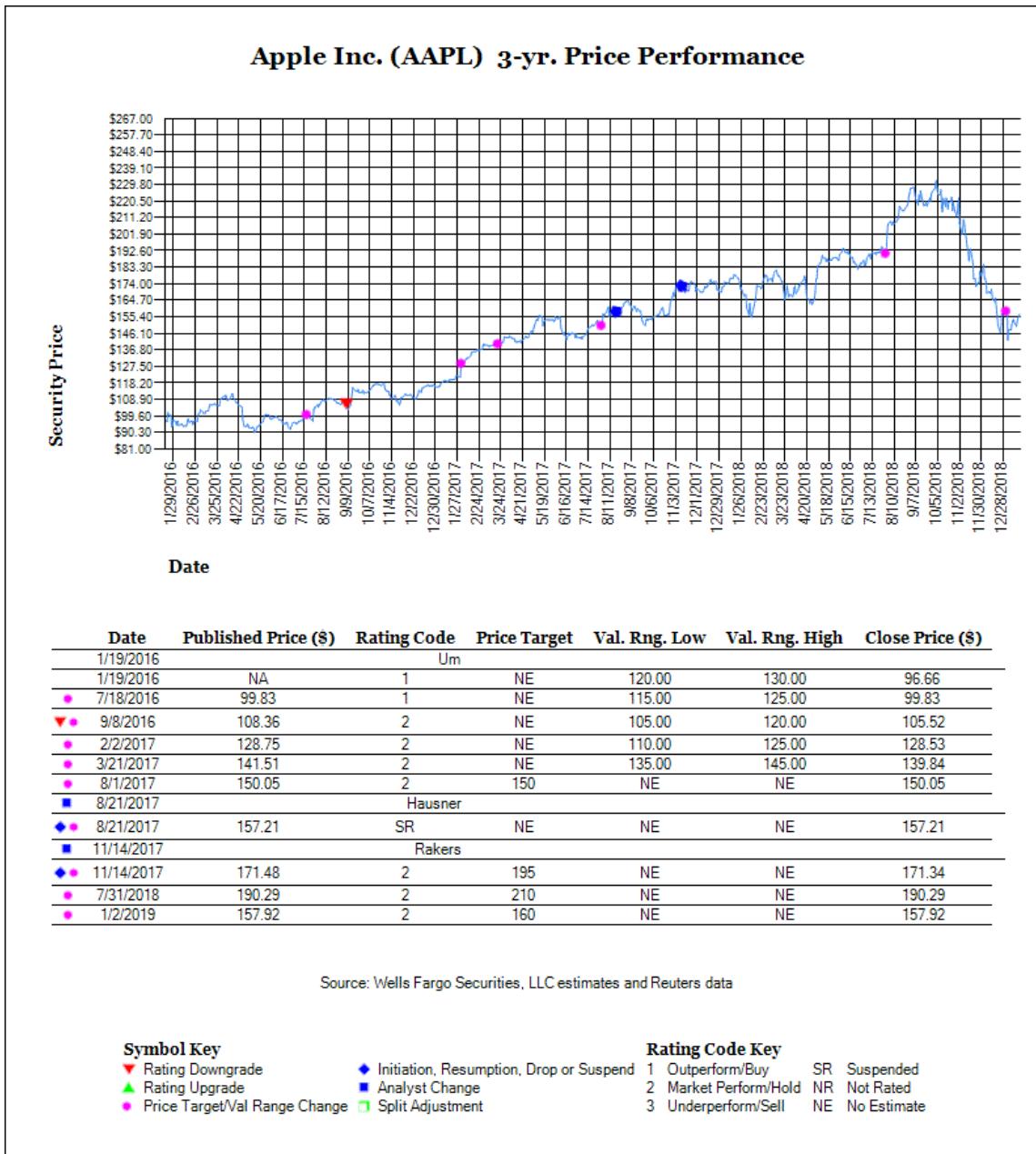
Investment Thesis

We rate Apple at Market Perform as we think investors will continually question What's Next in the Apple story given: (1) a maturing smartphone market is elongating refresh cycles / slowing customer upgrade rates (2) Continued momentum of Apple's Services business is a positive and is a long-term gross margin positive, but we do not believe is enough to drive the stock (3) ongoing capital return (share repo + dividend) remains a positive.

Company Description

Apple designs, manufactures and markets personal computers and other personal computing, mobile communication, and wearable devices. The company also operates a digital music store through its iTunes application and offers a large variety of downloadable applications for its devices through the App Store. Apple also features its own operating systems, including iOS, WatchOS, TVOS, and Mac OS X, for use in its products. The company sells its products through its online store, growing retail locations, direct sales force, and 3rd party cellular network carriers to a variety of end markets including consumer, small and medium-sized businesses, education, enterprise, government and creative markets. The company was founded in 1976 and is headquartered in Cupertino, CA.

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2=Market Perform: The stock appears appropriately valued, and we believe the stock's total return will be in line with the market over the next 12 months. HOLD

3=Underperform: The stock appears overvalued, and we believe the stock's total return will be below the market over the next 12 months. SELL

SECTOR RATING

O=Overweight: Industry expected to outperform the relevant broad market benchmark over the next 12 months.

M=Market Weight: Industry expected to perform in-line with the relevant broad market benchmark over the next 12 months.

U=Underweight: Industry expected to underperform the relevant broad market benchmark over the next 12 months.

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As of: January 31, 2019

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Apple Inc.

Worst of Bad News Now Behind Us, Services Has a Lot of Runway, and 5G Could Help Upgrade Cycle

Early phases of transitioning from distributor to content aggregator/provider

Apple stock should react favorably as revenue guide was better than feared, though there was ample information here for both bulls and bears (gross margin guide, elongating iPhone upgrade rates, big Y/Y declines in hardware margins despite big iPhone ASP increases). We remain optimistic because 1) we are now through the worst of the bad news for a while; 2) that AAPL is getting a paltry ~\$30MM/Q from its largest 3rd party subscription app shows the vast fertile ground; 3) iPhone replacement cycles continue to elongate but AAPL's numbers suggest they could now be close to some asymptote; and 4) new proprietary content (video) and aggregation services (gaming) this year should spur a pivot in the narrative. Video in particular does not seem like a zero-sum-game with room for AAPL to co-exist and while there are existing players in these content markets, AAPL can marry new content with distribution. Net, we increase our PT from \$180 to \$185 as we think the worse of the bad news is over for a while.

iPhone upgrade cycle is 4+ years; company claims its lower

An important disclosure this quarter is iPhone install base of 900mn+ and growth of 75mn in past 12mos. Assuming 10% of install base growth was from net new customers, it suggests iPhone replacement cycle is 4+ years. If we assume a 5% install base growth, based on our current unit estimate, this would imply that upgrade cycles stretch to >5 yrs and only a slight lengthening in 2020 (Figure 1 in the note) - these are clearly close to reaching some limit, especially as 5G makes older phones much less attractive. Moreover, Apple's efforts to offer trade-in programs, eating FX impact in emerging markets and what we think will finally be an exciting new form factor in '20 should help compress the replacement cycle.

Estimates largely unchanged

We maintain our F19 EPS at \$11.47 and increase F20 by 1% to \$13.74

Valuation: Buy and increase price target to \$185 from \$180

Our price target is based on SOTP of non-recurring and recurring segments. We apply a 10.6x (a slight increase from 10.1x as hardware business could trough this quarter) to average C19/20 EPS of ~\$10.16 for the non-recurring business and 23.3x to the recurring service segment. Our \$185 PT implies 14.2x our avg. \$13.41 EPS for C19/20.

Equities

Americas

Computers

12-month rating

Buy
12m price target **US\$185.00**
Prior: US\$180.00
Price **US\$154.68**
RIC: AAPL.O **BBG:** AAPL US

Trading data and key metrics

52-wk range US\$232.07-142.19

Market cap. US\$738bn

Shares o/s 4,773m (COM)

Free float 100%

Avg. daily volume ('000) 43,571

Avg. daily value (m) US\$7,524.9

Common s/h equity (09/19E) US\$83.7bn

P/BV (09/19E) 8.5x

Net debt / EBITDA (09/19E) NM

EPS (UBS, diluted) (US\$)

	09/19E			
	From	To	% ch	Cons.
Q1	4.15	4.18	1	4.17
Q2E	2.43	2.40	-1	2.63
Q3E	1.99	1.98	-1	2.23
Q4E	2.92	2.92	NM	2.83
09/19E	11.47	11.47	NM	11.94
09/20E	13.62	13.74	1	13.34
09/21E	15.45	15.75	2	14.85

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Highlights (US\$m)	09/16	09/17	09/18	09/19E	09/20E	09/21E	09/22E	09/23E
Revenues	215,639	229,234	265,595	253,919	269,240	285,718	300,224	316,935
EBIT (UBS)	60,024	61,344	70,898	61,827	67,697	72,014	75,053	78,770
Net earnings (UBS)	45,610	48,351	59,531	52,932	57,571	61,184	63,721	66,825
EPS (UBS, diluted) (US\$)	8.29	9.21	11.86	11.47	13.74	15.75	17.58	19.01
DPS (US\$)	2.18	2.35	2.72	3.07	3.37	3.71	4.08	4.49
Net (debt) / cash	150,553	153,215	122,617	96,035	84,157	84,940	92,265	101,743
Profitability/valuation	09/16	09/17	09/18	09/19E	09/20E	09/21E	09/22E	09/23E
EBIT margin %	27.8	26.8	26.7	24.3	25.1	25.2	25.0	24.9
ROIC (EBIT) %	473.6	350.4	278.3	178.9	181.5	216.3	252.5	297.6
EV/EBITDA (core) x	6.2	8.1	9.7	8.0	7.4	7.1	6.8	6.6
P/E (UBS, diluted) x	12.6	14.9	15.4	13.5	11.3	9.8	8.8	8.1
Equity FCF (UBS) yield %	8.6	6.9	6.9	7.1	9.1	9.6	9.9	10.3
Net dividend yield %	2.1	1.7	1.5	2.0	2.2	2.4	2.6	2.9

Source: Company accounts, Thomson Reuters, UBS estimates. UBS adjusted EPS is stated before goodwill-related charges and other adjustments for abnormal and economic items at the analysts' judgement. Valuations: based on an average share price that year, (E): based on a share price of US\$154.68 on 29 Jan 2019 18:42 EST

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Figure 1: iPhone install base and replacement cycle length

	CY2017	CY018	CY2019	CY2020
Install base	835,000	910,000	955,500	974,610
% growth		9%	5%	2%
New iPhones sold (UBSe)		204,406	181,600	182,730
Install base growth (# of phones)		75,000	45,500	19,110
New customers		7,500	4,550	1,911
% of install base growth		10%	10%	10%
Upgraders		196,906	177,050	180,819
Replacement cycle		4.24	5.14	5.28

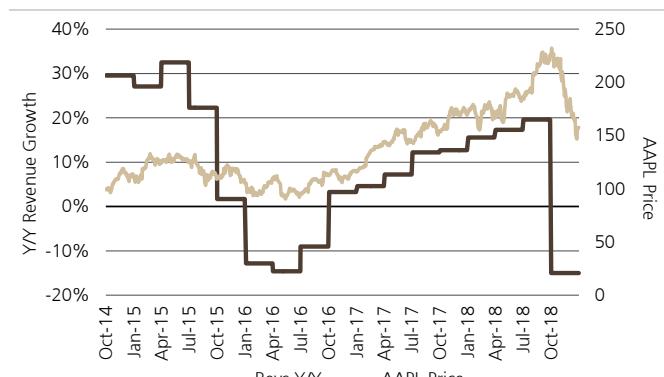
Source: Company reports, UBSe

Figure 2: 2018 Dec-Q Reported vs Estimates

Key Metrics	FQ1:19						Remarks
	Actual	UBS Estimate	Street Estimate	UBS vs Street	Act vs UBS	Act vs Street	
Revenue (\$MM)	\$84,310	\$83,803	\$83,974	-0.2%	0.6%	0.4%	In line with preann
Y/Y Growth	-4.5%	-5.1%	-4.9%				
Gross Margin (Non-GAAP)	38.0%	38.0%	38.1%	-0.2%	0.0%	-0.2%	In line with preann
Operating Margin	27.7%	27.6%	27.8%	-0.6%	0.1%	-0.2%	
Non-GAAP EPS	\$4.18	\$4.15	\$4.17	-0.6%	3.7%	0.3%	In line
Segment Revenue							
iPhone	\$51,982	\$52,091	\$52,874	-1.5%	-0.2%	-1.7%	In line with our estimate
iPad	6,729	6,345	6,040	5.0%	6.1%	11.4%	Higher on strong unit and ASP growth
Mac	7,416	6,965	7,328	-5.0%	6.5%	1.2%	Higher than our estimate and record for the company
Services	10,875	10,813	10,825	-0.1%	0.6%	0.5%	Higher than estimate and preann
Other	7,308	7,590	7,008	8.3%	-3.7%	4.3%	Strong growth in wearables, supply constrained

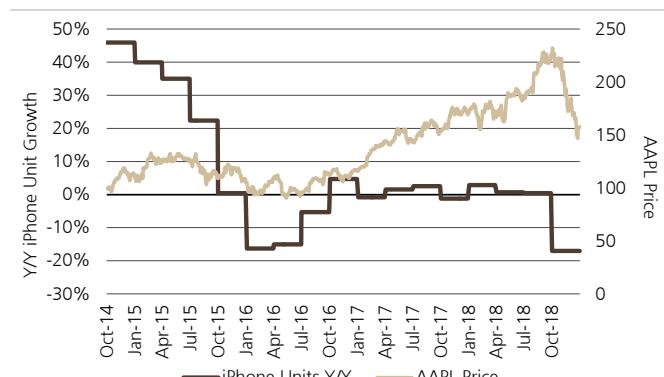
Source: Factset, UBS estimates

Figure 3: Apple revenue growth vs stock price



Source: Company reports, Factset

Figure 4: iPhone unit growth vs stock price



Source: Company reports, Factset

Figure 5: 2019 Mar-Q Outlook

Key Metrics	FQ2:19	
	Guidance	UBS Estimate
Revenue (\$MM)	\$55-59bn	\$57,525
Gross Margin (Non-GAAP)	37-38%	37.5%
Operating expense	\$8.5-8.6bn	8,537
Operating Margin		22.7%
Non-GAAP EPS		\$2.40

Source: Company reports, UBS estimates

Figure 6: New vs Old Estimates

Key Metrics	FY 2019			FY 2020		
	New	Old	% Change	New	Old	% Change
Revenue (\$MM)	\$253,919	\$250,841	1.2%	\$269,240	\$267,323	0.7%
Y/Y Growth	-4.4%	-5.6%	1.2%	6.0%	6.6%	-0.5%
Gross Margin (Non-GAAP)	38.0%	38.3%	-0.4%	38.5%	38.5%	0.0%
Operating Margin	24.3%	24.5%	-0.1%	25.1%	24.9%	0.2%
Non-GAAP EPS	\$11.47	\$11.47	0.0%	\$13.74	\$13.62	0.9%
Segment Revenue						
iPhone	\$136,575	\$135,985	0.4%	\$140,769	\$140,769	0.0%
iPad	19,728	17,739	11.2%	17,804	16,009	11.2%
Mac	26,376	25,797	2.2%	26,516	25,933	2.2%
Services	47,105	46,903	0.4%	54,223	54,401	-0.3%
Other	24,136	24,418	-1.2%	29,928	30,210	-0.9%
Units & ASPs						
iPhone	181,000	180,000	0.6%	179,500	179,500	0.0%
iPhone ASP	\$755	\$755	-0.1%	\$784	\$784	0.0%
iPad	44,261	42,675	3.7%	42,048	40,541	3.7%
iPad ASP	\$446	\$416	7.2%	\$423	\$395	7.2%

Source: UBS estimates

Figure 7: UBS vs Street estimates

	2017	2018	2019/1F	2019/2F	2019/3F	2019/4F	2019	2020/1F	2020/2F	2020/3F	2020/4F	2020	CY2017	CY2018	CY2019	CY2020
Revenue (\$MM)																
UBS (new)	\$229,234	\$265,595	\$84,310	\$57,525	\$50,010	\$62,074	\$253,919	\$89,357	\$61,029	\$53,733	\$65,121	\$269,240	\$239,176	\$261,612	\$258,966	\$274,906
UBS (old)	\$265,595	\$84,310	\$56,240	\$49,280	\$61,518	\$250,841	\$88,954	\$60,565	\$53,084	\$64,720	\$267,323	\$239,176	\$261,612	\$255,992	\$273,088	
Consensus	\$229,234	\$265,595	\$84,310	\$58,733	\$52,918	\$61,323	\$257,284	\$86,595	\$61,434	\$55,369	\$63,242	\$266,640	\$239,176	\$261,612	\$259,568	\$269,989
Delta	0.0%	0.0%	0.0%	(2.1%)	(5.5%)	1.2%	(1.3%)	3.2%	(0.7%)	(3.0%)	3.0%	1.0%	0.0%	0.0%	(0.2%)	1.8%
EPS (non-GAAP)																
UBS (new)	\$9.21	\$11.86	\$ 4.18	\$ 2.40	\$ 1.98	\$ 2.92	\$11.47	\$ 4.99	\$ 2.96	\$ 2.44	\$ 3.36	\$13.74	\$ 9.72	\$ 12.16	\$ 12.29	\$ 14.53
UBS (old)			\$ 4.18	\$ 2.43	\$ 1.99	\$ 2.92	\$11.47	\$ 5.00	\$ 2.93	\$ 2.38	\$ 3.31	\$13.62	\$ 9.72	\$ 12.16	\$ 12.35	\$ 14.35
Consensus	\$9.20	\$11.87	\$ 4.18	\$ 2.59	\$ 2.21	\$ 2.81	\$11.79	\$ 4.63	\$ 2.92	\$ 2.52	\$ 3.12	\$13.19	\$ 9.73	\$ 12.16	\$ 12.24	\$ 13.97
Delta	(0.1%)	0.1%	0.1%	(7.3%)	(10.4%)	3.8%	(2.7%)	7.8%	1.2%	(3.2%)	7.6%	4.2%	0.0%	0.0%	0.4%	4.0%

Source: FactSet, UBS estimates

Figure 8: AAPL trades at ~13x NTM PE...



Figure 9: ...and at 10.5x EV/EBITDA NTM

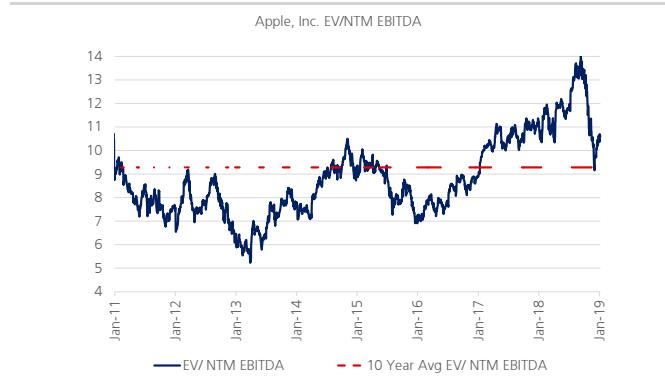


Figure 10: AAPL trades at a 2% PE discount to large cap tech...

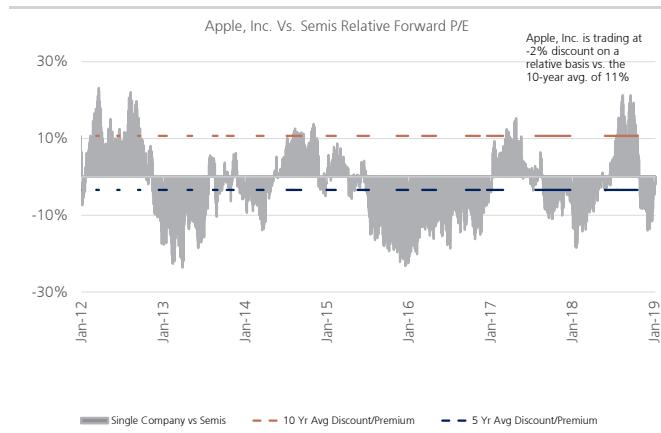


Figure 11: ...and at 23% discount to the S&P 500

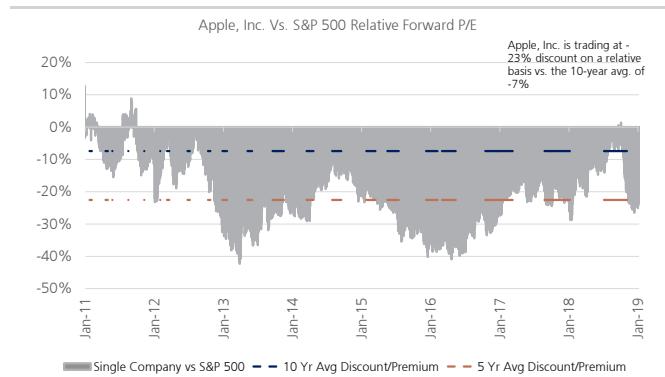


Figure 12: Key Metrics

Key Metrics	2017	2018A	1Q	2QE	3QE	4QE	2019E	1QE	2QE	3QE	4QE	2020E
Revenue (\$MM)	\$ 239,176	\$ 261,612	\$ 57,525	\$ 50,010	\$ 62,074	\$ 89,357	\$ 258,966	\$ 61,029	\$ 53,733	\$ 65,121	\$ 95,023	\$ 274,906
Y/Y Growth	9.7%	9.4%	-5.9%	-6.1%	-1.3%	6.0%	-1.0%	6.1%	7.4%	4.9%	6.3%	6.2%
Gross Margin (Non-GAAP)	38.8%	38.6%	37.9%	38.4%	38.7%	38.9%	38.5%	38.9%	38.9%	38.9%	38.9%	38.9%
Operating Margin	29.0%	28.1%	24.7%	22.8%	26.3%	30.4%	26.6%	26.0%	23.9%	26.5%	30.6%	27.3%
Non-GAAP EPS	\$ 10.45	\$ 13.13	\$ 2.60	\$ 2.17	\$ 3.15	\$ 5.34	\$ 13.26	\$ 3.20	\$ 2.66	\$ 3.62	\$ 6.18	\$ 15.66
Consensus	\$ 9.73	\$ 12.16	\$ 2.59	\$ 2.21	\$ 2.81	\$ 4.63	\$ 12.24	\$ 2.92	\$ 2.52	\$ 3.12	\$ 5.41	\$ 13.97
Segment Revenue												
iPhone	\$ 148,045	\$ 155,766	\$ 30,219	\$ 22,189	\$ 32,185	\$ 54,164	\$ 138,758	\$ 30,875	\$ 23,237	\$ 32,493	\$ 56,873	\$ 143,477
YoY Growth	6.2%	5.2%	-19.5%	-24.7%	-12.4%	4.2%	-10.9%	2.2%	4.7%	1.0%	5.0%	3.4%
Units, k	215,782	204,406	42,500	32,500	42,000	64,600	181,600	41,500	32,200	41,200	67,830	182,730
YoY Growth	0.2%	-5.3%	-18.6%	-21.3%	-10.4%	0.9%	-11.2%	-2.4%	-0.9%	-1.9%	5.0%	0.6%
ASP	\$686	\$762	\$711	\$683	\$766	\$838	\$764	\$744	\$722	\$789	\$838	\$785
iPad	\$ 19,444	\$ 19,354	\$ 4,127	\$ 4,771	\$ 4,101	\$ 6,073	\$ 19,072	\$ 3,724	\$ 4,306	\$ 3,701	\$ 5,596	\$ 17,328
YoY Growth	1.9%	-0.5%	3.0%	3.0%	3.0%	-9.8%	-1.5%	-9.8%	-9.8%	-9.8%	-7.9%	-9.1%
Units, k	43,842	44,565	9,022	11,437	9,602	13,490	43,551	8,571	10,866	9,122	12,816	41,374
YoY Growth	3.0%	1.6%	-1.0%	-1.0%	-1.0%	-5.0%	-2.3%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%
ASP	\$444	\$434	\$457	\$417	\$427	\$450	\$438	\$435	\$396	\$406	\$437	\$419
Mac	\$ 25,430	\$ 25,790	\$ 5,985	\$ 5,568	\$ 7,407	\$ 7,494	\$ 26,454	\$ 6,140	\$ 5,555	\$ 7,326	\$ 7,573	\$ 26,595
YoY Growth	9.0%	1.4%	3.6%	5.9%	0.9%	1.1%	2.6%	2.6%	-0.2%	-1.1%	1.1%	0.5%
Services	\$ 31,937	\$ 41,494	\$ 11,575	\$ 12,097	\$ 12,557	\$ 12,469	\$ 48,699	\$ 13,342	\$ 13,998	\$ 14,414	\$ 14,114	\$ 55,868
YoY Growth	25.4%	29.9%	17.5%	18.9%	18.5%	14.7%	17.4%	15.3%	15.7%	14.8%	13.2%	14.7%
Other	\$ 14,320	\$ 19,208	\$ 5,619	\$ 5,385	\$ 5,824	\$ 9,156	\$ 25,984	\$ 6,948	\$ 6,637	\$ 7,187	\$ 10,866	\$ 31,638
YoY Growth	32.5%	34.1%	42.5%	44.3%	37.9%	25.3%	35.3%	23.6%	23.2%	23.4%	18.7%	21.8%

Source: Company reports, UBS

Apple Inc. (AAPL.O)

Income statement (US\$m)	09/16	09/17	09/18	09/19E	% ch	09/20E	% ch	09/21E	09/22E	09/23E
Revenues	215,639	229,234	265,595	253,919	-4.4	269,240	6.0	285,718	300,224	316,935
Gross profit	84,263	88,186	101,839	96,381	-5.4	103,657	7.5	110,001	115,586	122,020
EBITDA (UBS)	70,529	71,501	81,801	75,164	-8.1	80,660	7.3	84,741	87,654	91,347
Depreciation & amortization	(10,505)	(10,157)	(10,903)	(13,337)	22.3	(12,963)	-2.8	(12,727)	(12,601)	(12,577)
EBIT (UBS)	60,024	61,344	70,898	61,827	-12.8	67,697	9.5	72,014	75,053	78,770
Associates & investment income	0	0	0	0	-	0	-	0	0	0
Other non-operating income	0	0	0	0	-	0	-	0	0	0
Net interest	1,271	2,745	2,005	1,560	-22.2	1,250	-19.9	1,250	1,250	1,250
Exceptionals (incl goodwill)	0	0	0	0	-	0	-	0	0	0
Profit before tax	61,295	64,089	72,903	63,387	-13.1	68,947	8.8	73,264	76,303	80,020
Tax	(15,685)	(15,738)	(13,372)	(10,455)	21.8	(11,376)	-8.8	(12,080)	(12,582)	(13,195)
Profit after tax	45,610	48,351	59,531	52,932	-11.1	57,571	8.8	61,184	63,721	66,825
Preference dividends	0	0	0	0	-	0	-	0	0	0
Minorities	0	0	0	0	-	0	-	0	0	0
Extraordinary items	0	0	0	0	-	0	-	0	0	0
Net earnings (local GAAP)	45,610	48,351	59,531	52,932	-11.1	57,571	8.8	61,184	63,721	66,825
Net earnings (UBS)	45,610	48,351	59,531	52,932	-11.1	57,571	8.8	61,184	63,721	66,825
Tax rate (%)	25.6	24.6	18.3	16.5	-10.1	16.5	0.0	16.5	16.5	16.5
Per share (US\$)	09/16	09/17	09/18	09/19E	% ch	09/20E	% ch	09/21E	09/22E	09/23E
EPS (UBS, diluted)	8.29	9.21	11.86	11.47	-3.3	13.74	19.8	15.75	17.58	19.01
EPS (local GAAP, diluted)	8.29	9.21	11.86	11.47	-3.3	13.74	19.8	15.75	17.58	19.01
EPS (UBS, basic)	8.29	9.21	11.86	11.47	-3.3	13.74	19.8	15.75	17.58	19.01
Net DPS (US\$)	2.18	2.35	2.72	3.07	12.7	3.37	10.0	3.71	4.08	4.49
Cash EPS (UBS, diluted) ¹	10.20	11.14	14.03	14.36	2.3	16.83	17.2	19.03	21.05	22.59
Book value per share	23.43	25.61	21.75	18.13	-16.6	16.12	-11.1	16.63	18.91	21.30
Average shares (diluted)	5,500.28	5,251.69	5,018.71	4,615.10	-8.0	4,191.43	-9.2	3,884.87	3,624.95	3,515.11
Balance sheet (US\$m)	09/16	09/17	09/18	09/19E	% ch	09/20E	% ch	09/21E	09/22E	09/23E
Cash and equivalents	237,585	268,895	237,100	210,765	-11.1	198,887	-5.6	199,670	206,995	216,473
Other current assets	39,714	54,464	65,038	49,350	-24.1	51,150	3.6	53,226	55,557	58,276
Total current assets	277,299	323,359	302,138	260,115	-13.9	250,036	-3.9	252,897	262,551	274,749
Net tangible fixed assets	27,010	33,783	41,304	36,819	-10.9	34,949	-5.1	33,872	33,412	33,643
Net intangible fixed assets	8,620	8,015	7,582	7,203	-5.0	6,880	-4.5	6,658	6,527	6,396
Investments / other assets	8,757	10,162	14,701	27,104	84.4	27,104	0.0	27,104	27,104	27,104
Total assets	321,686	375,319	365,725	331,240	-9.4	318,969	-3.7	320,531	329,594	341,892
Trade payables & other ST liabilities	67,401	82,341	96,118	77,644	-19.2	81,902	5.5	86,295	91,225	96,977
Short term debt	11,605	18,473	20,748	21,741	4.79	21,741	0.00	21,741	21,741	21,741
Total current liabilities	79,006	100,814	116,866	99,385	-15.0	103,643	4.3	108,036	112,966	118,718
Long term debt	75,427	97,207	93,735	92,989	-0.8	92,989	0.0	92,989	92,989	92,989
Other long term liabilities	39,004	43,251	47,977	55,178	15.0	54,752	-0.8	54,913	55,094	55,304
Preferred shares	0	0	0	0	-	0	-	0	0	0
Total liabilities (incl pref shares)	193,437	241,272	258,578	247,552	-4.3	251,384	1.5	255,938	261,048	267,012
Common s/h equity	128,249	134,047	107,147	83,688	-21.9	67,585	-19.2	64,593	68,546	74,881
Minority interests	0	0	0	0	-	0	-	0	0	0
Total liabilities & equity	321,686	375,319	365,725	331,240	-9.4	318,969	-3.7	320,531	329,594	341,892
Cash flow (US\$m)	09/16	09/17	09/18	09/19E	% ch	09/20E	% ch	09/21E	09/22E	09/23E
Net income (before pref divs)	45,610	48,351	59,531	52,932	-11.1	57,571	8.8	61,184	63,721	66,825
Depreciation & amortization	10,505	10,157	10,903	13,337	22.3	12,963	-2.8	12,727	12,601	12,577
Net change in working capital	484	(5,550)	34,694	(8,357)	-	2,033	-	2,477	2,780	3,244
Other operating	9,148	10,640	(27,250)	5,004	-	5,385	7.6	5,714	6,004	6,339
Operating cash flow	65,747	63,598	77,878	62,916	-19.2	77,951	23.9	82,102	85,106	88,985
Tangible capital expenditure	(12,734)	(12,451)	(13,313)	(10,139)	23.8	(10,770)	-6.2	(11,429)	(12,009)	(12,677)
Intangible capital expenditure	(2,499)	(1,068)	(721)	(167)	76.8	0	-	0	0	0
Net (acquisitions) / disposals	(30,634)	(33,147)	32,363	18,849	-41.8	8,000	-57.6	8,000	8,000	8,000
Other investing	(110)	220	(785)	(56)	-	0	-	0	0	0
Investing cash flow	(45,977)	(46,446)	17,544	8,487	-51.6	(2,770)	-	(3,429)	(4,009)	(4,677)
Equity dividends paid	(12,150)	(12,769)	(13,712)	(14,130)	-3.1	(14,059)	0.5	(14,340)	(14,722)	(15,779)
Share issues / (buybacks)	(29,227)	(32,345)	(72,069)	(68,796)	4.5	(65,000)	5.5	(55,500)	(51,000)	(51,000)
Other financing	(1,163)	(1,247)	(2,527)	(1,318)	47.84	0	-	0	0	0
Change in debt & pref shares	(2,500)	0	(6,500)	0	-	0	-	0	0	0
Financing cash flow	(45,040)	(46,361)	(94,808)	(84,244)	11.1	(79,059)	6.2	(69,840)	(65,722)	(66,779)
Cash flow inc/(dec) in cash	(25,270)	(29,209)	614	(12,842)	-	(3,878)	69.8	8,834	15,374	17,528
FX / non cash items	57,189	60,519	(32,409)	(13,493)	58.4	(8,000)	40.7	(8,050)	(8,050)	(8,050)
Balance sheet inc/(dec) in cash	31,919	31,310	(31,795)	(26,335)	17.2	(11,878)	54.9	784	7,324	9,478

Source: Company accounts, UBS estimates. (UBS) metrics use reported figures which have been adjusted by UBS analysts.¹ Cash EPS (UBS, diluted) is calculated using UBS net income adding back depreciation and amortization.

Apple Inc. (AAPL.O)

	09/16	09/17	09/18	09/19E	09/20E	09/21E	09/22E	09/23E
Valuation (x)								
P/E (local GAAP, diluted)	12.6	14.9	15.4	13.5	11.3	9.8	8.8	8.1
P/E (UBS, diluted)	12.6	14.9	15.4	13.5	11.3	9.8	8.8	8.1
P/CEPS	10.3	12.3	13.0	10.8	9.2	8.1	7.3	6.8
Equity FCF (UBS) yield %	8.6	6.9	6.9	7.1	9.1	9.6	9.9	10.3
Net dividend yield (%)	2.1	1.7	1.5	2.0	2.2	2.4	2.6	2.9
P/BV x	4.5	5.4	8.4	8.5	9.6	9.3	8.2	7.3
EV/revenues (core)	2.0	2.5	3.0	2.4	2.2	2.1	2.0	1.9
EV/EBITDA (core)	6.2	8.1	9.7	8.0	7.4	7.1	6.8	6.6
EV/EBIT (core)	7.3	9.4	11.2	9.7	8.9	8.3	8.0	7.6
EV/OpFCF (core)	7.5	10.8	7.7	10.6	8.3	7.9	7.7	6.8
EV/op. invested capital	NM							
Enterprise value (US\$m)	09/16	09/17	09/18	09/19E	09/20E	09/21E	09/22E	09/23E
Market cap.	585,849	728,241	930,920	738,288	738,288	738,288	738,288	738,288
Net debt (cash)	(145,878)	(151,884)	(137,916)	(137,916)	(137,916)	(137,916)	(137,916)	(137,916)
Buy out of minorities	0	0	0	0	0	0	0	0
Pension provisions/other	0	0	0	0	0	0	0	0
Total enterprise value	439,971	576,358	793,004	600,372	600,372	600,372	600,372	600,372
Non core assets	0	0	0	0	0	0	0	0
Core enterprise value	439,971	576,358	793,004	600,372	600,372	600,372	600,372	600,372
Growth (%)	09/16	09/17	09/18	09/19E	09/20E	09/21E	09/22E	09/23E
Revenue	-7.7	6.3	15.9	-4.4	6.0	6.1	5.1	5.6
EBITDA (UBS)	-14.5	1.4	14.4	-8.1	7.3	5.1	3.4	4.2
EBIT (UBS)	-15.7	2.2	15.6	-12.8	9.5	6.4	4.2	5.0
EPS (UBS, diluted)	-10.0	11.0	28.8	-3.3	19.8	14.7	11.6	8.1
Net DPS	10.1	8.0	15.5	12.7	10.0	10.0	10.0	10.0
Margins & Profitability (%)	09/16	09/17	09/18	09/19E	09/20E	09/21E	09/22E	09/23E
Gross profit margin	39.1	38.5	38.3	38.0	38.5	38.5	38.5	38.5
EBITDA margin	32.7	31.2	30.8	29.6	30.0	29.7	29.2	28.8
EBIT margin	27.8	26.8	26.7	24.3	25.1	25.2	25.0	24.9
Net earnings (UBS) margin	21.2	21.1	22.4	20.8	21.4	21.4	21.2	21.1
ROIC (EBIT)	473.6	350.4	278.3	178.9	181.5	216.3	252.5	297.6
ROIC post tax	NM							
ROE (UBS)	36.8	36.9	49.4	55.5	76.1	92.6	95.7	93.2
Capital structure & Coverage (x)	09/16	09/17	09/18	09/19E	09/20E	09/21E	09/22E	09/23E
Net debt / EBITDA	(2.1)	(2.1)	(1.5)	(1.3)	(1.0)	(1.0)	(1.1)	(1.1)
Net debt / total equity %	(117.4)	(114.3)	(114.4)	(114.8)	(124.5)	(131.5)	(134.6)	(135.9)
Net debt / (net debt + total equity) %	NM							
Net debt/EV %	(34.2)	(26.6)	(15.5)	(16.0)	(14.0)	(14.1)	(15.4)	(16.9)
Capex / depreciation %	121.2	122.6	122.1	76.0	83.1	89.8	95.3	100.8
Capex / revenue %	5.9	5.4	5.0	4.0	4.0	4.0	4.0	4.0
EBIT / net interest	NM							
Dividend cover (UBS)	3.8	3.9	4.4	3.7	4.1	4.2	4.3	4.2
Div. payout ratio (UBS) %	26.3	25.6	22.9	26.7	24.6	23.6	23.2	23.6
Revenues by division (US\$m)	09/16	09/17	09/18	09/19E	09/20E	09/21E	09/22E	09/23E
Others	215,639	229,234	265,595	253,919	269,240	285,718	300,224	316,935
Total	215,639	229,234	265,595	253,919	269,240	285,718	300,224	316,935
EBIT (UBS) by division (US\$m)	09/16	09/17	09/18	09/19E	09/20E	09/21E	09/22E	09/23E
Others	60,024	61,344	70,898	61,827	67,697	72,014	75,053	78,770
Total	60,024	61,344	70,898	61,827	67,697	72,014	75,053	78,770

Source: Company accounts, UBS estimates. (UBS) metrics use reported figures which have been adjusted by UBS analysts.

Forecast returns

Forecast price appreciation	+19.6%
Forecast dividend yield	2.1%
Forecast stock return	+21.7%
Market return assumption	7.6%
Forecast excess return	+14.1%

Valuation Method and Risk Statement

Risks to our Apple thesis include (1) product delays or less innovative offerings, particularly a decline in iPhone unit shipments in F17; (2) macro weakness dampening product demand, especially in China; (3) reduced product differentiation resulting in a successful smartphone attack from below; (4) governments looking to regulate Apple as its power increases, and (5) poor platform management. We use P/E to derive our price target for Apple.

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Buy	FSR is > 6% above the MRA.	49%	26%
Neutral	FSR is between -6% and 6% of the MRA.	38%	23%
Sell	FSR is > 6% below the MRA.	14%	14%
Short-Term Rating	Definition	Coverage ³	IB Services ⁴
Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%

Source: UBS. Rating allocations are as of 31 December 2018.

1:Percentage of companies under coverage globally within the 12-month rating category.

2:Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.

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UBS Securities LLC: Timothy Arcuri; Munjal Shah.

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Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
Apple Inc. ^{7, 16}	AAPL.O	Buy	N/A	US\$154.68	29 Jan 2019

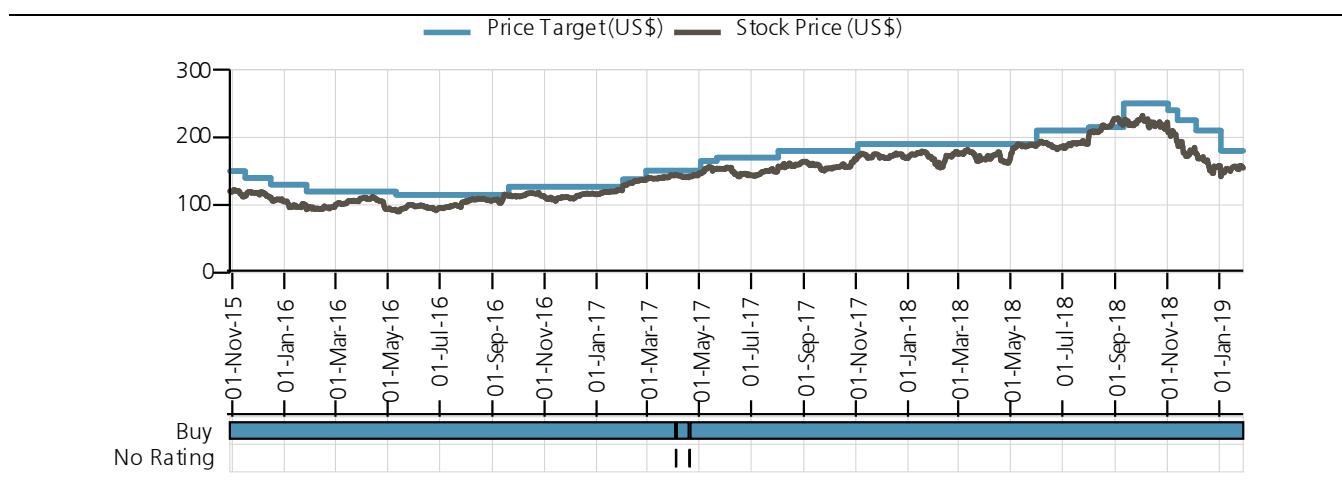
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Apple Inc. (US\$)



Date	Stock Price (US\$)	Price Target (US\$)	Rating
2015-10-29	120.53	150.0	Buy
2015-11-16	114.18	140.0	Buy
2015-12-16	111.34	130.0	Buy
2016-01-27	93.42	120.0	Buy
2016-05-11	92.51	115.0	Buy
2016-09-20	113.57	127.0	Buy
2017-02-01	128.75	138.0	Buy
2017-02-28	136.99	151.0	Buy
2017-04-04	144.77	-	No Rating
2017-04-05	144.02	151.0	Buy
2017-04-20	142.44	-	No Rating
2017-04-21	142.27	151.0	Buy
2017-05-03	147.06	165.0	Buy
2017-05-22	153.99	170.0	Buy
2017-08-02	157.14	180.0	Buy
2017-11-03	172.5	190.0	Buy
2018-06-01	190.24	210.0	Buy
2018-08-01	201.5	215.0	Buy
2018-09-11	223.85	250.0	Buy
2018-11-02	207.48	240.0	Buy
2018-11-13	192.23	225.0	Buy
2018-12-05	176.69	210.0	Buy
2019-01-03	142.19	180.0	Buy

Source: UBS; as of 29 Jan 2019

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Apple

F2Q19 Guide Meets Low-Bar and Bookends Volume Downside; Should Drive Focus Back on Services Opty; Remain Overweight

This quarter was clearly about investors putting bookends around downside risks to Apple's iPhone unit volume outlook and the F2Q19 revenue guidance of \$55-\$59 bn managed to reassure investors that volume risks are largely priced in the shares at current valuation. As we had previewed in our [Jan 28 report](#), buy-side expectations going into the announcement were low and below sell-side revenue consensus of \$59 bn, which in part should drive a positive reaction to the F2Q19 revenue guide today. Beyond the F2Q19 guidance, which we believe implies 20%+ y/y decline in iPhone shipments, investors will look for improvement in y/y volume trends (although still declining) in the remainder of the year, leading to low double-digit percentage volume declines for the year. Outside of the focus on iPhone volumes, there were other silver linings in the report relative to new disclosures on the Services segment, including gross margin of 62.8% in F1Q19, which we believe was at the high-end of investor estimates going into the announcement. Additionally, Services gross margin improvement of +450 bps y/y and +170 bps q/q in F1Q19 is likely to increase investor confidence in long-term expansion of gross-margins with increasing scale of various services opportunities. We believe the better than expected Services margin is likely to drive upside to investor expectations for intrinsic value of AAPL shares, led by: 1) higher portion of the company's profits coming from Services, which investors assign a higher multiple to relative to the hardware-centric businesses; and 2) increase investor confidence in assigning a premium valuation to the Services opportunity relative to hardware businesses. Although yesterday's announcement will do little in terms of addressing some of the medium-term concerns investors have relative to the drivers of revenue growth as the smartphone cycle matures, we believe book-ending the downside on volumes will help in driving investor focus back to the Services opportunity. We maintain our Overweight rating on a combination of medium-term earnings growth, multiple re-rating to more appropriately reflect the Services opportunity, and balance sheet optionality.

- F1Q19 (Dec-end) results in line with pre-announcement.** Total revenues tracked at \$84.3 bn (vs. JPMe and consensus of \$84.0 bn, and guidance of \$84 bn), including iPhone of \$52.0 bn (vs. JPMe of \$51.8 bn), iPad of \$6.7 bn (vs. JPMe of \$6.5 bn), Mac of \$7.4 bn (vs. JPMe of \$7.0 bn), Services of \$10.9 bn (vs. JPMe of \$10.8 bn), and Wearables, Home and Accessories of \$7.3 bn (vs. JPMe of \$8.0 bn). Gross margin tracked in-line (38.0% vs. JPMe of 38.1% and consensus of 38.0%, guidance of 38%) driving EPS of \$4.18 vs. JPMe of \$4.20 and consensus of \$4.17.

Apple Inc. (AAPL;AAPL US)

FYE Sep	2016A	2017A	2018A	2019E (Prev)	2019E (Curr)	2020E (Prev)	2020E (Curr)	2021E (Prev)	2021E (Curr)
EPS (pro forma) (\$)									
Q1 (Dec)	3.18	3.36	3.89	4.20A	4.18A	4.87	4.73	5.71	5.49
Q2 (Mar)	1.90	2.10	2.73	2.44	2.32	2.88	2.85	3.71	3.46
Q3 (Jun)	1.42	1.67	2.34	2.12	2.03	2.59	2.54	3.12	3.03
Q4 (Sep)	1.67	2.07	2.91	2.89	2.81	3.31	3.33	3.71	3.72
FY	8.18	9.19	11.87	11.65	11.35	13.65	13.45	16.25	15.70
Bloomberg EPS FY (\$)	8.27	9.00	11.79	-	11.97	-	13.44	-	14.75

Source: Company data, Bloomberg, J.P. Morgan estimates.

See page 8 for analyst certification and important disclosures, including non-US analyst disclosures.

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Overweight

AAPL, AAPL US

Price: \$154.68

Price Target: \$228.00

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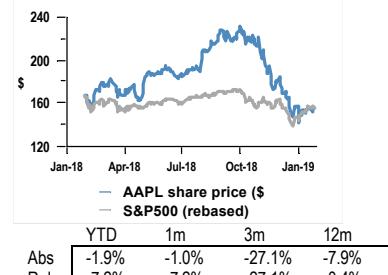
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Price Performance



	YTD	1m	3m	12m
Abs	-1.9%	-1.0%	-27.1%	-7.9%
Rel	-7.2%	-7.2%	-27.1%	-0.4%

Company Data

Price (\$)	154.68
Date Of Price	29 Jan 19
52-week Range (\$)	233.47-142.00
Market Cap (\$ bn)	738.33
Fiscal Year End	Sep
Shares O/S (mn)	4,773
Price Target (\$)	228.00
Price Target End Date	31-Dec-19

- **F2Q19 (Mar) guidance was in line on revenue and met low-bar of investor expectations.** Apple guided to F2Q19 revenue in the range of \$55-\$59 bn for F2Q (vs. JPMe of \$56.7 bn and consensus of \$59.0 bn heading into the announcement), which includes \$1.3 bn negative FX impact. Despite the in-line revenue guidance, gross margin outlook was modestly disappointing (range of 37.0%-38.0% vs. JPMe and consensus of 38.0% heading into the announcement), although explained largely by loss of leverage on lower volumes as well as a headwind of -90 bps y/y and -60 bps q/q from unfavorable FX. As we look to the remainder of the year, we believe the combination of moderating FX headwinds (were currencies to hold at current levels) and increasing memory price tailwinds are likely to help drive a sequential improvement in gross margins from F2Q19 levels.
- **Services momentum continued, helped by growth in installed base of devices.** Services revenue was \$10,875 mn in F1Q19 (vs. JPMe of \$10,761 mn), implying growth of +19% y/y, led by strength from the App Store, Apple Pay, Cloud Services (+40% y/y), Apple Care, App Store Search Ad business and Apple Music (50 mn+ paid subscribers). The strong Services revenue growth included paid subscriptions of 360 mn in F1Q19 (vs. 330 mn in F4Q and 240 mn a year ago) and the company now expects paid subscriptions to exceed 500 mn during 2020, placing it well on track of reaching its target Services revenue by FY20 (\$50 bn adjusted for accounting changes). However, at the same time Apple highlighted certain factors driving a modest deceleration in Services growth trends, relative to the strength in recent quarters, including: 1) **FX impact:** 60% of services revenue is derived outside U.S, thereby negatively impacted by strengthening of US dollar; 2) **App Store in China:** the issue of approval of new gaming titles in China was a headwind in F1Q19; and 3) **Deceleration in Apple Care** as it laps a year of strong performance in 2018.
- **Services opportunity to be driven by installed base growth and broadening content portfolio.** Relative to the drivers of the Services opportunity for the company, management highlighted high-single digit growth in the installed base, which rose to 1.4 bn devices relative to 1.3 bn at end of FY17, and included 900 mn iPhones (which rose +75 mn y/y). The other primary driver of Services growth includes a broader services portfolio, as demonstrated with strong growth in recent service launches including Apple Pay and Apple Music. Additionally, Apple briefly spoke to its intent of providing original video content as well as acceleration in third-party video subscriptions to fully leverage its installed base of Apple TV devices as well as Airplay to fully leverage service opportunities on third-party hardware.
- **Lowering estimates largely on softer gross margin estimates and higher operating expenses.** We are modestly trimming our full-year estimates for FY19E, FY20E, and FY21E to account for lower gross margins (led by loss of volume leverage and higher promotions) and higher operating expenses relative to our expectations. Our December-19 price target of \$228 is unchanged, with a higher target multiple on account of greater contribution to earnings from the Services group valued at a higher multiple in the SOTP-based valuation, offsetting the impact of the lower earnings forecast.

Investment Thesis, Valuation and Risks

Apple (*Overweight; Price Target: \$228.00*)

Investment Thesis

We rate AAPL shares Overweight given our favorable outlook on iPhone and Services revenues relative to investor expectations, catalysts to accelerate revenue growth, and upside risk to our base forecast for +14% earnings CAGR. We see upside on several aspects of the business as well as financials that remain underappreciated by investors, namely the transformation of the company to Services, growth in the installed base, technology leadership, and optionality around capital deployment — all of which together leads us to expect double digit earnings growth and a modest re-rating for the shares.

Valuation

We maintain our December 2019 price target of \$228, which is predicated on a 17.1x blended P/E multiple, which implies a re-rating from NTM trading multiple of 13.0x. Our blended P/E is arrived at based on a SOTP methodology using 11.0x P/E for iPhones, 10.0x for Mac and iPad devices, 25x for Services, and 22.5x for Apple Watch, and 10.0x for Other Products.

Key assumptions used in formulating the price target are:

- **iPhone:** We use an 11.0x P/E multiple for our iPhone earnings estimate in calendar 2020, modest discount to the 14.0x multiple that industry leader Nokia, traded at from 2005 to 2010 when the firm had a leadership position in feature phones.
- **Mac devices:** P/E multiple of 10.0x, modest premium to the 9.5x NTM P/E multiple for competitor HPQ, largely subject to similar industry dynamics, although with higher profitability.
- **iPad devices:** P/E multiple of 10.0x, in line with the multiple we assign for Mac devices as growth opportunities are limited for both notebooks as well as tablets. Additionally, we believe increasing consumption of content on smartphones is likely to substitute purchases of laptops/notebooks as well as tablets in the future.
- **Services:** P/E multiple of 25.0x on the Services segment, in line with the average trading multiple for a peer group of luxury/retail companies (Costco, Estée Lauder and Home Depot), which are leaders in their respective markets and derive a stickiness for product sales through customer loyalty in the form of either membership programs or brand value. We believe the subscription nature of Apple's Services segment, with high visibility of revenue and earnings, warrants it being valued in line with the leading luxury/retail companies.
- **Apple Watch:** P/E multiple of 22.5x, modest discount to 25.0x target multiple we use for the Services group, on account of lower margins and cyclical growth outlook tied to product cycle relative to Services.
- **Other Products:** P/E multiple of 10.0x, in line with legacy hardware devices like iPad, and Mac.

Table 1: AAPL P/E Based Price Target Analysis

\$ in millions, except per share amounts

	NTM Qtrs 1-4	CY20E
JPM Net Income	53,093	58,158
JPM EPS	\$11.89	\$14.22
P/E Multiple	13.0x	
JPM P/E Multiple		17.1x
Total Equity Value	738,327	991,601
Average Diluted Share Count	4,773.3	4,346.9
Implied Share Price	\$154.7	\$228.0
Current Value per Share	\$154.7	\$154.7
Upside vs. Current		47%
Memo:		
(-) Net Cash/(Debt)	96,888	77,504
Enterprise Value	641,438	914,097
JPM EBITDA	73,798	80,524
<i>Implied EV/EBITDA</i>	<i>8.7x</i>	<i>11.4x</i>

Source: J.P. Morgan estimates.

Risks to Rating and Price Target

Industry Downside Risks

Deceleration or contraction in the handset and smartphone market could be faster than expected

Economic conditions or shifting consumer demand could cause greater-than-expected deceleration or contraction in the handset and smartphone markets. This would negatively impact Apple's prospects for growth, and the shares may fail to achieve our target price as a result.

Increase in competitive pressures in international markets

Apple is increasingly participating in international markets, such as China and India, where local players, which are better situated, could leverage their position and pull on levers such as pricing to make the market more competitive. In addition, tariffs enacted by local governments may further hurt Apple's ability to effectively compete in international markets.

Company-Specific Downside Risks

Investment in new business strategies and acquisitions could be fruitless

Apple has historically invested in new business strategies and acquisitions. As such, success on these investments has low visibility at this time and could lead to greater-than-expected liabilities and expense. Additionally, new investments could have a negative impact on current operations by distracting management.

Key man risk around departure of chief executive officer

While risks related to departure of management executives appear considerably lower relative to in the past, we believe the execution on strategic priorities under

CEO Tim Cook's leadership does still present modest risk to the share price, although we see a strong group of executives to support business performance without disruptions.

Litigation with Qualcomm could drive unexpected liabilities

As part of risk mitigation from the ongoing litigation with Qualcomm, Apple has provisioned what management believes could be worst-case payments to Qualcomm in the event of an adverse judgement. However, less favorable outcomes with greater damages awarded to Qualcomm could be a liability for Apple beyond the provisions, and drive downside to our price target.

Table 2: AAPL Summary Table

\$ mns

	1Q - December			2Q - March			3Q - June			4Q- September			Annual				
	2017	2018	2019	2017	2018	2019E	2017	2018	2019E	2017	2018	2019E	2017	2018	2019E	2020E	2021E
Revenue	78,351	88,293	84,310	52,896	61,137	56,677	45,408	53,265	51,720	52,579	62,900	62,287	229,234	265,595	254,993	270,226	288,963
% chg y/y	4.0%	12.7%	-4.5%	4.6%	15.6%	-7.3%	7.2%	17.3%	-2.9%	12.2%	19.6%	-1.0%	6.6%	15.9%	-4.0%	6.0%	6.9%
Cost of Sales	48,175	54,381	52,279	32,305	37,715	35,402	27,920	32,844	32,242	32,648	38,816	38,792	141,048	163,756	158,716	167,342	178,489
SG&A	3,946	4,231	4,783	3,718	4,150	4,704	3,783	4,108	4,603	3,814	4,216	4,672	15,261	16,705	18,762	18,587	19,998
as % of sales	5.0%	4.8%	5.7%	7.0%	6.8%	8.3%	8.3%	7.7%	8.9%	7.3%	6.7%	7.5%	6.7%	6.3%	7.4%	6.9%	6.9%
R&D	2,871	3,407	3,902	2,776	3,378	3,826	2,937	3,701	4,034	2,997	3,750	4,139	11,581	14,236	15,901	16,966	18,250
as % of sales	3.7%	3.9%	4.6%	5.2%	5.5%	6.8%	6.5%	6.9%	7.8%	5.7%	6.0%	6.6%	5.1%	5.4%	6.2%	6.3%	6.3%
Operating Income (COI)	23,359	26,274	23,346	14,097	15,894	12,744	10,768	12,612	10,840	13,120	16,118	14,684	61,344	70,898	61,615	67,330	72,226
operating margin	29.8%	29.8%	27.7%	26.7%	26.0%	22.5%	23.7%	21.0%	25.0%	25.6%	23.6%	26.8%	26.7%	24.2%	24.9%	25.0%	25.0%
bp chg y/y	-155 bp	-6 bp	-207 bp	-102 bp	-65 bp	-351 bp	-14 bp	-4 bp	-272 bp	-15 bp	67 bp	-205 bp	-89 bp	-7 bp	-253 bp	75 bp	8 bp
Other income/(expense)	821	756	560	587	274	300	540	672	300	797	303	300	2,745	2,005	1,460	1,100	1,100
Pre-tax Income	24,180	27,030	23,906	14,684	16,168	13,044	11,308	13,284	11,140	13,917	16,421	14,984	64,089	72,903	63,075	68,430	73,326
Income Tax	6,289	6,965	3,941	3,655	2,346	2,205	2,591	1,765	1,883	3,203	2,296	2,532	15,738	13,372	10,561	11,633	12,355
tax rate %	26.0%	25.8%	16.5%	24.9%	14.5%	16.9%	22.9%	13.3%	16.9%	23.0%	14.0%	16.9%	24.6%	18.3%	16.7%	17.0%	16.9%
Net Income	17,891	20,065	19,965	11,029	13,822	10,840	8,717	11,519	9,257	10,714	14,125	12,452	48,351	59,531	52,514	56,797	60,971
Diluted EPS	\$3.36	\$3.89	\$4.18	\$2.10	\$2.73	\$2.32	\$1.67	\$2.34	\$2.03	\$2.07	\$2.91	\$2.81	\$9.19	\$11.87	\$11.35	\$13.45	\$15.70
Diluted Shares (avg.)	5,328	5,158	4,773	5,262	5,068	4,673	5,233	4,927	4,550	5,184	4,848	4,432	5,263	5,016	4,628	4,224	3,883
EBITDA ex-equity income	26,346	29,019	26,741	16,429	18,633	15,352	13,122	15,277	13,581	15,604	18,872	17,612	71,501	81,801	73,286	78,752	84,448
% chg y/y	-0.9%	10.1%	-7.9%	-0.2%	13.4%	-17.6%	3.9%	16.4%	-11.1%	9.1%	20.9%	-6.7%	2.2%	14.4%	-10.4%	7.5%	7.2%
EBITDA margin	33.6%	32.9%	31.7%	31.1%	30.5%	27.1%	28.9%	28.7%	26.3%	29.7%	30.0%	28.3%	31.2%	30.8%	28.7%	29.1%	29.2%
bp chg y/y	-166 bp	-76 bp	-115 bp	-151 bp	-58 bp	-339 bp	-92 bp	-22 bp	-242 bp	-86 bp	33 bp	-173 bp	-134 bp	-39 bp	-206 bp	40 bp	8 bp
Cash	246,090	285,097	245,035	256,841	267,226	225,166	261,516	243,743	211,618	268,895	237,100	210,290	268,895	237,100	210,290	191,156	172,551
Debt	87,549	122,400	114,730	98,522	121,840	114,730	108,339	114,600	114,730	115,680	114,483	114,730	115,680	114,483	114,730	114,730	114,730
Gross Leverage (ttm)	1.3x	1.7x	1.4x	1.4x	1.6x	1.5x	1.5x	1.5x	1.5x	1.6x	0.9x	1.6x	1.4x	1.6x	1.5x	1.4x	
Net Debt	(158,541)	(162,697)	(130,305)	(158,319)	(145,386)	(110,436)	(153,177)	(129,143)	(96,888)	(153,215)	(122,617)	(95,560)	(153,215)	(122,617)	(95,560)	(76,426)	(57,821)
Net Leverage (ttm)	-2.3x	-2.2x	-1.6x	-2.3x	-1.9x	-1.4x	-2.2x	-1.6x	-1.3x	-2.1x	-1.0x	-1.3x	-2.1x	-1.5x	-1.3x	-1.0x	-0.7x
Operating Cash Flow	27,056	28,293	26,690	12,523	15,130	6,916	8,363	14,488	13,075	15,656	19,523	25,526	63,598	77,434	72,207	77,935	78,309
Capital Expenditures	(3,334)	(2,810)	(3,355)	(2,975)	(4,195)	(3,401)	(2,277)	(3,267)	(3,103)	(3,865)	(3,041)	(3,426)	(12,451)	(13,313)	(13,285)	(13,649)	(13,819)
Free Cash Flow	23,722	25,483	23,335	9,548	10,935	3,515	6,086	11,221	9,972	11,791	16,482	22,100	51,147	64,121	58,922	64,286	64,490
Share repurchases	(10,851)	(10,095)	(8,796)	(7,161)	(22,756)	(20,000)	(7,093)	(20,783)	(20,000)	(7,795)	(19,104)	(20,000)	(32,900)	(72,738)	(68,796)	(70,000)	(70,000)

Source: Company reports and J.P. Morgan estimates

Apple: Summary of Financials

Income Statement - Annual	FY17A	FY18A	FY19E	FY20E	FY21E	Income Statement - Quarterly	1Q19A	2Q19E	3Q19E	4Q19E
Revenue	229,234	265,595	254,993	270,226	288,963	Revenue	84,310A	56,677	51,720	62,287
COGS	(141,048)	(163,756)	(158,716)	(167,342)	(178,489)	COGS	(52,279)A	(35,402)	(32,242)	(38,792)
Gross profit	88,186	101,839	96,278	102,884	110,474	Gross profit	32,031A	21,274	19,477	23,495
SG&A	(15,261)	(16,705)	(18,762)	(18,587)	(19,998)	SG&A	(4,783)A	(4,704)	(4,603)	(4,672)
Adj. EBITDA	71,501	81,801	73,286	78,752	84,448	Adj. EBITDA	26,741A	15,352	13,581	17,612
D&A	(10,157)	(10,903)	(11,671)	(11,422)	(12,222)	D&A	(3,395)A	(2,607)	(2,741)	(2,927)
Adj. EBIT	61,344	70,898	61,615	67,330	72,226	Adj. EBIT	23,346A	12,744	10,840	14,684
Net Interest	-	-	-	-	-	Net Interest	-	-	-	-
Adj. PBT	64,089	72,903	63,075	68,430	73,326	Adj. PBT	23,906A	13,044	11,140	14,984
Tax	(15,738)	(13,372)	(10,561)	(11,633)	(12,355)	Tax	(3,941)A	(2,205)	(1,883)	(2,532)
Minority Interest	-	-	-	-	-	Minority Interest	-	-	-	-
Adj. Net Income	48,351	59,531	52,514	56,797	60,971	Adj. Net Income	19,965A	10,840	9,257	12,452
Reported EPS	9.19	11.87	11.35	13.45	15.70	Reported EPS	4.18A	2.32	2.03	2.81
Adj. EPS	9.19	11.87	11.35	13.45	15.70	Adj. EPS	4.18A	2.32	2.03	2.81
DPS	-	-	-	-	-	DPS	-	-	-	-
Payout ratio	-	-	-	-	-	Payout ratio	-	-	-	-
Shares outstanding	5,263	5,016	4,628	4,224	3,883	Shares outstanding	4,773A	4,673	4,550	4,432
Balance Sheet & Cash Flow Statement	FY17A	FY18A	FY19E	FY20E	FY21E	Ratio Analysis	FY17A	FY18A	FY19E	FY21E
Cash and cash equivalents	20,289	25,913	20,000	20,000	20,000	Gross margin	38.5%	38.3%	37.8%	38.1%
Accounts receivable	17,874	23,186	24,223	23,828	22,989	EBITDA margin	31.2%	30.8%	28.7%	29.1%
Inventories	4,855	3,956	6,896	7,996	8,646	EBIT margin	26.8%	26.7%	24.2%	24.9%
Other current assets	85,627	78,284	72,992	72,992	72,992	Net profit margin	21.1%	22.4%	20.6%	21.0%
Current assets	128,645	131,339	124,111	124,817	124,627	ROE	36.9%	49.4%	56.1%	85.0%
PP&E	33,783	41,304	41,251	43,478	45,075	ROA	13.9%	16.1%	14.7%	16.7%
LT investments	194,714	170,799	148,634	129,500	110,895	ROCE	19.9%	24.6%	24.6%	30.8%
Other non current assets	18,177	22,283	34,686	34,686	34,686	SG&A/Sales	6.7%	6.3%	7.4%	6.9%
Total assets	375,319	365,725	348,682	332,481	315,283	Net debt/equity	71.2%	82.7%	118.3%	177.1%
Short term borrowings	18,473	20,748	21,741	21,741	21,741	P/E (x)	16.8	13.0	13.6	11.5
Payables	49,049	55,888	53,878	59,973	63,705	P/BV (x)	6.1	7.2	8.9	12.2
Other short term liabilities	33,292	40,230	45,410	49,737	50,931	EV/EBITDA (x)	9.0	7.8	8.8	8.1
Current liabilities	100,814	116,866	121,029	131,451	136,377	Dividend Yield	-	-	-	-
Long-term debt	97,207	93,735	92,989	92,989	92,989	Sales/Assets (x)	0.7	0.7	0.7	0.8
Other long term liabilities	43,251	47,977	54,555	54,555	54,555	Interest cover (x)	-	-	-	-
Total liabilities	241,272	258,578	268,573	278,995	283,921	Operating leverage	47.8%	98.2%	328.0%	155.3%
Shareholders' equity	134,047	107,147	80,109	53,486	31,362	104.9%	-	-	-	-
Minority interests	-	-	-	-	-	Revenue y/y Growth	6.6%	15.9%	(4.0%)	6.0%
Total liabilities & equity	375,319	365,725	348,682	332,481	315,283	EBITDA y/y Growth	2.2%	14.4%	(10.4%)	7.5%
BVPS	25.47	21.36	17.31	12.66	8.08	Tax rate	24.6%	18.3%	16.7%	17.0%
y/y Growth	9.6%	(16.1%)	(19.0%)	(26.8%)	(36.2%)	Adj. Net Income y/y Growth	7.1%	23.1%	(11.8%)	8.2%
Net debt/(cash)	95,391	88,570	94,730	94,730	94,730	EPS y/y Growth	12.3%	29.2%	(4.4%)	18.5%
Cash flow from operating activities	63,598	77,434	72,207	77,935	78,309	DPS y/y Growth	-	-	-	-
o/w Depreciation & amortization	10,157	10,903	11,671	11,422	12,222	-	-	-	-	-
o/w Changes in working capital	(5,550)	34,694	6,464	9,717	5,116	-	-	-	-	-
Cash flow from investing activities	(46,446)	16,066	(4,086)	(13,649)	(13,819)	-	-	-	-	-
o/w Capital expenditure	(12,451)	(13,313)	(13,285)	(13,649)	(13,819)	-	-	-	-	-
as % of sales	5.4%	5.0%	5.2%	5.1%	4.8%	-	-	-	-	-
Cash flow from financing activities	(17,347)	(87,876)	(84,008)	(83,421)	(83,094)	-	-	-	-	-
o/w Dividends paid	(12,769)	(13,712)	(13,900)	(13,421)	(13,094)	-	-	-	-	-
o/w Net debt issued/(repaid)	29,014	432	6	0	0	-	-	-	-	-
Net change in cash	(195)	5,624	(15,887)	(19,135)	(18,604)	-	-	-	-	-
Adj. Free cash flow to firm	51,147	64,121	58,922	64,286	64,490	-	-	-	-	-
y/y Growth	(3.7%)	25.4%	(8.1%)	9.1%	0.3%	-	-	-	-	-

Source: Company reports and J.P. Morgan estimates.

Note: \$ in millions (except per-share data). Fiscal year ends Sep. o/w - out of which

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Apple (AAPL, AAPL US) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
 Initiated coverage May 01, 1999. All share prices are as of market close on the previous business day. Break in coverage Oct 13, 2017 - Se

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Apple, Inc. (AAPL)

Overweight

Dec Qtr Largely In-Line, Q2 Outlook Better Than Many Had Feared; OW & \$187 PT

CONCLUSION

Apple reported Dec. quarter revenue and EPS fractionally above the Street's post pre-release downwardly revised estimates. Revenue guidance for the March quarter is 3% below consensus (mid-point), with the gross margin outlook essentially in-line at 37.5% (Street at 38%). Many investors feared a more significant guide down was coming for March quarter revenue and with the "bad news," which turned out not as bad as expected, out of the way, some that had been sidelined will likely re-visit the stock. Maintain OW & \$187 PT.

- Dec. Qtr Results Fractionally Above Consensus Following Pre-Release in Early January.** Apple reported EPS of \$4.18 on revenue of \$84.3B vs. Street expectations for \$4.17 on \$83.97B. Overall iPhone revenue of \$52.0B was slightly below Street at \$52.4B, but well below iPhone estimates prior to the pre-release in early January; the iPhone miss was largely attributed to China weakness, FX and lower upgrade rates. Outside of iPhone, Services was slightly above the Street, while Mac was in-line with consensus, and iPad was slightly above expectations. Revenue guidance for the March quarter is 3% below consensus; a below consensus revenue guide was widely expected by investors. The March quarter outlook specifically includes gross margin of 37-38% on revenue of \$55-\$59B vs. Street at 38% on \$58.98B. Earlier this month, Apple lowered revenue guidance for the December qtr due to weaker than anticipated iPhone sales in Greater China, as well as several emerging markets. China macro weakness was specifically highlighted as a primary reason for the miss, with that weakness being exacerbated by trade tensions with the U.S. and the stronger U.S. Dollar, among other factors.
- Services Growth Decelerates, As Expected; Services GM Expands 450bps Y/Y.** Apple reported services revenue growth of 19% y/y compared to the Street at 19%. Revenue was largely driven by strong growth in paid subscriptions (which is a significant and growing part of services revenue and there are now 360M paid subscriptions under Apple's services umbrella) growth, including Apple Music, iCloud, Apple Care, etc. (details on pg 2). In addition to reporting services revenue, Apple, for the first time, provided a standalone services gross margin of 62.8% for the December quarter (product gross margin was 34.3% in the quarter). Services gross margin was up nearly 500bps y/y.
- Buyback and Return of Cash to SHs.** As part of its effort to bring the company's net cash balance to zero in the coming years (from \$130B net cash at end of Dec-18), the company continues to buyback a significant amount of outstanding shares. In the December quarter, Apple repurchased \$8.2B (38M) of AAPL shares. With the annual FCF the company is generating, the company would have to buyback significantly more shares than what is currently built into our model, suggesting our EPS estimates for '19 & '20 are likely overly conservative, all else equal (we are modeling \$60-70B of annual share repurchase and estimate the company will generate \$60-70B of annual FCF).

RISKS TO ACHIEVEMENT OF PT & RECOMMENDATION

Trends in end-markets; component pricing; competitive pressures.

COMPANY DESCRIPTION

Apple is the leader in the mobile device and digital content distribution markets.

YEAR	REVENUE (US\$ m)								EARNINGS PER SHARE (US\$)							
	Dec	Mar	Jun	Sep	FY	CY	FY RM	CY RM	Dec	Mar	Jun	Sep	FY	CY	FY P/E	CY P/E
2018A	88,293.0	61,137.0	53,265.0	62,900.0	265,595	261,612	2.8x	2.8x	3.89	2.73	2.34	2.91	11.91	12.16	13.0x	12.7x
2019E	84,310.0A	57,966.0	51,329.0	59,362.0	252,968	255,978	2.9x	2.9x	4.18A	2.40	2.32	2.86	11.78	12.16	13.1x	12.7x
2020E	87,321.0	60,966.0	54,144.0	61,601.0	264,032	270,436	2.8x	2.7x	4.59	2.78	2.54	3.11	13.05	13.39	11.9x	11.6x

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PRICE: US\$154.68

TARGET: US\$187.00

14x CY20E EPS of \$13.39

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Changes	Previous	Current
Rating	—	Overweight
Price Tgt	—	US\$187.00
FY19E Rev (mil)	US\$264,714	US\$252,968
FY20E Rev (mil)	US\$278,209	US\$264,032
FY19E EPS	US\$12.78	US\$11.78
FY20E EPS	US\$14.21	US\$13.05
52-Week High / Low	US\$233.47 / US\$142.00	
Shares Out (mil)		4,773.0
Market Cap. (mil)		US\$738,287.6
Avg Daily Vol (000)		43,703
Book Value/Share		US\$25.00
Net Cash Per Share		US\$27.30
Debt to Total Capital		44.1%
Div (ann)		US\$2.92
Yield		1.89%
Fiscal Year End		Sep

Price Performance - 1 Year



Source: Bloomberg

Details on Dec Qtr Results & March Qtr Outlook

Apple Key Metrics	PJC Ests	Street Ests	Actuals*	Actuals vs. Street
<u>Dec-18</u>				
iPhone Revenue	\$52,606	\$52,370	\$51,982	-1%
Services Revenue	\$10,843	\$10,820	\$10,875	1%
Total Revenue	\$84,069	\$83,970	\$84,310	0%
Gross Margin	38.0%	38.0%	38.0%	--
EPS	\$4.16	\$4.17	\$4.18	0%
<u>March-19E</u>				
Total Revenue	\$57,966	\$58,980	\$57,000	
Gross Margin	37.6%	38.0%	37.5%	
EPS	\$2.40	\$2.63	NA	

* Guidance "Actuals" are company guidance

Source: Piper Jaffray, FactSet Research

Services Revenue Growth In-Line With Expectations for Dec Qtr

Services accounted for 13% of Apple revenue in the Dec-18 quarter, growing 19% y/y, from 17% (or 27% on an organic basis) in the Sept. qtr and in-line with consensus expectations (Street was modeling 19% y/y). The company reiterated its goal to double services revenue from FY16 to FY20, which would result in revenue of nearly \$50B for the segment by FY20 (we believe the company is being overly conservative and are modeling FY20 services revenue of \$54.1B). Services revenue has the obvious appeal of being relatively more recurring in nature and having a higher margin (Apple reported a December quarter services gross margin of 62.8% vs. overall company gross margin of 38%). The primary drivers of services revenue include growth of subscriptions (Apple Music, Apple Care, iCloud, etc.) and Apple Pay. Management indicated that the company now has >360M paid subscriptions across the services portfolio, which is up 120M y/y. The company expects paid subscriptions to exceed 500M sometime in FY20.

Maintain AAPL Price Target of \$187

We are maintaining our AAPL price target of \$187. Our price target multiple remains unchanged at 14x, but is now based on CY20E EPS of \$13.39 (previously based on CY19E EPS of \$13.33). We remain confident in this price target multiple, but are shifting it forward as we transition into a new calendar year.

Summary of AAPL Ests Through FY21E

The table below provides a summary of key metrics for AAPL through FY21E.

AAPL Summary Model

Key Metric	FY16	FY17	FY18	FY19E	FY20E	FY21E
iPhone Revenue (\$M)	\$136,700	\$141,319	\$164,888	\$138,801	\$138,500	\$143,122
iPad Revenue (\$M)	\$20,628	\$19,222	\$18,380	\$19,852	\$19,967	\$19,878
Mac Revenue (\$M)	\$22,831	\$25,850	\$25,198	\$26,274	\$26,332	\$26,392
Wearables Revenue (\$M)	\$11,132	\$12,863	\$17,381	\$21,636	\$25,171	\$29,033
Services Revenue (\$M)	\$24,348	\$29,980	\$39,748	\$46,405	\$54,061	\$61,920
Total Revenue (\$M)	\$215,639	\$229,234	\$265,595	\$252,968	\$264,032	\$280,344
% Rev Growth	-8%	6%	16%	-5%	4%	6%
Operating Margin	27.8%	26.8%	26.7%	25.6%	25.9%	25.8%
EPS	\$8.31	\$9.21	\$11.91	\$11.78	\$13.05	\$14.58
% EPS Growth	-10%	11%	29%	-1%	11%	12%

Source: Company Data and Piper Jaffray

Apple, Inc.

Income Statement
Last Updated 01/29/2019



REALIZE THE POWER
OF PARTNERSHIP._{TM}

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Income Statement (\$ in millions except EPS)	FY17	2018				FY18	2019E				FY19E	2020E				FY20E	FY21E
		Dec-17	Mar-18	Jun-18	Sep-18		Dec-18	Mar-19E	Jun-19E	Sep-19E		Dec-19E	Mar-20E	Jun-20E	Sep-20E		
Net Sales	\$229,234	\$88,293	\$61,137	\$53,265	\$62,900	\$265,595	\$84,310	\$57,966	\$51,329	\$59,362	\$252,968	\$87,321	\$60,966	\$54,144	\$61,601	\$264,032	\$280,344
Cost of Sales	141,049	54,381	37,715	32,844	38,816	163,756	52,279	36,152	31,272	36,349	156,053	53,617	37,257	33,100	37,707	161,682	172,507
Gross Profit	88,186	33,912	23,422	20,421	24,084	101,839	32,031	21,814	20,057	23,013	96,915	33,704	23,709	21,044	23,894	102,350	107,837
R&D	11,581	3,407	3,378	3,701	3,750	14,236	3,902	3,710	3,490	3,539	14,641	4,041	3,963	3,736	3,758	15,498	16,250
SG&A	15,261	4,231	4,150	4,108	4,216	16,705	4,783	4,811	3,901	3,979	17,474	4,954	5,121	4,169	4,189	18,433	19,368
Total Op Expense	26,842	7,638	7,528	7,809	7,966	30,941	8,685	8,521	7,391	7,518	32,115	8,995	9,084	7,905	7,947	33,931	35,617
Operating Income	\$61,344	\$26,274	\$15,894	\$12,612	\$16,118	\$70,898	\$23,346	\$13,293	\$12,665	\$15,495	\$64,800	\$24,709	\$14,625	\$13,139	\$15,947	\$68,419	\$72,220
Int & Other Expense	2,745	756	274	672	303	2,005	560	300	300	300	1,460	300	300	300	300	1,200	1,200
Pre-Tax Income	64,089	27,030	16,168	13,284	16,421	72,903	23,906	13,593	12,965	15,795	66,260	25,009	14,925	13,439	16,247	69,619	73,420
Income Taxes	15,738	6,965	2,346	1,765	2,296	13,372	3,941	2,311	2,204	2,685	11,141	4,251	2,537	2,285	2,762	11,835	12,481
Net Income	\$48,351	\$20,065	\$13,822	\$11,519	\$14,125	\$59,531	\$19,965	\$11,282	\$10,761	\$13,110	\$55,119	\$20,757	\$12,387	\$11,154	\$13,485	\$57,784	\$60,939
GAAP EPS	\$9.21	\$3.89	\$2.73	\$2.34	\$2.91	\$11.91	\$4.18	\$2.40	\$2.32	\$2.86	\$11.78	\$4.59	\$2.78	\$2.54	\$3.11	\$13.05	\$14.58
Diluted Shares	5,252	5,158	5,068	4,927	4,848	5,000	4,773	4,711	4,648	4,586	4,680	4,523	4,461	4,398	4,336	4,430	4,180
% of Sales:																	
Gross Margin	38.5%	38.4%	38.3%	38.3%	38.3%	38.3%	38.0%	37.6%	39.1%	38.8%	38.3%	38.6%	38.9%	38.9%	38.8%	38.8%	38.5%
R&D	5.1%	3.9%	5.5%	6.9%	6.0%	5.4%	4.6%	6.4%	6.8%	6.0%	5.8%	4.6%	6.5%	6.9%	6.1%	5.9%	5.8%
SG&A	6.7%	4.8%	6.8%	7.7%	6.7%	6.3%	5.7%	8.3%	7.6%	6.7%	6.9%	5.7%	8.4%	7.7%	6.8%	7.0%	6.9%
Operating Margin	26.8%	29.8%	26.0%	23.7%	25.6%	26.7%	27.7%	22.9%	24.7%	26.1%	25.6%	28.3%	24.0%	24.3%	25.9%	25.9%	25.8%
Tax Rate	24.6%	25.8%	14.5%	13.3%	14.0%	18.3%	16.5%	17.0%	17.0%	17.0%	16.8%	17.0%	17.0%	17.0%	17.0%	17.0%	17.0%
Yr/Yr growth:																	
Net Sales	6.3%	12.7%	15.6%	17.3%	19.6%	15.9%	-4.5%	-5.2%	-3.6%	-5.6%	-4.8%	3.6%	5.2%	5.5%	3.8%	4.4%	6.2%
Operating Income	4.4%	11.8%	10.1%	17.5%	18.0%	13.8%	-11.6%	-15.9%	-2.4%	-3.8%	-9.1%	4.6%	9.8%	3.7%	2.9%	5.1%	5.5%
Net income	5.8%	12.2%	25.3%	32.1%	31.8%	23.1%	-0.5%	-18.4%	-6.6%	-7.2%	-7.4%	4.0%	9.8%	3.7%	2.9%	4.8%	5.5%
GAAP EPS	10.8%	15.9%	30.1%	40.4%	41.0%	29.3%	7.5%	-12.2%	-1.0%	-1.9%	-1.1%	9.7%	15.9%	9.5%	8.8%	10.8%	11.8%

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Source: Piper Jaffray estimates and Company Filings

Apple, Inc.

1/29/19

Balance Sheet \$ In Millions	FY17	2018				FY18	2019E				FY19E	2020E				FY20E	FY21E	
		Dec-17	Mar-18	Jun-18	Sep-18		Dec-18	Mar-19E	Jun-19E	Sep-19E		Dec-19E	Mar-20E	Jun-20E	Sep-20E			
Current Assets:																		
Cash & Equivalents	20,289	27,491	45,059	31,971	25,913	25,913	44,771	35,075	35,613	47,704	47,704	66,207	64,389	65,602	79,226	79,226	115,898	
Short-Term marketable securities	53,892	49,662	42,881	38,999	40,388	40,388	41,656	41,656	41,656	41,656	41,656	41,656	41,656	41,656	41,656	41,656	41,656	
Accounts Receivable	17,874	23,440	14,324	14,104	23,186	23,186	18,077	12,760	12,843	20,932	20,932	17,509	13,420	13,547	21,721	21,721	22,906	
Inventories	4,855	4,421	7,662	5,936	3,956	3,956	4,988	7,345	5,652	3,705	3,705	5,116	7,569	5,982	3,843	3,843	4,034	
Vendor Non-Trade Receivables	17,799	27,459	8,084	12,263	25,809	25,809	18,904	19,093	19,284	19,477	19,477	19,672	19,868	20,067	20,268	20,268	21,091	
Other current assets	13,936	11,337	12,043	12,488	12,087	12,087	12,432	12,556	12,682	12,809	12,809	12,937	13,066	13,197	13,329	13,329	13,870	
Total Current Assets	128,645	143,810	130,053	115,761	131,339	131,339	140,828	128,485	127,729	146,282	146,282	163,096	159,968	160,051	180,043	180,043	219,454	
Long-Term Marketable Securities	194,714	207,944	179,286	172,773	170,799	170,799	158,608	150,678	143,144	135,987	135,987	129,187	122,728	116,591	110,762	110,762	90,216	
PP&E, net	33,783	33,679	35,077	38,117	41,304	41,304	39,597	42,597	45,597	48,597	48,597	51,597	54,597	57,597	60,597	60,597	60,597	
Goodwill	5,717	5,889	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Acquired Intangible Assets	2,298	2,149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Non-Current Assets	10,162	13,323	23,086	22,546	22,283	22,283	34,686	34,686	34,686	34,686	34,686	34,686	34,686	34,686	34,686	34,686	34,686	
Total Assets	375,319	406,794	367,502	349,197	365,725	365,725	373,719	356,445	351,156	365,552	365,552	378,566	371,979	368,926	386,088	386,088	404,954	
Current Liabilities:																		
Accounts Payable	49,049	62,985	34,311	38,489	55,888	55,888	44,293	40,576	41,063	53,426	53,426	52,392	42,676	43,315	55,441	55,441	58,465	
Accrued Expenses	25,744	26,281	26,756	25,184	33,327	33,327	36,703	37,070	37,441	37,815	37,815	38,193	38,575	38,961	39,351	39,351	40,948	
Deferred Revenue	7,548	8,044	7,775	7,403	5,966	5,966	5,546	5,823	6,114	6,420	6,420	6,741	7,078	7,432	7,804	7,804	9,486	
Commercial Paper	11,977	11,980	11,980	11,974	11,964	11,964	11,969	11,969	11,969	11,969	11,969	11,969	11,969	11,969	11,969	11,969	11,969	
Current Portion LT debt	6,496	6,498	8,498	5,498	8,784	8,784	9,772	9,772	9,772	9,772	9,772	9,772	9,772	9,772	9,772	9,772	9,772	
Total Current Liabilities	100,814	115,788	89,320	88,548	115,929	115,929	108,283	105,211	106,359	119,402	119,402	119,068	110,071	111,449	124,336	124,336	130,640	
Deferred Revenue, non-current	2,836	3,131	3,087	2,878	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-Term Debt	97,207	103,922	101,362	97,128	93,735	93,735	92,989	92,989	92,989	92,989	92,989	92,989	92,989	92,989	92,989	92,989	92,989	
Other non-current liabilities	40,415	43,754	46,855	45,694	48,914	48,914	54,555	54,555	54,555	54,555	54,555	54,555	54,555	54,555	54,555	54,555	54,555	
Total Liabilities	241,272	266,595	240,624	234,248	258,578	258,578	255,827	252,755	253,903	266,946	266,946	266,612	257,615	258,993	271,880	271,880	278,184	
Total Liab & SH Equity	375,319	406,794	367,502	349,197	365,725	365,725	373,719	356,445	351,156	365,552	365,552	378,566	371,979	368,926	386,088	386,088	404,954	
Key Ratios:																		
DSO		23	20	23	32		18	20	23	32		18	20	23	32			
Inventory Turns		49.2	19.7	22.1	39.2		41.9	19.7	22.1	39.2		41.9	19.7	22.1	39.2			
AP/Sales		0.3	0.4	0.5	0.5		0.4	0.7	0.8	0.9		0.6	0.7	0.8	0.9			
Book Val/Shr		27	25	23	22		25	22	21	22		25	26	25	26			
Cash/Shr		31.54	28.68	26.21	25.29		27.30	23.92	22.74	24.12		27.04	25.57	24.81	26.97			
LTD/Cap		42.6	44.4	45.8	46.7		44.1	47.3	48.9	48.5		45.4	44.8	45.8	44.9			

Source: Piper Jaffray estimates and Company Filings

Apple, Inc.

1/29/19

Cash Flow \$ In Millions	FY17	2018				FY18	2019E				FY19E	2020E				FY20E	FY21E	
		Dec-17	Mar-18	Jun-18	Sep-18		Dec-18	Mar-19E	Jun-19E	Sep-19E		Dec-19E	Mar-20E	Jun-20E	Sep-20E			
CF FROM OPERATING ACTIVITIES:																		
Net income	48,350.5	20,065.0	13,822.0	11,519.0	14,125.0	59,531.0	19,965.0	11,282.3	10,761.2	13,110.1	55,118.7	20,757.2	12,387.5	11,154.0	13,485.3	57,784.0	60,938.5	
Adjustments to net income:																		
Depreciation and amortization	10,157.0	2,745.0	2,739.0	2,665.0	2,754.0	10,903.0	3,395.0	3,429.0	3,463.2	3,497.9	13,785.1	3,532.9	3,568.2	3,603.9	3,639.9	14,344.8	14,927.2	
Share-based compensation expense	4,840.0	1,296.0	1,348.0	1,351.0	1,345.0	5,340.0	1,559.0	1,605.8	1,653.9	1,703.6	6,522.3	1,754.7	1,807.3	1,861.5	1,917.4	7,340.9	8,262.2	
Deferred income tax expense	5,966.0	(33,748.0)	(487.0)	1,126.0	519.0	(32,590.0)	(1.0)	(1.0)	(1.1)	(1.1)	(4.2)	(1.1)	(1.2)	(1.2)	(1.2)	(4.7)	(5.3)	
Chg in operating assets and liabilities:																		
Accounts receivable, net	(2,093.0)	(5,570.0)	9,093.0	233.0	(9,078.0)	(5,322.0)	5,130.0	5,317.1	(82.8)	(8,089.0)	2,275.3	3,422.6	4,088.9	(126.8)	(8,174.1)	(789.4)	(1,184.7)	
Inventories	(2,723.0)	434.0	(3,241.0)	1,693.0	1,942.0	828.0	(1,076.0)	(2,356.5)	1,692.6	1,947.4	207.4	(1,411.1)	(2,453.4)	1,586.7	2,139.3	(138.4)	(191.1)	
Vendor non-trade receivables	(4,254.0)	(9,660.0)	19,375.0	(4,179.0)	(13,546.0)	(8,010.0)	6,905.0	(189.0)	(190.9)	(192.8)	6,332.2	(194.8)	(196.7)	(198.7)	(200.7)	(790.8)	(822.9)	
Other current and non-current assets	(5,484.0)	(197.0)	(856.0)	988.0	(802.0)	(867.0)	(886.0)	(12,872.3)	(249.9)	(252.4)	(14,260.6)	(128.1)	(257.5)	(260.0)	(262.6)	(908.2)	(945.1)	
Accounts payable	9,618.0	12,602.0	(25,822.0)	2,081.0	20,314.0	9,175.0	(8,501.0)	(3,716.5)	486.7	12,362.9	632.1	(1,033.8)	(9,716.1)	639.0	12,125.9	2,014.9	3,023.7	
Deferred Revenue	(626.0)	569.0	(91.0)	(581.0)	59.0	(44.0)	(370.0)	(370.0)	(370.0)	(370.0)	(1,480.0)	(370.0)	(370.0)	(370.0)	(1,480.0)	(1,480.0)		
Other current and non-current liabilities	(154.0)	39,757.0	(750.0)	(2,408.0)	1,891.0	38,490.0	570.0	0.0	0.0	0.0	570.0	0.0	0.0	0.0	0.0	0.0	0.0	
Net cash provided by op activities	63,597.5	28,293.0	15,130.0	14,488.0	19,523.0	77,434.0	26,690.0	2,128.8	17,163.0	23,716.5	69,698.3	26,328.4	8,857.0	17,888.3	24,299.2	77,373.0	82,522.6	
CF FROM INVESTING ACTIVITIES:																		
Purchase of marketable securities	(159,486.0)	(41,272.0)	(7,177)	(7,684)	(15,223)	(71,356.0)	(7,077.0)	(20,000)	(20,000)	(20,000)	(67,077.0)	(7,077)	(20,000)	(20,000)	(20,000)	(67,077.0)	(67,077.0)	
Proceeds from maturities of marketable securities	31,775.0	14,048.0	17,836	14,406	9,591	55,881.0	7,203.0	15,000	15,000	15,000	52,203.0	7,203	15,000	15,000	15,000	52,203.0	52,203.0	
Proceeds from sales of marketable securities	94,564.0	16,801.0	22,141	2,672	6,224	47,838.0	9,723.0	12,000	12,000	12,000	45,723.0	9,723	12,000	12,000	12,000	45,723.0	45,723.0	
Payments made in connection with business acqui	(329.0)	(173.0)	(132.0)	(126.0)	(290.0)	(721.0)	(167.0)	(167.0)	(167.0)	(167.0)	(668.0)	(167.0)	(167.0)	(167.0)	(167.0)	(668.0)	(668.0)	
Payments for acquisition of property, plant and equ	(12,451.0)	(2,810.0)	(4,195)	(3,267)	(3,041)	(13,313.0)	(3,355.0)	(3,000)	(3,000)	(3,000)	(12,355.0)	(3,000)	(3,000)	(3,000)	(3,000)	(12,000.0)	(12,000.0)	
Payments for acquisition of intangible assets	(344.0)	0.0	0	0	0	0.0	0.0	(100)	(100)	(100)	(300.0)	(100)	(100)	(100)	(100)	(400.0)	(400.0)	
Payments for strategic investments	(395.0)	(141.0)	141	(1,478)	(40)	(1,518.0)	(427.0)	0	0	0	(427.0)	0	0	0	0	0.0	0.0	
Other	220.0	(43.0)	96	(576)	(222)	(745.0)	0	0	0	0	(56.0)	0	0	0	0	0.0	0.0	
Net cash provided by investing activities	(46,446.0)	(13,590.0)	28,710.0	3,947.0	(3,001.0)	16,066.0	5,844.0	3,733.0	3,733.0	3,733.0	17,043.0	6,582.0	3,733.0	3,733.0	3,733.0	17,781.0	17,781.0	
CF FROM FINANCING ACTIVITIES:																		
Proceeds from issuance of common stock	555.0	0.0	327.0	1.0	341.0	669.0	0.0	300.0	300.0	300.0	900.0	300.0	300.0	300.0	300.0	1,200.0	1,200.0	
Excess tax benefits from equity awards	627.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	60.0	60.0	180.0	60.0	60.0	60.0	60.0	240.0	240.0	
Payments for taxes related to net share settlement	(1,874.0)	(1,038.0)	(152.0)	(1,077.0)	(260.0)	(2,527.0)	(1,318.0)	(650.0)	(650.0)	(650.0)	(3,268.0)	(700.0)	(700.0)	(700.0)	(700.0)	(2,800.0)	(2,800.0)	
Payments for dividends and dividend equivalents	(12,769.0)	(3,339.0)	(3,190.0)	(3,653.0)	(3,530.0)	(13,712.0)	(3,568.0)	(3,568.0)	(3,568.0)	(3,568.0)	(14,272.0)	(3,568.0)	(3,568.0)	(3,568.0)	(3,568.0)	(14,272.0)	(14,272.0)	
Repurchase of common stock	(32,900.0)	(10,095.0)	(22,756.0)	(20,783.0)	(19,104.0)	(72,738.0)	(8,796.0)	(18,700.0)	(18,500.0)	(18,500.0)	(64,496.0)	(17,500.0)	(17,500.0)	(17,500.0)	(17,500.0)	(70,000.0)	(70,000.0)	
Proceeds from issuance of term debt, net	28,662.0	6,969.0	0.0	0.0	0.0	6,969.0	0.0	7,000.0	7,000.0	7,000.0	21,000.0	7,000.0	7,000.0	7,000.0	7,000.0	28,000.0	28,000.0	
Repayments of term debt	(3,500.0)	0.0	(500.0)	(6,000.0)	0.0	(6,500.0)	0.0	0.0	(5,000.0)	0.0	(5,000.0)	0.0	0.0	(6,000.0)	0.0	(6,000.0)	(6,000.0)	
Change in commercial paper, net	3,852.0	2.0	(1.0)	(11.0)	(27.0)	(37.0)	6.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Net cash provided by financing activities	(17,347.0)	(7,501.0)	(26,272.0)	(31,523.0)	(22,580.0)	(87,876.0)	(13,676.0)	(15,558.0)	(20,358.0)	(15,358.0)	(64,950.0)	(14,408.0)	(14,408.0)	(20,408.0)	(14,408.0)	(63,632.0)	(63,632.0)	
Net increase (decrease) in cash and cash equiv.	(195.5)	7,202.0	17,568.0	(13,088.0)	(6,058.0)	5,624.0	18,858.0	(9,696.2)	538.0	12,091.5	21,791.3	18,502.4	(1,818.0)	1,213.3	13,624.2	31,522.0	36,671.6	
Cash and cash equivalents at beginning of period	20,484.0	20,289.0	27,491.0	45,059.0	31,971.0	20,289.0	25,913.0	44,771.0	35,074.8	35,612.8	25,913.0	47,704.3	66,206.7	64,388.8	65,602.1	47,704.3	79,226.3	
Cash and cash equivalents at end of period	20,288.5	27,491.0	45,059.0	31,971.0	25,913.0	44,771.0	35,074.8	47,704.3	47,704.3	66,206.7	64,388.8	65,602.1	79,226.3	115,897.9				

Source: Piper Jaffray estimates and Company Filings

Apple, Inc.

1/29/19

Sales Analysis (\$M and units in millions)		FY17	2018				FY18	2019E				FY19E	2020E				FY20E	FY21E
			Dec-17	Mar-18	Jun-18	Sep-18		Dec-18	Mar-19E	Jun-19E	Sep-19E		Dec-19E	Mar-20E	Jun-20E	Sep-20E		
iPhone																		
Revenue	\$141,319.0	\$61,104.0	\$37,559.0	\$29,470.0	\$36,755.0	\$164,888.0	\$51,982.0	\$31,925.2	\$24,754.8	\$30,139.1	\$138,801.1	\$51,982.0	\$31,925.2	\$24,754.8	\$29,837.7	\$138,499.7	\$143,122.3	
% of Sales	62%	69%	61%	55%	58%	62%	62%	55%	48%	51%	55%	60%	52%	46%	48%	52%	51%	
Y/Y Rev Growth	3%	12%	13%	19%	27%	17%	-15%	-15%	-16%	-18%	-16%	0%	0%	0%	-1%	0%	3%	
iPad																		
Revenue	\$19,222.0	\$5,755.0	\$4,008.0	\$4,634.0	\$3,983.0	\$18,380.0	\$6,729.0	\$4,168.3	\$4,773.0	\$4,182.2	\$19,852.5	\$6,796.3	\$4,210.0	\$4,820.8	\$4,140.3	\$19,967.4	\$19,877.8	
% of Sales	8%	7%	7%	9%	6%	7%	8%	7%	9%	7%	8%	8%	7%	9%	7%	8%	7%	
Y/Y Rev Growth	-7%	4%	3%	-7%	-18%	-4%	17%	4%	3%	5%	8%	1%	1%	1%	-1%	1%	0%	
Mac																		
Revenue	\$25,850.0	\$6,824.0	\$5,776.0	\$5,258.0	\$7,340.0	\$25,198.0	\$7,416.0	\$5,891.5	\$5,626.1	\$7,340.0	\$26,273.6	\$7,416.0	\$5,950.4	\$5,626.1	\$7,340.0	\$26,332.5	\$26,392.0	
% of Sales	11%	8%	9%	10%	12%	9%	9%	10%	11%	12%	10%	8%	10%	10%	12%	10%	9%	
Y/Y Rev Growth	13%	-6%	-1%	-6%	2%	-3%	9%	2%	7%	0%	4%	0%	1%	0%	0%	0%	0%	
Wearables, Home & Accessories																		
Revenue	\$12,863.0	\$5,481.0	\$3,944.0	\$3,733.0	\$4,223.0	\$17,381.0	\$7,308.0	\$4,653.9	\$4,479.6	\$5,194.3	\$21,635.8	\$8,185.0	\$5,584.7	\$5,375.5	\$6,025.4	\$25,170.6	\$29,032.7	
% of Sales	6%	6%	6%	7%	7%	7%	9%	8%	9%	9%	9%	9%	9%	10%	10%	10%	10%	
Y/Y Rev Growth	16%	36%	37%	36%	31%	35%	33%	18%	20%	23%	24%	12%	20%	20%	16%	16%	15%	
Product Revenue	\$199,254.0	\$79,164.0	\$51,287.0	\$43,095.0	\$52,301.0	\$225,847.0	\$73,435.0	\$46,638.9	\$39,633.5	\$46,855.5	\$206,562.9	\$74,379.3	\$47,670.3	\$40,577.1	\$47,343.4	\$209,970.1	\$218,424.8	
% of Sales	87%	90%	84%	81%	83%	85%	87%	80%	77%	79%	82%	85%	78%	75%	77%	80%	78%	
Y/Y Rev Growth	4%	11%	12%	13%	19%	13%	-7%	-9%	-8%	-10%	-9%	1%	2%	2%	1%	2%	4%	
<i>Product Revenue Gross Margin</i>	--	36.1%				33.7%				34.3%				32%				32%
Product Gross Profit	--					\$25,188.21	\$15,017.7	\$13,039.4	\$15,509.2	\$68,754.5	\$25,809.60	\$15,731.2	\$12,903.5	\$15,339.3	\$69,783.6	\$70,685.6		
Services Revenue	\$29,980.0	\$9,129.0	\$9,850.0	\$10,170.0	\$10,599.0	\$39,748.0	\$10,875.0	\$11,327.5	\$11,695.5	\$12,506.8	\$46,404.8	\$12,941.3	\$13,295.7	\$13,566.8	\$14,257.8	\$54,061.5	\$61,919.6	
% of Sales	13%	10%	16%	19%	17%	15%	13%	20%	23%	21%	18%	15%	22%	25%	23%	20%	22%	
Y/Y Rev Growth	23%	27%	40%	40%	25%	33%	19%	15%	15%	18%	17%	19%	17%	16%	14%	16%	15%	
<i>Services Revenue Gross Margin</i>	--	58.3%				61.1%				62.8%				60%				60%
Services Gross Profit	--					\$6,829.5	\$6,796.5	\$7,017.3	\$7,504.1	\$28,147.4	\$7,894.2	\$7,977.4	\$8,140.1	\$8,554.7	\$32,566.3	\$37,151.8		
Total Revenue	\$229,234.0	\$88,293.0	\$61,137.0	\$53,265.0	\$62,900.0	\$265,595.0	\$84,310.0	\$57,966.4	\$51,329.0	\$59,362.4	\$252,967.8	\$87,320.5	\$60,965.9	\$54,143.9	\$61,601.2	\$264,031.5	\$280,344.4	
Y/Y Rev Growth	6.3%	12.7%	15.6%	17.3%	19.6%	15.9%	-4.5%	-5.2%	-3.6%	-5.6%	-4.8%	3.6%	5.2%	5.5%	3.8%	4.4%	6.2%	
Active Installed Base (million)	1,220	1,270	1,300	1,325	1,355	1,355	1,400	1,417	1,444	1,477	1,477	1,512	1,530	1,545	1,595	1,595	1,707	
Y/Y Installed Base Growth	14%	13%	13%	12%	11%	11%	10%	9%	9%	9%	9%	8%	8%	7%	8%	8%	7%	
Annual (TTM) Services Rev Per Active	\$24.6	\$25.1	\$26.7	\$28.4	\$29.3	\$29.3	\$29.6	\$30.3	\$30.8	\$31.4	\$31.4	\$32.1	\$33.0	\$33.9	\$33.9	\$33.9	\$36.3	
Y/Y Services Rev/Device Growth	8%	11%	16%	21%	19%	19%	18%	13%	8%	7%	7%	8%	9%	10%	8%	8%	7%	

Source: Piper Jaffray estimates and Company Filings

IMPORTANT RESEARCH DISCLOSURES



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Notes: The boxes on the Rating and Price Target History chart above indicate the date of the fundamental Equity Research Note, the rating and the price target. Each box represents a date on which an analyst made a change to a rating or price target, except for the first box, which may only represent the first Note written during the past three years.

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- R: Resuming Coverage
- T: Transferring Coverage
- D: Discontinuing Coverage
- S: Suspending Coverage
- OW: Overweight
- N: Neutral
- UW: Underweight
- NA: Not Available
- UR: Under Review

Distribution of Ratings/IB Services				
Piper Jaffray		IB Serv./Past 12 Mos.		
Rating	Count	Percent	Count	Percent
BUY [OW]	422	65.33	117	27.73
HOLD [N]	213	32.97	18	8.45
SELL [UW]	11	1.70	0	0.00

Note: Distribution of Ratings/IB Services shows the number of companies currently covered by fundamental equity research in each rating category from which Piper Jaffray and its affiliates received compensation for investment banking services within the past 12 months. FINRA rules require disclosure of which ratings most closely correspond with "buy," "hold," and "sell" recommendations. Piper Jaffray ratings are not the equivalent of buy, hold or sell, but instead represent recommended relative weightings. Nevertheless, Overweight corresponds most closely with buy, Neutral with hold and Underweight with sell. See Stock Rating definitions below.

Analyst Certification — Michael J. Olson, Sr Research Analyst

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Underweight (UW): Anticipated to underperform relative to the median of the group of stocks covered by the analyst.

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January 30, 2019

Rating:

OUTPERFORM

Price:

\$154.68

12-Month Price Target:

\$200.00

Analysts

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Company Information

Shares Outst (M)	4,650.0
52-Week Range	\$142.19 - \$231.26
Market Cap (M)	\$719,262.0
Enterprise Value (M)	\$747,565

REV (M)		in \$		
FYE Sep	2018A	2019E	2020E	
Q1 Dec	88,293.0A	84,310.0A	85,937.6E	
Previous		84,586.5E		
Q2 Mar	61,137.0A	57,922.8E	60,286.9E	
Previous		59,924.3E		
Q3 Jun	53,265.0A	52,589.7E	55,137.9E	
Previous		53,415.6E		
Q4 Sep	62,900.0A	61,977.5E	64,880.8E	
Previous		62,833.7E		
Year*	265,595.0A	256,800.0E	266,243.2E	
Previous		260,760.2E	270,395.1E	

EPS		in \$		
FYE Sep	2018A	2019E	2020E	
Q1 Dec	3.89A	4.18A	4.49E	
Previous		4.20E		
Q2 Mar	2.73A	2.45E	2.88E	
Previous		2.85E		
Q3 Jun	2.34A	2.19E	2.55E	
Previous		2.38E		
Q4 Sep	2.91A	2.73E	3.16E	
Previous		2.97E		
Year*	11.91A	11.61E	13.10E	
Previous		12.44E	14.01E	
P/E	13.0x	13.3x	11.8x	

Pricing data provided by Thomson Reuters.

*Numbers may not add up due to rounding.

Apple (AAPL)

Cook & Apple Take a Small Step in the Right Direction; Heavy Lifting Ahead

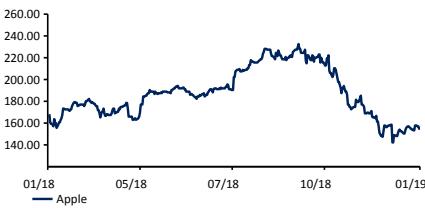
The Wedbush View

Last night Apple delivered its final December results which were in line with the disappointing pre-announced numbers that shocked the Street and the tech community in early January. While the overall headline numbers were not a surprise, we would characterize the company's March guidance as "better than feared" with many of the bears whispering that a sub \$55 billion revenue guidance was potentially in the cards vs. Apple's \$55 billion to \$59 billion range. Importantly the Street will be laser focused this morning on the initial gross margin numbers for the services business, which came in at 63% and were above our and investor expectations in the ~60% range and will be a linchpin to a higher sum-of-the-parts valuation over time for Cook & Co. With all that said, China iPhone sales in the December quarter was nothing short of a debacle as revenue in the region declined 27% year over year which speaks to iPhone doldrums on XR as well as general malaise in the region with the Huawei situation not helping things for Apple. With Apple no longer giving iPhone metrics and unit numbers as announced last quarter in a move that still weighs heavily on shares, the company did give some more granularity around its higher than expected current iPhone installed base of 900 million devices and 360 million paid subscriptions across the Services portfolio, which increased 120 million from a year ago on 1.4 billion active devices worldwide. The narrative from last night is a very mixed one; Apple and Cook face one of their most challenging growth periods in the company's history with weak iPhone sales in China being the "albatross around its neck" showing no signs of abating over the next few quarters, a dynamic that will be an overhang on the stock for the next 6 to 9 months with the China trade talks adding to the agita for investors. However on a positive note and seeing the forest through the trees, is our still unwavering bullish thesis (with some clear dents in it) that is built around the inherent value of Cupertino's unparalleled installed base which continues to grow and a services business that is poised to exceed \$50 billion in FY20 as Cook & Co. further monetize this golden asset with some encouraging gross margin data points a key feather in the cap for the bulls. On a sum-of-the-parts valuation, we believe the services business is worth between \$400 billion and \$450 billion, making the current valuation of Apple's stock today look compelling on a risk/reward basis despite needed investor hand holding with Street numbers now very achievable in our opinion. In sum, we concede that there is clearly an Everest-like climb ahead for Apple to turnaround its China doldrums in the near-term, although with roughly 20% of all iPhone upgrades over the next 12 to 18 months out of this region, Cupertino still has a clear window of opportunity to change the tide with the right pricing strategy (e.g., lower XR price tags) and trifecta of iPhones slated to hit the market in September 2019. We maintain our OUTPERFORM rating and \$200 price target.

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Investment Overview

Apple delivered its final December results which were in line with the disappointing pre-announced numbers that shocked the Street in early January. While the overall headline numbers were not a surprise, we would characterize the company's March guidance as "better than feared". Importantly, going forward the Street will be laser focused on the initial gross margin numbers for the services business, which came in at 63% and were above our and investor expectations in the ~60% range and will be a linchpin to a higher sum-of-the-parts valuation over time for Cook & Co. On a sum-of-the-parts valuation, we believe the services business is worth between \$400 billion and \$450 billion, making the current valuation of Apple's stock today look compelling on a risk/reward basis with Street numbers now very achievable in our opinion. In sum, we concede that there is clearly an Everest-like climb ahead for Apple to turnaround its China doldrums in the near-term, although Cupertino still has a clear window of opportunity to change the tide with the right pricing strategy and trifecta of iPhones slated to hit the market in September 2019.

Bear Case	Base Case	Bull Case
China tariffs ultimately get imposed on Apple, iPhone product cycle disappoints further and does not experience significant upgrades; China doldrums remain into FY20	XS/XR supply/demand levels out in FY2H19; Apple cuts prices, services revenue growth of ~17% remains firm heading into FY20; New iPhones introduced in Sept 2019-catalyzes upgrades in China.	Better-than-expected iPhone product cycle in FY20 and services ramp quicker than expected (content acquisition a wild card) in FY20 driving incremental margin and FCF growth. China rebounds.
Upcoming Catalysts	Primary Value Driver	
FY2Q19 earnings in late April	iPhone product cycle launch/success is the main focus of the Street which disappointed investors with weak December results. This is an installed base story going forward with services the linchpin.	
Valuation	Investor Sentiment	
Our \$200 price target represents our SOTP valuation on Apple	Negative	
Company Description	Price Performance	
Apple sells software, services, networking solutions, and third-party digital content and applications while designing, manufacturing around its iconic iPhone smartphone and product families of Macs, iPads, and other related hardware.	 Created by BlueMatrix	

Source: EDI

The Good

What We Liked in the Quarter

- **Services.** Services revenue of \$10.9 billion growing 19.1% y/y came in just above the Streets expectation of \$10.8 billion and our original expectation of \$10.3 billion. In light of the new metrics Cook & Co. unveiled on last night's call, Apple now boasts over 360 million paid subscriptions in its Services portfolio (increase of 120 million y/y) and plans to hit a total of 500 million by 2020, a positive data points for the bulls focused on the services story.
- **Massive installed base.** Apple's total iPhone active user base is now over 900 million iPhones (grew by ~75 million LTM) and 1.4 billion devices total and speaks to the massive potential AAPL has with a customer loyalty rate in the mid-90 range. Apple noted that the iPhone active installed base number will now be given "on a periodic basis". This number was well above the Street's expectations in the 700 million to 750 million range.

The Bad

What We Did Not Like in the Quarter

- **iPhone woes with China front and center** as revenue came in at \$51.9 billion decelerating (14.9%) as Cook & Co. called out the timing of the product release, FX, and macro conditions as headwinds in emerging markets (especially China) during the quarter; we continue to believe it was more due to the pricing hubris coming out of Cupertino, especially in the key China region, that caused the major revenue miss although the macro headwinds and malaise in the region clearly contributed to the December debacle.
- **China a major focus** as it was the main culprit for the major revenue miss, down (27%) from last year and was 16% of total revenue (last year represented 20% of total revenue). Turning around iPhone sales in China will be a major focus for Apple going forward as this represents a linchpin to the long term growth story in Cupertino despite near-term headwinds.

A Closer Look at FY1Q19 (December) Results

Revenue

- **Total revenue** of \$84.31 billion (down 4.5% y/y) was in line with the pre-announcement of ~\$84 billion that Cook & Co. gave almost a month ago and the Street's \$83.97 billion estimate. The original revenue estimate for the quarter was \$92 billion.
- **Geographic Breakdown:** The Americas grew 5% y/y accounting for 44% of total revenue, Europe saw a modest deceleration of (3%) y/y and represented 24% of Apple's total revenue, the all-important China region, which was the main culprit for the revenue miss, was down (27%) from last year and was 16% of total revenue (last year represented 20% of total revenue), Japan also slowed (5%) y/y and was 8% of total revenue, while the Rest of Asia grew just over 1% and accounted for 8% of total revenue.

From a product segment the breakdown was as follows:

- **iPhone** revenue came in at \$51.9 billion decelerating (14.9%) as Cook & Co. called out the timing of the product release, FX, and macro conditions as headwinds in emerging markets (especially China) during the quarter; we continue to believe it was more due to the pricing hubris coming out of Cupertino, especially in the key China region, that caused the major revenue miss. This number was below the Street estimate of \$52.4 billion. We note that Apple's total iPhone active user base is now over 900 million iPhones (grew by ~75 million LTM) and speaks to the massive potential AAPL has with a customer loyalty rate in the mid-90 range. Apple noted that the iPhone active installed base number will now be given "on a periodic basis" going forward.
- **iPad** revenue of \$6.7 billion grew 16.9% from last year and came in ahead of the Street's estimate of \$6.2 billion as the iPad and iPad Pro both saw double-digit growth in 4 out of the 5 geographies reported. We note that over half of iPad purchases this quarter came from new customers.
- **Mac** revenue was in-line with the Street's estimate coming in at \$7.4 billion (8.7% y/y). Like iPads, half of Mac purchases this quarter were from new customers and the U.S., Western Europe, Central/Eastern Europe, Japan, Korea, and South Asia all recorded double digit growth this quarter.
- **Services** reported revenues of \$10.9 billion growing 19.1% y/y and just above the Streets expectation of \$10.8 billion and higher than our original \$10.3 billion estimate. In light of the new metrics Cook & Co. unveiled on last night's call, Apple now boasts over 360 million paid subscriptions in its Services portfolio (increase of 120 million y/y) and plans to hit a total of 500 million by 2020, both higher than the Street had been anticipating. Importantly, we note the new revenue recognition standard that AAPL adopted this quarter is dilutive to the growth rate of the Services business as the amortization of the free services on the Apple platform is now applied to this segment vs. the Product segment. Excluding the new standard, the company reaffirmed its goal of doubling its 2016 total Services revenue by 2020. Added granularity given around this segment was that the new recognition standard was responsible for about 1/3 of the growth deceleration seen sequentially (24.5% last quarter/FY4Q18 vs. 19.1% this quarter/FY1Q19) and the rest was due to FX headwinds with 60% of services revenue coming from outside the US, a deceleration in AppleCare, and the App-store in China as the issue involving new game titles hurt revenue this quarter.
- **Wearables, Home & Accessories** had a solid quarter growing 33.3% to \$7.3 billion and was above the Street's estimate of \$7.0 billion driven by strong performances out of Apple Watch and AirPods.
- **Overall Product** revenue came in \$73.4 billion, which was down (7%) y/y compared to the \$79.2 billion reported in the year ago period with weak iPhones demand front and center on this latest XS/XR cycle.

Margins

Last night for the first time Apple broke out its Services vs. Product gross margins:

- **Services gross margin** was 62.8%, up significantly from the 58.3% in the year ago period and up 170 bps sequentially. We note that this all-important metric will fluctuate quarter-to-quarter as different services within the portfolio have their own margins and as new services are added to the platform. Overall, gross margins were above the Street's ~60% whisper expectation.
- **Product gross margin** was 34.3%, down from the 36.1% last year but up 60 bps sequentially due to leverage from the holiday quarter and new higher priced products being launched, while also partially offset from FX.
- **Total gross margin** of 38.0% was expected as it was given with the pre-announcement on January 2nd.
- Operating expenses for the quarter were \$8.69 billion, in line with the pre-announcement.
- Pro forma EPS came in at \$4.18, just above the Street's estimate of \$4.17.

Capital Return

- This quarter AAPL repurchased 38 million shares for \$8.2 billion, compared to the prior quarter of 92.5 million shares purchased for \$19.4 billion, a discernible decrease. The company also paid out \$3.6 billion in dividends and equivalents this quarter.

Balance Sheet & Cash Flow

- Total Cash and Investments were \$245 billion at the end of the quarter vs. \$237 billion in the prior quarter. Total debt of \$102.8 billion and commercial paper outstanding of \$12 billion leaves Apple's net cash position at \$130 billion.
- Cash flow from operations during the quarter was \$26.7 billion compared to the \$28.3 billion reported in the year ago period

FY2Q19 (March) Guidance

- For FY2Q19 the company expects revenue to be between \$55 billion and \$59 billion and gross margin to be within the range of 37.0% to 38.0%. We note that the Street's revenue and gross margin March estimates heading into the print were \$59.0 billion and 38.0%, respectively.

New Estimates

- For FY2Q19 (March), we are revising our total revenue and pro forma EPS estimate from \$59.9 billion and \$2.85 to \$57.9 billion and \$2.45, respectively.
- For FY2019, we are lowering our total revenue and EPS estimates from \$260.8 billion and \$12.44 to \$256.8 billion and \$11.61, respectively. We note that the Street's FY19 estimates prior to last night's release were \$258.6 billion and \$11.92.
- For FY2020 are lowering our total revenue and EPS estimates from \$270.4 billion and \$14.01 to \$266.2 billion and \$13.10, respectively. We note that the Street's FY2020 estimates heading into the print were \$269.6 billion and \$13.31.

Apple, Inc.

Wedbush Key Metrics

(\$ in millions, except per share)

	Restated ASC 606					ASC 606 >>>					2020E				
	1Q18A Dec-17	2Q18A Mar-18	3Q18A Jun-18	4Q18A Sep-18	FY18A Total	1Q19A Dec-18	2Q19E Mar-19	3Q19E Jun-19	4Q19E Sep-19	FY19E Total	1Q20E Dec-19	2Q20E Mar-20	3Q20E Jun-20	4Q20E Sep-20	FY20E Total
Services Revenue	9,129	9,190	9,548	9,981	37,848	10,875	10,890	11,257	11,788	44,810	12,702	12,633	13,058	13,685	52,078
y/y growth	10.3%	15.0%	17.9%	15.9%	14.3%	12.9%	18.8%	21.4%	19.0%	17.4%	14.8%	21.0%	23.7%	21.1%	19.6%
Services Gross Margin	58.3%	NA	NA	NA	NA	62.8%	63.3%	63.9%	64.9%	63.8%	65.4%	65.8%	66.2%	66.5%	66.0%
Total Revenue	88,293	61,137	53,265	62,900	265,595	84,310	57,923	52,590	61,978	256,800	85,938	60,287	55,138	64,881	266,243
y/y growth	12.7%	15.6%	17.3%	19.6%	15.9%	-4.5%	-5.3%	-1.3%	-1.5%	-3.3%	1.9%	4.1%	4.8%	4.7%	3.7%
Total Gross Margin	38.4%	38.3%	38.3%	38.3%	38.3%	38.0%	37.8%	38.3%	37.7%	37.9%	37.8%	38.8%	39.4%	38.4%	38.5%
Operating Expense	7,638	7,528	7,809	7,966	30,941	8,685	8,457	8,677	9,049	34,868	9,324	8,922	9,098	9,537	36,882
Op. Margin	29.8%	26.0%	23.7%	25.6%	26.7%	27.7%	23.2%	21.8%	23.1%	24.4%	26.9%	24.0%	22.9%	23.7%	24.7%
EPS - Pro Forma	3.89	2.73	2.34	2.91	11.91	4.18	2.45	2.19	2.73	11.61	4.49	2.88	2.55	3.16	13.10

* Does not include amortization of goodwill and intangibles, stock-based compensation and restructuring costs.

Sources: Company Reports and Wedbush Securities, Inc. estimates

Apple, Inc. (AAPL)
Income Statement

(\$ in millions, except per share)

	Restated ASC 606					ASC606>>>					2020E				
	1Q18A Dec-17	2Q18A Mar-18	3Q18A Jun-18	4Q18A Sep-18	FY18A Total	1Q19A Dec-18	2Q19E Mar-19	3Q19E Jun-19	4Q19E Sep-19	FY19E Total	1Q20E Dec-19	2Q20E Mar-20	3Q20E Jun-20	4Q20E Sep-20	FY20E Total
Revenue															
iPhone	61,104	38,032	29,906	37,185	166,227	51,982	32,746	26,885	34,024	145,637	50,942	32,746	27,154	34,194	145,037
iPad	5,755	4,113	4,741	4,089	18,698	6,729	3,948	4,585	3,795	19,057	6,527	3,830	4,424	3,643	18,424
Mac	6,824	5,848	5,330	7,411	25,413	7,416	5,649	5,442	7,159	25,666	7,216	5,451	5,241	7,052	24,959
Services	9,129	9,190	9,548	9,981	37,848	10,875	10,890	11,257	11,788	44,810	12,702	12,633	13,058	13,685	52,078
Wearables, Home, & Accessories	5,481	3,954	3,740	4,234	17,409	7,308	4,689	4,421	5,212	21,630	8,550	5,627	5,261	6,307	25,745
Total Revenue	88,293	61,137	53,265	62,900	265,595	84,310	57,923	52,590	61,978	256,800	85,938	60,287	55,138	64,881	266,243
<i>Year-over-Year Growth</i>	<i>13%</i>	<i>16%</i>	<i>17%</i>	<i>20%</i>	<i>16%</i>	<i>-5%</i>	<i>-5%</i>	<i>-1%</i>	<i>-1%</i>	<i>-3%</i>	<i>2%</i>	<i>4%</i>	<i>5%</i>	<i>5%</i>	<i>4%</i>
<i>Qtr-over-Qtr Growth</i>	<i>68%</i>	<i>-31%</i>	<i>-13%</i>	<i>18%</i>	<i>NM</i>	<i>34%</i>	<i>-31%</i>	<i>-9%</i>	<i>18%</i>	<i>NM</i>	<i>39%</i>	<i>-30%</i>	<i>-9%</i>	<i>18%</i>	<i>NM</i>
Total Cost of Service Revenue	3,806					4,041	3,997	4,064	4,137	16,239	4,395	4,320	4,420	4,585	17,720
Gross Services Profit	5,323					6,834	6,893	7,193	7,650	28,571	8,307	8,312	8,638	9,101	34,358
<i>Gross Services Margin</i>	<i>58.3%</i>					<i>62.8%</i>	<i>63.3%</i>	<i>63.9%</i>	<i>64.9%</i>	<i>63.8%</i>	<i>65.4%</i>	<i>65.8%</i>	<i>66.2%</i>	<i>66.5%</i>	<i>66.0%</i>
Total Cost of Product Revenue	50,575					48,238	32,029	28,396	34,480	143,143	49,068	32,548	28,993	35,376	145,985
Gross Product Profit	28,589					25,197	15,003	12,937	15,709	68,847	24,168	15,106	13,087	15,819	68,180
<i>Gross Product Margin</i>	<i>36.1%</i>					<i>34.3%</i>	<i>31.9%</i>	<i>31.3%</i>	<i>31.3%</i>	<i>32.5%</i>	<i>33.0%</i>	<i>31.7%</i>	<i>31.1%</i>	<i>30.9%</i>	<i>31.8%</i>
Total Cost of Revenue	54,381	37,715	32,844	38,816	163,756	52,279	36,026	32,459	38,618	159,382	53,463	36,868	33,413	39,961	163,705
Gross Profit	33,912	23,422	20,421	24,084	101,839	32,031	21,897	20,130	23,360	97,418	32,475	23,419	21,725	24,920	102,538
Operating Expenses															
Research & Development	3,407	3,378	3,701	3,750	14,236	3,902	4,055	4,207	4,338	16,502	4,168	4,341	4,466	4,671	17,646
SG&A	4,231	4,150	4,108	4,216	16,705	4,783	4,402	4,470	4,710	18,366	5,156	4,582	4,632	4,866	19,236
Total Operating Expenses	7,638	7,528	7,809	7,966	30,941	8,685	8,457	8,677	9,049	34,868	9,324	8,922	9,098	9,537	36,882
Operating Income	26,274	15,894	12,612	16,118	70,898	23,346	13,440	11,453	14,311	62,550	23,151	14,496	12,627	15,383	65,657
Interest and other income	756	274	672	303	2,005	560	300	405	320	1,585	375	368	400	410	1,553
Income Before Taxes	27,030	16,168	13,284	16,421	72,903	23,906	13,740	11,858	14,631	64,135	23,526	14,864	13,027	15,793	67,209
Income Taxes	6,965	2,346	1,765	2,296	13,372	3,941	2,336	1,897	2,341	10,515	3,529	2,230	1,954	2,369	10,081
Net Income - Pro-forma*	20,065	13,822	11,519	14,125	59,531	19,965	11,404	9,961	12,290	53,620	19,997	12,634	11,073	13,424	57,128
EPS - Pro-forma*	3.89	2.73	2.34	2.91	11.91	4.18	2.45	2.19	2.73	11.61	4.49	2.88	2.55	3.16	13.10
Shares Outstanding - Diluted	5,158	5,069	4,927	4,848	5,000	4,773	4,650	4,555	4,500	4,620	4,450	4,390	4,350	4,250	4,360

* Does not include amortization of goodwill and intangibles, stock-based compensation and restructuring costs.

Sources: Company Reports and Wedbush Securities, Inc. estimates

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Apple, Inc. (AAPL)

Margin & Growth Analysis

	1Q18A	2Q18A	3Q18A	4Q18A	FY18A
Margins					
Total Gross Margin	38.4%	38.3%	38.3%	38.3%	38.3%
Operating Margin	29.8%	26.0%	23.7%	25.6%	26.7%
Net Margin - Pro forma	22.7%	22.6%	21.6%	22.5%	22.4%
Percent of Revenues					
iPhone	69.2%	62.2%	56.1%	59.1%	62.6%
iPad	6.5%	6.7%	8.9%	6.5%	7.0%
Mac	7.7%	9.6%	10.0%	11.8%	9.6%
Services	10.3%	15.0%	17.9%	15.9%	14.3%
Wearables, Home, & Accessories	6.2%	6.5%	7.0%	6.7%	6.6%
Research & Development	3.9%	5.5%	6.9%	6.0%	5.4%
SG&A	4.8%	6.8%	7.7%	6.7%	6.3%
Year-over-Year Growth					
iPhone	12.4%	14.4%	20.4%	28.9%	17.6%
iPad	4.0%	5.8%	-4.6%	-15.4%	-2.7%
Mac	-5.8%	0.1%	-4.7%	3.4%	-1.7%
Services	27.3%	30.5%	31.4%	17.4%	26.2%
Wearables, Home, & Accessories	36.2%	37.6%	36.7%	31.0%	35.3%
Total Revenue	12.7%	15.6%	17.3%	19.6%	15.9%
Operating Income	12.5%	12.7%	17.1%	22.9%	15.6%
EPS - pro forma *	15.9%	30.1%	40.4%	41.0%	29.3%
Sequential Growth					
iPhone	111.8%	-37.8%	-21.4%	24.3%	NM
iPad	19.1%	-28.5%	15.3%	-13.8%	NM
Mac	-4.8%	-14.3%	-8.9%	39.0%	NM
Services	7.4%	0.7%	3.9%	4.5%	NM
Wearables, Home, & Accessories	69.6%	-27.9%	-5.4%	13.2%	NM
Total Revenue	67.9%	-30.8%	-12.9%	18.1%	NM
Operating Income	100.3%	-39.5%	-20.6%	27.8%	NM
EPS - pro forma *	88.2%	-29.9%	-14.3%	24.6%	NM

Sources: Company Reports and Wedbush Securities, Inc. estimates

	1Q19A	2Q19E	3Q19E	4Q19E	FY19E
	38.0%	37.8%	38.3%	37.7%	37.9%
	27.7%	23.2%	21.8%	23.1%	24.4%
	23.7%	19.7%	18.9%	19.8%	20.9%
	61.7%	56.5%	51.1%	54.9%	56.7%
	8.0%	6.8%	8.7%	6.1%	7.4%
	8.8%	9.8%	10.3%	11.6%	10.0%
	12.9%	18.8%	21.4%	19.0%	17.4%
	8.7%	8.1%	8.4%	8.4%	8.4%
	4.6%	7.0%	8.0%	7.0%	6.4%
	5.7%	7.6%	8.5%	7.6%	7.2%
	-14.9%	-13.9%	-10.1%	-8.5%	-12.4%
	16.9%	-4.0%	-3.3%	-7.2%	1.9%
	8.7%	-3.4%	2.1%	-3.4%	1.0%
	19.1%	18.5%	17.9%	18.1%	18.4%
	33.3%	18.6%	18.2%	23.1%	24.2%
	-4.5%	-5.3%	-1.3%	-1.5%	-3.3%
	-11.1%	-15.4%	-9.2%	-11.2%	-11.8%
	7.5%	-10.1%	-6.5%	-6.3%	-2.5%
	39.8%	-37.0%	-17.9%	26.6%	NM
	64.6%	-41.3%	16.1%	-17.2%	NM
	0.1%	-23.8%	-3.7%	31.6%	NM
	9.0%	0.1%	3.4%	4.7%	NM
	72.6%	-35.8%	-5.7%	17.9%	NM
	34.0%	-31.3%	-9.2%	17.9%	NM
	44.8%	-42.4%	-14.8%	25.0%	NM
	43.5%	-41.4%	-10.8%	24.9%	NM

	1Q20E	2Q20E	3Q20E	4Q20E	FY20E
	37.8%	38.8%	39.4%	38.4%	38.5%
	26.9%	24.0%	22.9%	23.7%	24.7%
	23.3%	21.0%	20.1%	20.7%	21.5%
	59.3%	54.3%	49.2%	52.7%	54.5%
	7.6%	6.4%	8.0%	5.6%	6.9%
	8.4%	9.0%	9.5%	10.9%	9.4%
	14.8%	21.0%	23.7%	21.1%	19.6%
	9.9%	9.3%	9.5%	9.7%	9.7%
	4.9%	7.2%	8.1%	7.2%	6.6%
	6.0%	7.6%	8.4%	7.5%	7.2%
	-2.0%	0.0%	1.0%	0.5%	-0.4%
	-3.0%	-3.0%	-3.5%	-4.0%	-3.3%
	-2.7%	-3.5%	-3.7%	-1.5%	-2.8%
	16.8%	16.0%	16.0%	16.1%	16.2%
	17.0%	20.0%	19.0%	21.0%	19.0%
	1.9%	4.1%	4.8%	4.7%	3.7%
	-0.8%	7.9%	10.2%	7.5%	5.0%
	7.4%	17.3%	16.4%	15.7%	12.9%
	49.7%	-35.7%	-17.1%	25.9%	NM
	72.0%	-41.3%	15.5%	-17.7%	NM
	0.8%	-24.5%	-3.9%	34.6%	NM
	7.8%	-0.5%	3.4%	4.8%	NM
	64.0%	-34.2%	-6.5%	19.9%	NM
	38.7%	-29.8%	-8.5%	17.7%	NM
	61.8%	-37.4%	-12.9%	21.8%	NM
	64.5%	-36.0%	-11.6%	24.1%	NM

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Apple, Inc. (AAPL)
Balance Sheet (\$ in millions)

	FY18				FY19
	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18
ASSETS					
Cash and Equivalents	27,491	45,059	31,971	25,913	44,771
Short-Term Marketable Securities	49,662	42,881	38,999	40,388	41,656
Accounts Receivable	23,440	14,324	14,104	23,186	18,077
Inventory	4,421	7,662	5,936	3,956	4,988
Vendor Non-Trade Receivables	27,459	8,084	12,263	25,809	18,904
Other Current Assets	11,337	12,043	12,488	12,087	12,432
Total Current Assets	143,810	130,053	115,761	131,339	140,828
Long-Term Marketable Securities	207,944	179,286	172,773	170,799	158,608
Property and Equipment	33,679	35,077	38,117	41,304	39,597
Goodwill and Intangible Assets	8,038	0	0	0	0
Other Assets	13,323	23,086	22,546	22,283	34,686
Total Assets	406,794	367,502	349,197	365,725	373,719
LIABILITIES					
Accounts Payable	62,985	34,311	38,489	55,888	44,293
Other Current Liabilities	0	0	0	33,327	36,703
Accrued Expenses	26,281	26,756	25,184	0	0
Deferred Revenue	8,044	7,775	7,403	5,966	5,546
Commercial Paper	11,980	11,980	11,974	11,964	11,969
Current Portion of Long-Term Debt	6,498	8,498	5,498	8,784	9,772
Total Current Liabilities	115,788	89,320	88,548	115,929	108,283
Deferred Revenue	3,131	3,087	2,878	0	0
Long-Term Debt	103,922	101,362	97,128	93,735	92,989
Other Liabilities	43,754	46,855	45,694	48,914	54,555
Total Liabilities	266,595	240,624	234,248	258,578	255,827
Total Shareholder Equity	140,199	126,878	114,949	107,147	117,892
Total Liabilities And Shareholders Equity	406,794	367,502	349,197	365,725	373,719

Sources: Company Reports and Wedbush Securities, Inc. estimates

Valuation

Our \$200 price target represents our SOTP valuation on Apple

Risks to the Attainment of Our Price Target and Rating:

- Increasing competition, pricing, technology shifts, and macroeconomic conditions.
- The success of the iPhone product cycle remains key to the company's growth prospects
- Apple's ability to successfully ramp its software/services business is dependent on further penetration of its installed base
- Success of Apple's product strategy in China, which remains a key growth driver for the coming years and could be impaired by lower priced smartphones and competition. China macro/tariffs issue remain a long-term risk.

Analyst Certification

We, Daniel Ives and Strecker Backe, certify that the views expressed in this report accurately reflect our personal opinions and that we have not and will not, directly or indirectly, receive compensation or other payments in connection with our specific recommendations or views contained in this report.

Mentioned Companies

Investment Rating System:

OUTPERFORM: Expect the total return of the stock to outperform relative to the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

NEUTRAL: Expect the total return of the stock to perform in-line with the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

UNDERPERFORM: Expect the total return of the stock to underperform relative to the median total return of the analyst's (or the analyst's team) coverage universe of the next 6-12 months.

The Investment Ratings are based on the expected performance of a stock (based on anticipated total return to price target) relative to the other stocks in the analyst's coverage universe (or the analyst's team coverage).*

Rating distribution (as of January 30, 2019)	Investment Banking Relationships (as of January 30, 2019)
OUTPERFORM: 60.49%	OUTPERFORM: 11.22%
NEUTRAL: 38.27%	NEUTRAL: 0.81%
UNDERPERFORM: 1.23%	UNDERPERFORM: 0.00%

The Distribution of Ratings is required by FINRA rules; however, WS' stock ratings of Outperform, Neutral, and Underperform most closely conform to Buy, Hold, and Sell, respectively. Please note, however, the definitions are not the same as WS' stock ratings are on a relative basis.

The analysts responsible for preparing research reports do not receive compensation based on specific investment banking activity. The analysts receive compensation that is based upon various factors including WS' total revenues, a portion of which are generated by WS' investment banking activities.

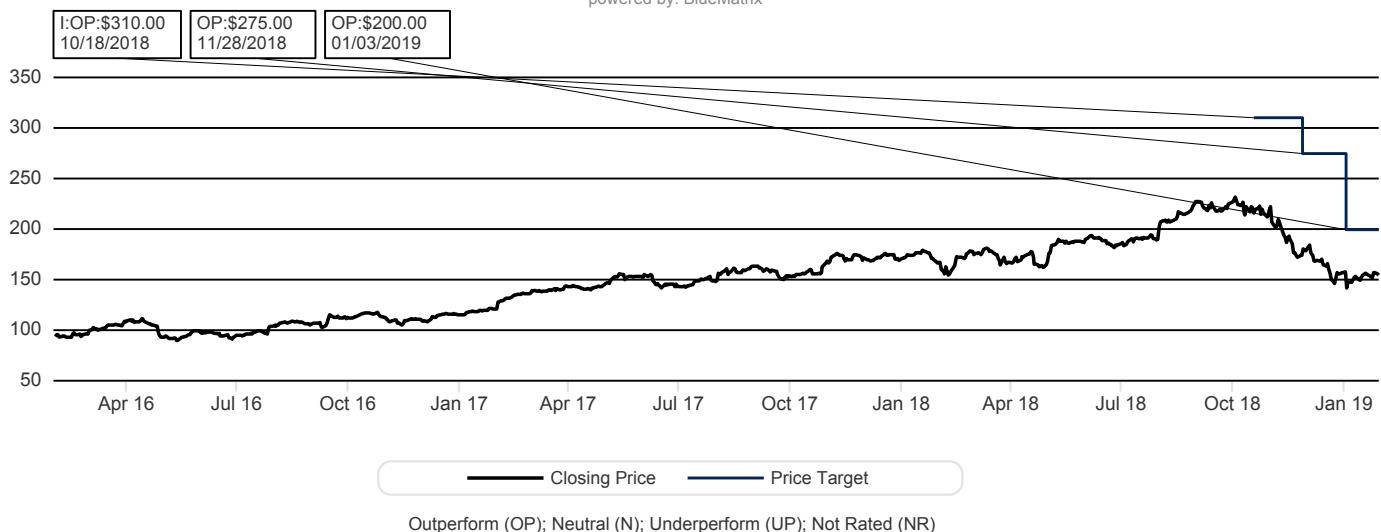
Company Specific Disclosures

1. WS makes a market in the securities of Apple.

Price Charts

Apple Rating History as of 01-29-2019

powered by: BlueMatrix



Wedbush disclosure price charts are updated within the first fifteen days of each new calendar quarter per FINRA regulations. Price charts for companies initiated upon in the current quarter, and rating and target price changes occurring in the current quarter, will not be displayed until the following quarter. Additional information on recommended securities is available on request.

Disclosure information regarding historical ratings and price targets is available: <http://www.wedbush.com/ResearchDisclosure/DisclosureQ418.pdf>

*WS changed its rating system from (Strong Buy/ Buy/ Hold/ Sell) to (Outperform/ Neutral/ Underperform) on July 14, 2009.

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Technology sector

COMMENT

Implications of Apple's results for Japanese stocks

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- **Summary:** Apple released 1Q FY19 (Oct–Dec) results and 2Q (Jan–Mar) guidance after the close on 29 January (US time). First-quarter results were in line with the Bloomberg consensus and the revised guidance issued on 2 January, while 2Q guidance also matches the consensus expectation. The response to this reassuring news briefly pushed Apple's share price around 5% higher than the 29 January close in after-hours trading. Below, we outline the implications for related Japanese stocks.
- **Implications for the electronic components sector:** We estimate that the iPhone production plan for Oct–Dec 2018 was around 74–75mn handsets (6–7% higher than five-year historical average output). The production plans for Jan–Mar and Apr–Jun 2019 keep changing on a weekly basis and, we estimate, last week (the third week of 2019) stood at around 41mn handsets in Jan–Mar and 35mn in Apr–Jun. The majority of Japanese makers in the iPhone component supply chain assume their iPhone-related sales will grow by something like 45–50% QoQ in Jan–Mar, but, since their sales are pegged to the trend in iPhone production volume noted above, sales momentum is likely to remain weak through Apr–May. That said, we believe this possibility has already been discounted in recent steep share price declines. By contrast, manufacturing for the new iPad models due for launch in early spring has already started, reducing the risk of production adjustment in Jan–Mar.
- **Implications for the consumer electronics sector:** We believe iPhone demand is lagging the assumptions of Apple-related companies Sony (6758), Japan Display (6740), Sharp (6753) and Nitto Denko (6988), making production adjustment likely in Jan–Mar. However, in the absence of any additional bad news, the implication is neutral, in our view. We think Sony could partially offset any shortfall in volume through improvement in the product mix and cost cutbacks. On 28 January, Japan Display stated that it expects weak consolidated net profit in FY3/19, so the market's focus is likely to be on progress in external alliances.

- **Implications for memory- and SPE-related stocks:** Apple's results release has no particular implication for memory- and SPE-related stocks. Our focus for iPhone-related business is on the following three points. (1) Memory capacity: We believe the volume of both DRAM and NAND will remain the same in 2019 models as in 2018 models. For DRAM, we forecast LCD models will require 3GB and OLED models 4GB in 2019, and that in 2020 6.1-inch models will use 4GB and 5.85/6.46-inch models 6GB. For NAND, 1TB chips are gaining traction, but we do not expect these to feature in iPhone models until 2020 (we estimate Apple will make a final decision on memory capacity for 2019 models in Apr–May). Since 1TB NAND models would require 9-layer 3D NAND chips, we are focusing on the capex the launch of such models would necessitate. (2) 2020 application processor (AP) process: Candidates are 5nm EUV lithography, 7nm+ (EUV) and 7nm processes. We anticipate selection of the winning process in 1Q CY19 and are focusing on the impact on TSMC's CY19 capex plan. (3) The timing of 5G modem phone launch: We think some 2020 smartphone models could be 5G-bandwidth-compatible. As this could herald the era of 5G compatibility as standard, we are focusing on the implication for demand for Anritsu's (6754) manufacturing-use measuring equipment.

Key takeaways

- **Oct–Dec results:** Total sales were \$84.3bn (-5% YoY, +34% QoQ). Apple cited greater-than-expected impact from macro issues in China and other emerging markets as well as currency depreciation in such regions. It also blamed longer-than-expected iPhone replacement cycles. The overall gross margin was 38.0% (-0.4ppt QoQ, -0.3ppt YoY). Gross margins widened QoQ in both products (iPhone, iPad, Macs, etc.) and services, but the overall gross margin worsened QoQ due to changes in product and services mix.
- **Jan–Mar guidance:** Apple targets total sales of \$55–59bn (midpoint -32% QoQ, -7% YoY) and expects the gross margin to fall 0.5ppt QoQ (midpoint of guidance). It expects the Oct–Dec drag from weaker iPhone sales and macro issues in China and other emerging markets to persist in Jan–Mar, but looks for sales of products besides the iPhone to grow.
- **Major product sales:** (1) iPhone sales totaled \$52bn (-16% YoY, +40% QoQ), mainly reflecting a sales slump in China and other emerging markets, plus local currency depreciation. In advanced economies such as Japan, revenue fell sharply due to fiercer competition among carriers bundling sales of smartphones with telecom services. Outside China, sales to consumers upgrading to new models were brisk, but inside China, momentum was worse than expected. The sales slump reflected a stronger dollar, reduced subsidies from carriers, and a drop-off in demand driven by battery replacement programs. At end-December, the iPhone active installed base was 900mn units (+75mn YoY; total installed base 1.4bn, +100mn YoY). (2) iPad sales were \$6.7bn (+15% YoY, +65% QoQ). (3) Mac sales were \$7.4bn (+8% YoY, flat QoQ) partly reflecting brisk sales of the new MacBook Air and Mac Mini launched in October. (4) “Other products”, including Apple Watch, generated sales of ¥7.3bn (+33% YoY, +73% QoQ). Apple said over 50% of this sales growth was driven by its wearable offerings. (5) Services segment sales were \$10.8bn (+28%, +8%). Sales hit record highs for many services, including Apple Store and Apple Pay, thanks partly to the Christmas season.

- **Greater China:** Oct–Dec sales in Greater China fell 27% YoY but rose 15% QoQ.

Figure 1: Apple – Actual/guidance/consensus

APPLE (AAPL US) \$bn	Actual										Guidance		Bloomberg consensus				
	FY16				FY17				FY18				FY19 1Q	FY19 2Q	FY19 Q1	FY19 Q2	
\$ bn	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	84.0	55.0	~ 59.0
Revenue	75.9	50.6	42.4	46.9	78.4	52.9	45.4	52.6	88.3	61.1	53.3	62.9	84.3				
QoQ growth %	47%	-33%	-16%	11%	67%	-32%	-14%	16%	68%	-31%	-13%	18%	34%				
YoY growth %	2%	-13%	-15%	-9%	3%	5%	7%	12%	13%	16%	17%	20%	-5%				
COGS	45.4	30.6	26.3	29.0	48.2	32.3	27.9	32.6	54.4	37.7	32.8	38.8	52.3				
Gross Profit	30.4	19.9	16.1	17.8	30.2	20.6	17.5	19.9	33.9	23.4	20.4	24.1	32.0				
Gross Margin	40.1%	38.4%	38.0%	38.0%	38.5%	38.9%	38.5%	37.9%	38.4%	38.3%	38.3%	38.3%	38.0%				
R&D Expense	2.4	2.5	2.6	2.6	2.9	2.8	2.9	3.0	3.4	3.4	3.7	3.8	3.9				
SG&A Expense	3.8	3.4	3.4	3.5	3.9	3.7	3.8	3.8	4.2	4.2	4.1	4.2	4.8				
Total operating expenses	6.2	5.9	6.0	6.1	6.8	6.5	6.7	6.8	7.6	7.5	7.8	8.0	8.7				
Operating income	24.2	14.0	10.1	11.8	23.4	14.1	10.8	13.1	26.3	15.9	12.6	16.1	23.3				
Operating margin	31.9%	27.7%	23.9%	25.1%	29.8%	26.7%	23.7%	25.0%	29.8%	26.0%	23.7%	25.6%	27.7%				
Net Income (GAAP)	18.4	10.5	7.8	9.0	17.9	11.0	8.7	10.7	20.1	13.8	11.5	14.1	20.0				
EPS (GAAP)	3.3	1.9	1.4	1.7	3.4	2.1	1.7	2.1	3.9	2.8	2.4	2.9	4.2				

Source: Company data, BLOOMBERG , Credit Suisse

Figure 2: Apple – Revenue by product, units and ASP

Product detail \$mn	2015/12	2016/3	2016/6	2016/9	2016/12	2017/3	2017/6	2017/9	2017/12	2018/3	2018/6	2018/9	2018/12
APPLE (AAPL US)													
iPhone													
Revenue	51,635	32,857	24,048	28,160	54,379	33,249	24,846	28,846	61,576	38,032	29,906	37,185	51,982
QoQ growth %	60%	-36%	-27%	17%	93%	-39%	-25%	16%	113%	-38%	-21%	24%	40%
YoY growth %	1%	-18%	-23%	-13%	5%	1%	3%	2%	13%	14%	20%	29%	-16%
Units	74,779	51,193	40,399	45,513	78,290	50,763	41,026	46,677	77,316	52,217	41,300	46,889	65,548
QoQ growth %	56%	-32%	-21%	13%	72%	-35%	-19%	14%	66%	-32%	-21%	14%	40%
YoY growth %	0%	-16%	-15%	-5%	5%	-1%	2%	3%	-1%	3%	1%	0%	-15%
ASP	691	642	595	619	695	655	606	618	796	728	724	793	793
QoQ growth %	3.0%	-7.0%	-7.3%	3.9%	12.3%	-5.7%	-7.5%	2.0%	28.9%	-8.5%	-0.6%	9.5%	0.0%
YoY growth %	0.5%	-2.5%	-9.8%	-7.7%	0.6%	2.1%	1.7%	-0.1%	14.7%	11.2%	19.6%	28.3%	-0.4%
Mac													
Revenue	6,746	5,107	5,239	5,739	7,244	5,844	5,592	7,170	6,895	5,848	5,330	7,411	7,416
QoQ growth %	-2%	-24%	3%	10%	26%	-19%	-4%	28%	-4%	-15%	-9%	39%	0%
YoY growth %	-3%	-9%	-13%	-17%	7%	14%	7%	25%	-5%	0%	-5%	3%	8%
Units	5,312	4,034	4,252	4,886	5,374	4,199	4,292	5,386	5,112	4,078	3,720	5,299	5,300
QoQ growth %	-7%	-24%	5%	15%	10%	-22%	2%	25%	-5%	-20%	-9%	42%	0%
YoY growth %	-4%	-12%	-11%	-14%	1%	4%	1%	10%	-5%	-3%	-13%	-2%	4%
ASP	1,270	1,266	1,232	1,175	1,348	1,392	1,303	1,331	1,349	1,434	1,433	1,399	1,399
QoQ growth %	5.3%	-0.3%	-2.7%	-4.7%	14.8%	3.2%	-6.4%	2.2%	1.3%	6.3%	-0.1%	-2.4%	0.0%
YoY growth %	0.9%	2.9%	-2.0%	-2.6%	6.1%	9.9%	5.7%	13.3%	0.1%	3.0%	10.0%	5.1%	3.7%
iPad													
Revenue	7,084	4,413	4,876	4,255	5,533	3,889	4,969	4,831	5,862	4,113	4,741	4,089	6,729
QoQ growth %	66%	-38%	10%	-13%	30%	-30%	28%	-3%	21%	-30%	15%	-14%	65%
YoY growth %	-21%	-19%	7%	0%	-22%	-12%	2%	14%	6%	6%	-5%	-15%	15%
Units	16,122	10,251	9,950	9,267	13,081	8,922	11,424	10,326	13,170	9,113	11,553	9,699	15,961
QoQ growth %	63%	-36%	-3%	-7%	41%	-32%	28%	-10%	28%	-31%	27%	-16%	65%
YoY growth %	-25%	-19%	-9%	-6%	-19%	-13%	15%	11%	1%	2%	1%	-6%	21%
ASP	439	430	490	459	423	436	435	468	445	451	410	422	422
QoQ growth %	1.6%	-2.0%	13.8%	-6.3%	-7.9%	3.1%	-0.2%	7.6%	-4.9%	1.4%	-9.1%	2.7%	0.0%
YoY growth %	4.7%	0.1%	18.0%	6.1%	-3.7%	1.3%	-11.2%	1.9%	5.2%	3.5%	-5.7%	-9.9%	-5.3%
Service													
Revenue	6,056	5,991	5,976	6,325	7,172	7,041	7,266	8,501	8,471	9,190	9,548	9,981	10,875
QoQ growth %	19%	-1%	0%	6%	13%	-2%	3%	17%	0%	8%	4%	5%	9%
YoY growth %	26%	20%	19%	24%	18%	18%	22%	34%	18%	31%	31%	17%	28%
Other products (Wearables, Home and Accessories)													
Revenue	4,351	2,189	2,219	2,373	4,024	2,873	2,735	3,231	5,489	3,954	3,740	4,234	7,308
QoQ growth %	43%	-50%	1%	7%	70%	-29%	-5%	18%	70%	-28%	-5%	13%	73%
YoY growth %	62%	30%	-16%	-22%	-8%	31%	23%	36%	36%	38%	37%	31%	33%

Note: Oct-Dec 2018 shipment volume is calculated assuming flat QoQ ASP.

Source: Company data, Credit Suisse estimates

Figure 3: Apple – Revenue breakdown

Sales by region \$mn	2015/12	2016/3	2016/6	2016/9	2016/12	2017/3	2017/6	2017/9	2017/12	2018/3	2018/6	2018/9	2018/12
APPLE (AAPL US)													
Regional Sales	75,872	50,557	42,358	46,852	78,351	52,896	45,408	52,579	88,293	61,137	53,265	62,900	84,310
Americas	29,325	19,096	17,963	20,229	31,968	21,157	20,376	23,099	35,193	24,841	24,542	27,517	36,940
QoQ growth %	35%	-35%	-6%	13%	58%	-34%	-4%	13%	52%	-29%	-1%	12%	34%
YoY growth %	-4%	-10%	-11%	-7%	9%	11%	13%	14%	10%	17%	20%	19%	5%
Europe	17,932	11,535	9,643	10,842	18,521	12,733	10,675	13,009	21,054	13,846	12,138	15,382	20,363
QoQ growth %	70%	-36%	-16%	12%	71%	-31%	-16%	22%	62%	-34%	-12%	27%	32%
YoY growth %	4%	-5%	-7%	3%	3%	10%	11%	20%	14%	9%	14%	18%	-3%
Greater China	18,373	12,486	8,848	8,785	16,233	10,726	8,004	9,801	17,956	13,024	9,551	11,411	13,169
QoQ growth %	47%	-32%	-29%	-1%	85%	-34%	-25%	22%	83%	-27%	-27%	19%	15%
YoY growth %	14%	-26%	-33%	-30%	-12%	-14%	-10%	12%	11%	21%	19%	16%	-27%
Japan	4,794	4,281	3,529	4,324	5,766	4,485	3,624	3,858	7,237	5,468	3,867	5,161	6,910
QoQ growth %	22%	-11%	-18%	23%	33%	-22%	-19%	6%	88%	-24%	-29%	33%	34%
YoY growth %	-12%	24%	23%	10%	20%	5%	3%	-11%	26%	22%	7%	34%	-5%
Rest of Asia Pacific	5,448	3,159	2,375	2,672	5,863	3,795	2,729	2,812	6,853	3,958	3,167	3,429	6,928
QoQ growth %	101%	-42%	-25%	13%	119%	-35%	-28%	3%	144%	-42%	-20%	8%	102%
YoY growth %	4%	-25%	-20%	-1%	8%	20%	15%	5%	17%	4%	16%	22%	1%

Source: Company data, Credit Suisse estimates

Companies Mentioned (Price as of 30-Jan-2019)

Anritsu (6754.T, ¥1,629)
Apple Inc (AAPL.OQ, \$154.68)
Japan Display (6740.T, ¥72)
Nitto Denko (6988.T, ¥6,012)
Sharp (6753.T, ¥1,181)
Sony (6758.T, ¥5,281)

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3-Year Price and Rating History for Anritsu (6754.T)

6754.T	Closing Price	Target Price	
Date	(¥)	(¥)	Rating
26-Jul-16	628	655	N
09-Nov-16	531	565	
20-Apr-17	765	660	
28-Aug-17	852	750	
15-Aug-18	1,619	1,620	

* Asterisk signifies initiation or assumption of coverage.

**3-Year Price and Rating History for Japan Display (6740.T)**

6740.T	Closing Price	Target Price	
Date	(¥)	(¥)	Rating
09-Mar-16	231	270	N
09-Jun-16	213	230	
21-Oct-16	220	220	
17-Mar-17	266	250	
12-Jul-17	203	200	
16-Jan-18	233	220	
19-Jul-18	134	145	
13-Sep-18	144	150	

* Asterisk signifies initiation or assumption of coverage.

**3-Year Price and Rating History for Nitto Denko (6988.T)**

6988.T	Closing Price	Target Price	
Date	(¥)	(¥)	Rating
26-Feb-16	5,920		NR
03-Jul-18	8,017	11,000	O*
05-Dec-18	6,033	7,900	

* Asterisk signifies initiation or assumption of coverage.



3-Year Price and Rating History for Sharp (6753.T)

6753.T	Closing Price	Target Price	
Date	(¥)	(¥)	Rating
21-Oct-16	1,660	1,200	
24-Apr-17*	4,070	1,800	U

* Asterisk signifies initiation or assumption of coverage.



3-Year Price and Rating History for Sony (6758.T)

6758.T	Closing Price	Target Price	
Date	(¥)	(¥)	Rating
03-Mar-16	2,520	3,300	O
31-May-16	3,100	3,800	
15-Dec-16	3,373	3,900	
10-Mar-17	3,661	4,300	
14-Jun-17	4,060	4,700	
19-Sep-17	4,294	4,700	N
30-Nov-17	5,201	5,700	
15-Mar-18	5,446	5,900	
14-Jun-18	5,387	6,000	
10-Sep-18	6,245	8,500	O
05-Dec-18	5,935	9,100	

* Asterisk signifies initiation or assumption of coverage.

**As of December 10, 2012 Analysts' stock rating are defined as follows:**

Outperform (O) : The stock's total return is expected to outperform the relevant benchmark* over the next 12 months.

Neutral (N) : The stock's total return is expected to be in line with the relevant benchmark* over the next 12 months.

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*Relevant benchmark by region: As of 10th December 2012, Japanese ratings are based on a stock's total return relative to the analyst's coverage universe which consists of all companies covered by the analyst within the relevant sector, with Outperforms representing the most attractive, Neutrals the less attractive, and Underperforms the least attractive investment opportunities. As of 2nd October 2012, U.S. and Canadian as well as European ratings are based on a stock's total return relative to the analyst's coverage universe which consists of all companies covered by the analyst within the relevant sector, with Outperforms representing the most attractive, Neutrals the less attractive, and Underperforms the least attractive investment opportunities. For Latin American and Asia stocks (excluding Japan and Australia), ratings are based on a stock's total return relative to the average total return of the relevant country or regional benchmark (India - S&P BSE Sensex Index); prior to 2nd October 2012 U.S. and Canadian ratings were based on (1) a stock's absolute total return potential to its current share price and (2) the relative attractiveness of a stock's total return potential within an analyst's coverage universe. For Australian and New Zealand stocks, the expected total return (ETR) calculation includes 12-month rolling dividend yield. An Outperform rating is assigned where an ETR is greater than or equal to 7.5%; Underperform where an ETR less than or equal to 5%. A Neutral may be assigned where the ETR is between -5% and 15%. The overlapping rating range allows analysts to assign a rating that puts ETR in the context of associated risks. Prior to 18 May 2015, ETR ranges for Outperform and Underperform ratings did not overlap with Neutral thresholds between 15% and 7.5%, which was in operation from 7 July 2011.

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Restricted	1%	

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January 30, 2019 03:28 AM GMT

Apple, Inc. | North America

Reasons To Be More Bullish

↳ Stock Rating Overweight	↳ Industry View In-Line	◎ Price Target \$197.00
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Apple faces macro headwinds but investor sentiment/positioning became overly negative, ignoring the strength of Apple's platform. Importantly, non-iPhone revenue grew 19%, ex-China revenue grew, and newly disclosed iPhone installed base and Services subs hint at sustained Services growth.

WHAT'S CHANGED	Apple, Inc. (AAPL.O)	From	To
	Price Target	\$211.00	\$197.00

Estimates move lower, but less than feared. We lower March quarter revenue by 7%, or \$4B, and FY19e revenue by 1.4% with FY19e EPS moving from \$12.39 to \$11.50. That said, buy-side expectations deteriorated meaningfully in the four weeks post Apple's pre-announcement such that even our lowered estimates are better than feared (bears expect FY19e EPS of \$11). Importantly, Apple made investors feel better about several recent debates - 1) weaker iPhone demand, 2) gross margin risk, and 3) Services growth deceleration, which we address below in more detail. We continue to value Apple on a SoTP basis which drives our \$197 PT, down from \$211 previously on our lower revenue estimates offset partially by higher peer multiples.

New insights from earnings that should make investors more bullish (or at least less bearish):

1. iPhone showing signs of stabilization. After November and December iPhone sales deteriorated M/M, January sales trends improved, particularly after Apple rolled back recent dollar strength in the price of iPhone XR in China. Given Apple's December quarter experience of slowing growth through the quarter, we don't believe guidance extrapolates the better January trend, leaving room for modest upside in the quarter. Additionally, Apple balance sheet inventory typically increases slightly (+\$80M recent 3-year average) in the December quarter but the \$1B inventory increase in December 2018 indicates Apple likely didn't push as much into the channel due to deteriorating demand, suggesting a better set-up than a year ago but also that Apple March quarter iPhone revenue will look better than Apple suppliers. Finally, after the pre-announcement on January 2nd, investors worried about the impact of lengthening replacement cycles and reduced subsidies on global, not just China, iPhone demand but mature markets, especially the US, proved much more stable than China in the quarter. Net, iPhone sales trends may have bottomed, supplier data points are likely overly negative due to Apple's inventory build, and while iPhone replacement cycles are lengthening globally this headwind appears manageable

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Apple, Inc. (AAPL.O, AAPL US)

IT Hardware / United States of America

Stock Rating	Overweight
Industry View	In-Line
Price target	\$197.00
Shr price, close (Jan 29, 2019)	\$154.68
Mkt cap, curr (mm)	\$737,389
52-Week Range	\$233.47-142.00
Fiscal Year Ending	09/18 09/19e 09/20e 09/21e
ModelWare EPS (\$)	11.91 11.50 13.06 16.23
Prior ModelWare EPS (\$)	- 12.39 14.08 16.83
P/E	19.0 13.4 11.8 9.5
Consensus EPS (\$) ^S	11.79 12.02 13.33 14.87
Div yld (%)	1.2 2.0 2.2 2.4

Unless otherwise noted, all metrics are based on Morgan Stanley ModelWare framework

^S = Consensus data is provided by Thomson Reuters Estimates

e = Morgan Stanley Research estimates

QUARTERLY MODELWARE EPS (\$)

Quarter	2018	2019e Prior	2019e Current	2020e Prior	2020e Current
Q1	3.89	-	4.18a	4.72	4.52
Q2	2.73	2.84	2.37	3.24	2.87
Q3	2.34	2.45	2.14	2.82	2.52
Q4	2.91	2.90	2.77	3.25	3.09

a = Morgan Stanley Research estimates, a = Actual Company reported data

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outside of a few emerging markets facing macro and currency headwinds.

2. Company-level gross margin weakness more mix than promotion driven.

Heading into the quarter, investors worried that gross margins would trend toward 37% more permanently with greater promotional activity in the December quarter flowing into a price cut for iPhone XR in China in January. However, guidance for 37-38% gross margin was slightly better than feared and the margin pressure in the December quarter is almost entirely mix related. The mix shift away from iPhone (~38% gross margin) and toward other products where margins are lower (Mac, iPad, Wearables blend to a ~25% gross margin) during the December quarter explains about 35bps of the 50bps shortfall from the top-end of the 38-38.5% gross margin guidance range in the December quarter. So, while any price actions could have some modest impact on margins, the resulting mix shift toward higher margin iPhone suggests the 37-38% gross margin range is conservative.

3. Bullish tone on Services as margins expand. The December quarter marked the first quarter where Apple disclosed Services gross margin, which came in at 62.8%, up 450bps Y/Y and 170bps Q/Q, and above our 59% estimate. Additionally, many of the standalone Services segments performed well in the quarter, with App Store, Apple Pay, Cloud Services and App Store search ads all reaching quarterly revenue records. As we look forward, we remain bullish on the Services story given positive installed base trends (total active device installed base up 8% Y/Y, iPhone installed base up 9% Y/Y), a growing percentage of users that are paying for Services, a broadening of Services (with Tim Cook acknowledging for the first time Apple will launch original video content) and growth in paid subs - both at Apple Music (50M paid subs, up 11% from July '18) and total paid subscribers on the Services platform (360M, up 50% Y/Y). Plus, we believe there is upside bias to our 62.7% Services gross margins estimate in FY19 as fixed cost businesses, like iCloud, scale and China App Store revenue growth re-accelerates.

Earnings Variance

Exhibit 1: AAPL F1Q19 Earnings Variance

Apple Earnings Analysis

Ticker: AAPL
 Industry View: In-Line
 Rating: Overweight

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F2Q19 and FY19 Expectations

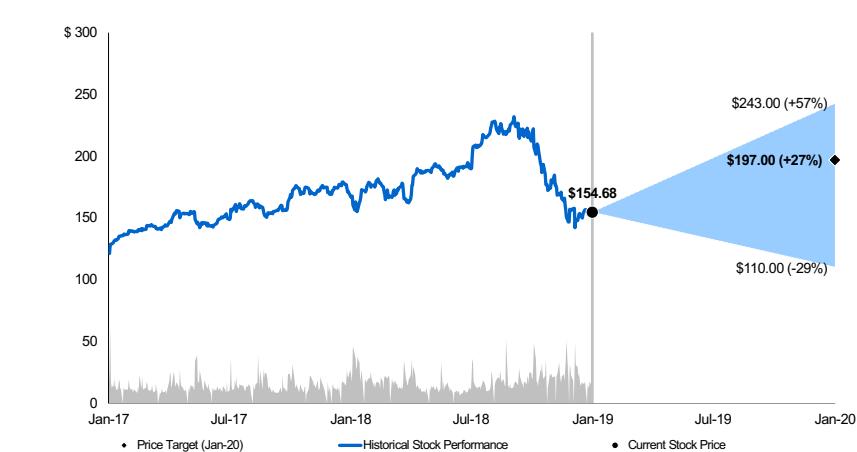
Consensus estimates (pre-call): F2Q19 revenue of \$58.8B and EPS of \$2.63. FY19 revenue of \$258.9B and EPS of \$11.94.

MS estimates (pre-call): F2Q19 revenue of \$62.0B and EPS of \$2.84. FY19 revenue of \$262.5B and EPS of \$12.39.

Company guidance: F2Q19 revenue \$55.59B, GM 37-38%, OPEX \$8.5-8.6B, OI&E \$300M and tax 17% before discrete items.

(\$ Millions)	F2Q17 A	F3Q17 A	F4Q17 A	F1Q18 A	F2Q18 A	F3Q18 A	F4Q18 A	F1Q19 A	F1Q19 E	% Delta	Share Impact	Cons. Est.
Total Revenues	52,896	45,408	52,579	88,293	61,137	53,265	62,900	84,310	84,093	0%	\$0.01	83,972
Y/Y Growth	5%	7%	12%	13%	16%	17%	20%	-5%	-5%			
Q/Q Growth	-32%	-14%	16%	68%	-31%	-13%	18%	34%	34%			
Gross Profit	20,591	17,488	19,931	33,912	23,422	20,421	24,084	32,031	31,969	0%	\$0.01	31,935
Gross Profit Margin	38.9%	38.5%	37.9%	38.4%	38.3%	38.3%	38.3%	38.0%	38.0%			38.0%
SG&A	3,718	3,783	3,814	4,231	4,150	4,108	4,216	4,783	4,457	7%	(\$0.06)	
SG&A as a % of Sales	7%	8%	7%	5%	7%	8%	7%	6%	5%			
R&D	2,776	2,937	2,997	3,407	3,378	3,701	3,750	3,902	4,251	-8%	\$0.06	
R&D as a % of Sales	5%	6%	6%	4%	6%	7%	6%	5%	5%			
Total Operating Expenses	6,494	6,720	6,811	7,638	7,528	7,809	7,966	8,685	8,708	0%		8,685
Operating Income	14,097	10,768	13,120	26,274	15,894	12,612	16,118	23,346	23,261	0%	\$0.01	23,250
Operating Margin	26.7%	23.7%	25.0%	29.8%	26.0%	23.7%	25.6%	27.7%	27.7%			
Other Income & Expense	587	540	797	756	274	672	303	560	550	2%	\$0.00	
Tax rate	24.9%	22.9%	23.0%	25.8%	14.5%	13.3%	14.0%	16.5%	16.5%			
Operating EPS	\$2.10	\$1.67	\$2.07	\$3.89	\$2.73	\$2.34	\$2.91	\$4.18	\$4.17		\$0.01	\$4.17
Share Count	5,262	5,233	5,184	5,158	5,068	4,927	4,848	4,773	4,770	0%		
Segment Revenue (\$M)	F2Q17 A	F3Q17 A	F4Q17 A	F1Q18 A	F2Q18 A	F3Q18 A	F4Q18 A	F1Q19 A	F1Q19 E			
iPhone	32,771	24,413	28,422	61,104	37,559	29,470	36,755	51,982	52,223	0%		52,665
Y/Y Growth	0%	2%	1%	13%	15%	21%	29%	-15%	-15%			
iPad	3,772	4,851	4,716	5,755	4,008	4,634	3,983	6,729	6,495	4%		5,908
Y/Y Growth	-15%	-1%	11%	6%	6%	4%	-16%	17%	13%			
Mac	5,773	5,520	7,098	6,824	5,776	5,258	7,340	7,416	7,153	4%		7,416
Y/Y Growth	13%	5%	24%	-5%	0%	-5%	3%	9%	5%			
Services	7,714	7,895	9,119	9,129	9,850	10,170	10,599	10,875	10,801	1%		10,872
Y/Y Growth	29%	32%	44%	16%	28%	29%	16%	19%	18%			
Wearables, Home and Accessories	2,866	2,728	3,224	5,481	3,944	3,733	4,223	7,308	7,421	-2%		7,329
Y/Y Growth	31%	23%	36%	36%	38%	37%	31%	33%	35%			
Segment Gross Margin (\$M)	F2Q17 A	F3Q17 A	F4Q17 A	F1Q18 A	F2Q18 A	F3Q18 A	F4Q18 A	F1Q19 A	F1Q19 E			
Product Gross Profit	16,194	12,869	14,596	28,589	17,611	14,319	17,619	25,197	25,596			
Product Gross Margin	35.8%	34.3%	33.6%	36.1%	34.3%	33.2%	33.7%	34.3%	34.9%			
Services Gross Profit	4,397	4,619	5,335	5,323	5,812	6,102	6,465	6,834	6,372			
Services Gross Margin	57.0%	58.5%	58.5%	58.3%	59.0%	60.0%	61.0%	62.8%	59.0%			
Regional Revenue (\$M)	F2Q17 A	F3Q17 A	F4Q17 A	F1Q18 A	F2Q18 A	F3Q18 A	F4Q18 A	F1Q19 A	F1Q19 E			
Americas	21,157	20,376	23,099	35,193	24,841	24,542	27,517	36,940				
Y/Y Growth	11%	13%	14%	10%	17%	20%	19%	5%				
Europe, Middle East, Africa	12,733	10,675	13,099	21,054	13,846	12,138	15,382	20,363				
Y/Y Growth	10%	11%	21%	14%	9%	14%	17%	-3%				
Greater China	10,726	8,004	9,801	17,956	13,024	9,551	11,411	13,169				
Y/Y Growth	-14%	-10%	12%	11%	21%	19%	16%	-27%				
Japan	4,485	3,624	3,858	7,237	5,468	3,867	5,161	6,910				
Y/Y Growth	5%	3%	-11%	26%	22%	7%	34%	-5%				
Rest of Asia Pacific	3,795	2,729	2,812	6,853	3,958	3,167	3,429	6,928				
Y/Y Growth	20%	15%	5%	17%	4%	16%	22%	1%				
Balance Sheet / Return Metrics	F2Q17 A	F3Q17 A	F4Q17 A	F1Q18 A	F2Q18 A	F3Q18 A	F4Q18 A	F1Q19 A	F1Q19 E			
CFO	12,523	8,363	15,656	28,293	15,130	14,488	19,523	26,690	21,940	22%		
FCF	9,548	6,086	11,791	25,483	10,935	11,221	16,482	23,335	18,752	24%		
Repurchase of Common Stock	7,161	7,093	7,795	10,095	22,756	20,783	19,104	8,796	14,000	-37%		
Total deferred Revenue	10,789	10,592	10,384	11,175	10,862	10,281	10,340	8,784	10,698	-18%		
Y/Y Growth	-16%	-7%	-6%	1%	1%	-3%	0%	-21%	-4%			
Inventory Turns	11	9	7	12	5	6	10	10	11	-7%		
Days Sales	20	25	31	24	21	24	34	19	27	-29%		
Days Payable	80	105	138	104	83	108	132	76	100	-24%		
Days Inventory	8	10	14	7	18	17	9	9	8	7%		
Cash Conversion	(52)	(70)	(93)	(73)	(43)	(67)	(89)	(48)	(65)			

Source: Company Data, Thomson Reuters, Morgan Stanley Research

AAPL Risk Reward**Growth Contribution from Services Underappreciated by Investors**

Source: Thomson Reuters, Morgan Stanley Research

Price Target \$197

Derived from base-case scenario.

Bull \$243

18.0x Bull Case CY19e EPS of \$13.50

Services revenue per device accelerates to 10%+ growth annually as Apple converts more users than expected to services customers and launches new Services such as original video content. The majority of growth comes from services but hardware declines exceed low expectations as replacement cycles level off earlier than in the base case and global macro factors are lesser headwinds than expected. Gross margins move closer to 38-40% due to higher Services revenue mix. Investors focus on monetization of Apple's 1.4B and growing device base and value Apple closer to that of a platform company given the greater confidence in the sustainability of Services growth. We assume an 18x P/E multiple on CY19 bull case EPS of \$3.50, driving our \$243 bull case valuation, which is supported by SOTP analysis that values Apples Services business on longer-term revenue discounted base to today, with an EV/Sales multiple more in-line with high growth platforms like FB, SNAP, TWTR, and NFLX.

Base \$197

SoTP driven and implies 16.8x Base Case CY19e EPS of \$11.72.

Sustained 20% Services revenue CAGR with the mix shift to higher margin Services and strong Wearables growth helps offset declining iPhone units. Lengthening smartphone replacement cycles (predominantly in China), lower carrier subsidies and economic weakness in emerging markets causes iPhone revenue to decline by 14% in FY19, with a partial recovery in FY20. However, accelerating Services growth combined with growing wearables and share buybacks act as offsets, helping drive a 4% revenue and 12% EPS CAGR through FY23. With Services acting as the primary driver of our forward estimates we use a sum-of-the-parts analysis to derive our price target, which credits Apple's hardware business with an EV/Sales multiple that blends HPQ and MSFT and Apple's services business with the median of 10 consumer platform peers and drives our \$197 PT, translating to a 16.8x P/E, roughly 1-turn above Apple's 10-year CY+1 P/E trading average in light of higher recurring, margin accretive Services growth.

Bear \$110**Investment Thesis**

■ Apple has the world's most valuable technology platform with over 1.4Bn active devices, and is well positioned to capture more of its users' time in areas such as video, augmented reality, health, autos and home. Sustained ~20% Services growth, positive product mix shift, and a stabilization of the hardware business are catalysts that can help sustainably re-rate shares.

Key Debates

■ *Can Apple sustainably grow revenue and EPS?* Yes, we believe the combination of increased services mix, strong wearables growth, higher share repurchases, potential M&A, and investments in new categories like video, augmented/virtual reality, artificial intelligence, health, and autos can offset declining iPhone units to drive 5% revenue growth and 12% EPS growth over the next 5 years.

■ *Can Services growth help re-rate shares?* Yes, we believe so. Apple is a structurally different company today than it was just 5 years ago, with a larger cash balance and a Services business that accounts for 13% of revenue and 21% of gross profit dollars today, growing to 30% of revenue and 46% of gross profit dollars by FY23. As device revenue slows, Services will take the baton, driving more sustainable and more profitable growth helping to re-rate shares higher.

■ *Can Apple accelerate innovation?* Yes, FY18 was the sixth year in a row that R&D growth outpaced revenue growth, translating to new products and services over time. Over the past three years, Apple spent an incremental \$11.6B on R&D compared to less than \$1B ahead of iPhone and iPad. This compares to minimal incremental spend at top auto makers (ex-Tesla) and \$10.8B of incremental spend at Alphabet on far more projects.

Potential Catalysts

■ Increasing services mix, driven by higher penetration of the user base, increased spend per user, and new services.

10x Bear Case CY19e EPS of \$11.00

Weakening global smartphone market overshadows Services growth, resulting in total company revenue declines and margin pressure. Apple continues to invest in future products and services, driving negative operating leverage, offset by continued share repurchases. Our sum of the parts analysis assumes lower-end of platform multiples, in-line with Google, for Apple Services and a more hardware skewed multiple on Apple's device revenue, implying a roughly 10x P/E, the lower end of where large cap hardware stocks have traded over the last year and significantly below Apple's 10-year average historical P/E.

- Rising iPhone ASPs, strong wearables growth speak to increasing customer engagement and spend and help shift narrative from product cycles to a platform story.
- Expanding the platform to new industries, for example healthcare, autos or homes, drives "halo effect" across Apple's businesses.
- Expanding points-of-sale, especially in emerging markets like India

Risks to Achieving Price Target

- Weak global consumer spending or increased price elasticity on the back of higher priced iPhones
- Maturing markets, and Android competition in smartphones and tablets
- Lack of traction with new product categories and/or services limits multiple expansion
- Carriers lengthening replacement cycles and/or lower subsidies or users replace batteries instead of upgrade
- Political, regulatory and legal risk as Apple gains profit share in mobile devices and remains dependent on Asian suppliers (i.e. Tariff risk) and consumers to deliver results

AAPL Financial Model

Exhibit 2: Apple Income Statement

(\$ in millions)	2018A				2019E				2020E				Fiscal Year				
	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19	Sep-19	Dec-19	Mar-20	Jun-20	Sep-20	2017A	2018A	2019E	2020E	2021E
Revenues	88,293	61,137	53,265	62,900	84,310	57,695	53,602	63,076	88,810	62,148	55,994	63,625	229,234	265,595	258,683	270,577	296,944
iPhone	61,104	37,559	29,470	36,755	51,982	30,399	25,810	33,054	52,253	31,874	25,207	30,094	139,495	164,888	141,245	139,428	150,498
iPad	5,755	4,008	4,634	3,983	6,729	4,578	5,094	4,385	6,573	4,069	4,797	4,280	18,750	18,380	20,786	19,718	18,697
Mac	6,824	5,776	5,258	7,340	7,416	6,151	5,665	7,473	7,401	6,139	5,657	7,471	25,567	25,198	26,705	26,668	26,846
Wearables, Home and Accessories	5,481	3,944	3,733	4,223	7,308	4,969	4,821	5,388	9,098	6,032	5,679	6,417	12,835	17,381	22,487	27,227	31,859
Services	9,129	9,850	10,170	10,599	10,875	11,598	12,212	12,776	13,485	14,034	14,654	15,363	32,588	39,748	47,461	57,537	69,044
Cost of Sales	54,381	37,715	32,844	38,816	52,279	35,926	33,130	39,325	55,537	38,149	34,163	39,133	141,048	163,756	160,661	166,982	182,235
Gross Profit	33,912	23,422	20,421	24,084	32,031	21,769	20,472	23,750	33,273	23,999	21,831	24,492	88,186	101,839	98,022	103,595	114,709
<i>Gross Margin</i>	<i>38.4%</i>	<i>38.3%</i>	<i>38.3%</i>	<i>38.3%</i>	<i>38.0%</i>	<i>37.7%</i>	<i>38.2%</i>	<i>37.7%</i>	<i>37.5%</i>	<i>38.6%</i>	<i>39.0%</i>	<i>38.5%</i>	<i>38.5%</i>	<i>38.3%</i>	<i>37.9%</i>	<i>38.3%</i>	<i>38.6%</i>
Operating Expenses	7,638	7,528	7,809	7,966	8,685	8,568	8,871	8,988	9,591	9,446	9,463	9,607	26,842	30,941	35,112	38,108	40,198
Research and Development	3,407	3,378	3,701	3,750	3,902	3,866	4,154	4,226	4,352	4,288	4,368	4,422	11,581	14,236	16,148	17,429	18,312
Selling, General and Administrative	4,231	4,150	4,108	4,216	4,783	4,702	4,717	4,762	5,240	5,158	5,095	5,185	15,261	16,705	18,964	20,679	21,886
Operating Income	26,274	15,894	12,612	16,118	23,346	13,201	11,601	14,762	23,682	14,552	12,368	14,884	61,344	70,898	62,910	65,487	74,511
<i>PTOP Margin</i>	<i>29.8%</i>	<i>26.0%</i>	<i>23.7%</i>	<i>25.6%</i>	<i>27.7%</i>	<i>22.9%</i>	<i>21.6%</i>	<i>23.4%</i>	<i>26.7%</i>	<i>23.4%</i>	<i>22.1%</i>	<i>23.4%</i>	<i>26.8%</i>	<i>26.7%</i>	<i>24.3%</i>	<i>24.2%</i>	<i>25.1%</i>
Total Interest & Other Income	756	274	672	303	560	301	361	345	347	337	325	300	2,745	2,005	1,567	1,309	1,162
Pretax Income	27,030	16,168	13,284	16,421	23,906	13,502	11,962	15,107	24,029	14,890	12,693	15,184	64,089	72,903	64,477	66,796	75,673
GAAP Income Tax Provision	6,965	2,346	1,765	2,296	3,941	2,295	2,033	2,568	4,085	2,531	2,158	2,581	15,738	13,372	10,838	11,355	12,864
Operating Tax Provision (excl one time tax eff)	6,965	2,346	1,765	2,296	3,941	2,295	2,033	2,568	4,085	2,531	2,158	2,581	15,738	13,372	10,838	11,355	12,864
<i>Effective Tax Rate</i>	<i>25.8%</i>	<i>14.5%</i>	<i>13.3%</i>	<i>14.0%</i>	<i>16.5%</i>	<i>17.0%</i>	<i>24.6%</i>	<i>18.3%</i>	<i>16.8%</i>	<i>17.0%</i>	<i>17.0%</i>						
Operating Net Income	20,065	13,822	11,519	14,125	19,965	11,207	9,928	12,539	19,944	12,358	10,535	12,603	48,351	59,531	53,639	55,440	62,808
<i>Operating Net Income Margin</i>	<i>22.7%</i>	<i>22.6%</i>	<i>21.6%</i>	<i>22.5%</i>	<i>23.7%</i>	<i>19.4%</i>	<i>18.5%</i>	<i>19.9%</i>	<i>22.5%</i>	<i>19.9%</i>	<i>18.8%</i>	<i>19.8%</i>	<i>21.1%</i>	<i>22.4%</i>	<i>20.7%</i>	<i>20.5%</i>	<i>21.2%</i>
Total Non-recurring Charges	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GAAP Net Income	20,065	13,822	11,519	14,125	19,965	11,207	9,928	12,539	19,944	12,358	10,535	12,603	48,351	59,531	53,639	55,440	62,808
Fully-diluted EPS																	
EPS - ModelWare	\$3.89	\$2.73	\$2.34	\$2.91	\$4.18	\$2.37	\$2.14	\$2.77	\$4.52	\$2.87	\$2.52	\$3.09	\$9.21	\$11.91	\$11.50	\$13.06	\$16.23
EPS - Reported	\$3.89	\$2.73	\$2.34	\$2.91	\$4.18	\$2.37	\$2.14	\$2.77	\$4.52	\$2.87	\$2.52	\$3.09	\$9.21	\$11.91	\$11.50	\$13.06	\$16.23
EPS - ModelWare excl. Stock Option Expe	\$4.14	\$2.99	\$2.61	\$3.19	\$4.51	\$2.65	\$2.44	\$3.08	\$4.91	\$3.15	\$2.77	\$3.39	\$10.13	\$12.97	\$12.72	\$14.29	\$17.71
Dividend Payment	3,339	3,190	3,653	3,530	3,568	3,449	3,781	3,630	3,623	3,449	3,753	3,589	12,769	13,712	14,428	14,414	14,434
Dividend Per Share	\$0.65	\$0.63	\$0.75	\$0.74	\$0.75	\$0.74	\$0.82	\$0.81	\$0.83	\$0.81	\$0.91	\$0.89	\$2.45	\$2.77	\$3.12	\$3.43	\$3.77
Period Ending Outstanding Shares	5,081.7	4,943.3	4,842.9	4,755.0	4,729.8	4,638.2	4,548.3	4,429.5	4,314.2	4,200.8	4,089.3	3,979.9	5,126.2	4,755.0	4,429.5	3,979.9	3,672.3
Avg Shares (Basic)	5,112.9	5,024.9	4,882.2	4,801.6	4,735.8	4,684.0	4,593.3	4,488.9	4,371.9	4,257.5	4,145.1	4,034.6	5,217.2	4,955.4	4,625.5	4,202.3	3,824.5
Avg Shares (Fully Diluted)	5,157.8	5,068.5	4,926.6	4,847.5	4,773.3	4,722.2	4,632.2	4,528.6	4,412.4	4,298.9	4,187.2	4,077.6	5,251.7	5,000.1	4,664.1	4,244.0	3,869.7

Source: Company Data, Morgan Stanley Research

Exhibit 3: Apple Income Statement Analysis

(\$ in millions)	2018A				2019E				2020E				Fiscal Year				
	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19	Sep-19	Dec-19	Mar-20	Jun-20	Sep-20	2017A	2018A	2019E	2020E	2021E
Margin Analysis																	
Gross Margin	38.4%	38.3%	38.3%	38.3%	38.0%	37.7%	38.2%	37.7%	37.5%	38.6%	39.0%	38.5%	38.5%	38.3%	37.9%	38.3%	38.6%
Product	36.1%	34.3%	33.2%	33.7%	34.3%	31.4%	31.0%	31.3%	33.1%	31.8%	30.8%	31.0%	35.2%	34.6%	32.3%	31.9%	31.7%
iPhone	38.4%	37.2%	36.6%	36.9%	36.9%	34.3%	34.0%	34.0%	35.5%	34.5%	34.0%	34.0%	38.8%	37.5%	35.1%	34.7%	34.4%
iPad	27.0%	25.0%	25.0%	25.0%	27.0%	25.0%	25.0%	25.0%	26.0%	25.0%	25.0%	25.0%	24.4%	25.6%	25.6%	25.3%	25.3%
Mac	27.0%	25.0%	25.0%	25.0%	27.0%	25.0%	25.0%	25.0%	26.0%	25.0%	25.0%	25.0%	24.6%	25.5%	25.6%	25.3%	25.3%
Wearables, Home and Accessories	31.5%	30.2%	28.4%	29.0%	30.1%	28.0%	28.0%	29.0%	30.0%	29.0%	27.5%	28.0%	33.7%	30.0%	28.9%	28.8%	28.3%
Services	58.3%	59.0%	60.0%	61.0%	62.8%	62.8%	62.7%	62.5%	62.0%	62.0%	62.0%	62.0%	58.0%	59.6%	62.7%	62.0%	61.5%
R&D	3.9%	5.5%	6.9%	6.0%	4.6%	6.7%	7.8%	6.7%	4.9%	6.9%	7.8%	7.0%	5.1%	5.4%	6.2%	6.4%	6.2%
SG&A	4.8%	6.8%	7.7%	6.7%	5.7%	8.2%	8.8%	7.6%	5.9%	8.3%	9.1%	8.2%	6.7%	6.3%	7.3%	7.6%	7.4%
Operating Expenses	8.7%	12.3%	14.7%	12.7%	10.3%	14.9%	16.6%	14.3%	10.8%	15.2%	16.9%	15.1%	11.7%	11.6%	13.6%	14.1%	13.5%
EBITDA Margin	29.9%	26.2%	23.9%	25.9%	27.9%	23.3%	22.2%	24.2%	27.5%	25.1%	25.3%	28.5%	31.2%	30.8%	29.1%	29.5%	30.8%
PTOP Margin	29.8%	26.0%	23.7%	25.6%	27.7%	22.9%	21.6%	23.4%	26.7%	23.4%	22.1%	23.4%	26.8%	26.7%	24.3%	24.2%	25.1%
Pretax Margin	30.6%	26.4%	24.9%	26.1%	28.4%	23.4%	22.3%	24.0%	27.1%	24.0%	22.7%	23.9%	28.0%	27.4%	24.9%	24.7%	25.5%
Net Income	22.7%	22.6%	21.6%	22.5%	23.7%	19.4%	18.5%	19.9%	22.5%	19.9%	18.8%	19.8%	21.1%	22.4%	20.7%	20.5%	21.2%
Year-Over-Year Growth (%)																	
Revenue	13%	16%	17%	20%	-5%	-6%	1%	0%	5%	8%	4%	1%	6%	16%	-3%	5%	10%
iPhone	13%	15%	21%	29%	-15%	-19%	-12%	-10%	1%	5%	-2%	-9%	2%	18%	-14%	-1%	8%
iPad	6%	6%	-4%	-16%	17%	14%	10%	10%	-2%	-11%	-6%	-2%	-9%	-2%	13%	-5%	-5%
Mac	-5%	0%	-5%	3%	9%	6%	8%	2%	0%	0%	0%	0%	12%	-1%	6%	0%	1%
Wearables, Home and Accessories	36%	38%	37%	31%	33%	26%	29%	28%	24%	21%	18%	19%	15%	35%	29%	21%	17%
Services	16%	28%	29%	16%	19%	18%	20%	21%	24%	21%	20%	20%	34%	22%	19%	21%	20%
Gross Margin	12%	14%	17%	21%	-6%	-7%	0%	-1%	4%	10%	7%	3%	5%	15%	-4%	6%	11%
iPhone	11%	8%	15%	28%	-18%	-25%	-19%	-17%	-3%	6%	-2%	-9%	-4%	14%	-20%	-3%	7%
iPad	17%	11%	-3%	-14%	17%	14%	10%	10%	-6%	-11%	-6%	-2%	-6%	3%	13%	-6%	-5%
Mac	5%	4%	-5%	3%	9%	6%	8%	2%	-4%	0%	0%	0%	16%	2%	6%	-1%	1%
Wearables, Home and Accessories	25%	24%	18%	14%	27%	17%	27%	28%	24%	26%	16%	15%	4%	20%	25%	21%	15%
Services	17%	32%	32%	21%	28%	25%	25%	24%	22%	19%	19%	19%	38%	25%	26%	20%	19%
R&D	19%	22%	26%	25%	15%	14%	12%	13%	12%	11%	5%	5%	15%	23%	13%	8%	5%
SG&A	7%	12%	9%	11%	13%	13%	15%	13%	10%	10%	8%	9%	8%	9%	14%	9%	6%
Operating Expenses	12%	16%	16%	17%	14%	14%	14%	13%	10%	10%	7%	7%	11%	15%	13%	9%	5%
PTOP Margin	12%	13%	17%	23%	-11%	-17%	-6%	-8%	1%	10%	7%	1%	2%	16%	-11%	4%	14%
Pretax Margin	12%	10%	17%	18%	-12%	-16%	-10%	-8%	1%	10%	6%	1%	4%	14%	-12%	4%	13%
Net Income	12%	25%	32%	32%	0%	-19%	-14%	-11%	0%	10%	6%	1%	6%	23%	-10%	3%	13%
ModelWare EPS	16%	30%	40%	41%	8%	-13%	-8%	-5%	8%	21%	17%	12%	11%	29%	-3%	14%	24%
Sequential Growth (%)																	
Revenue	68%	-31%	-13%	18%	34%	-32%	-7%	18%	41%	-30%	-10%	14%					
iPhone	115%	-39%	-22%	25%	41%	-42%	-15%	28%	58%	-39%	-21%	19%					
iPad	22%	-30%	16%	-14%	69%	-32%	11%	-14%	50%	-38%	18%	-11%					
Mac	-4%	-15%	-9%	40%	1%	-17%	-8%	32%	-1%	-17%	-8%	32%					
Wearables, Home and Accessories	70%	-28%	-5%	13%	73%	-32%	-3%	12%	69%	-34%	-6%	13%					
Services	0%	8%	3%	4%	3%	7%	5%	5%	4%	4%	4%	5%					
Gross Margin	70%	-31%	-13%	18%	33%	-32%	-6%	16%	40%	-28%	-9%	12%					
iPhone	122%	-40%	-23%	26%	41%	-46%	-16%	28%	65%	-41%	-22%	19%					
iPad	34%	-36%	16%	-14%	82%	-37%	11%	-14%	56%	-40%	18%	-11%					
Mac	4%	-22%	-9%	40%	9%	-23%	-8%	32%	3%	-20%	-8%	32%					
Wearables, Home and Accessories	60%	-31%	-11%	16%	79%	-37%	-3%	16%	75%	-36%	-11%	15%					
Services	0%	9%	5%	6%	6%	7%	5%	4%	5%	4%	4%	5%					
R&D	14%	-1%	10%	1%	4%	-1%	7%	2%	3%	-1%	2%	1%					
SG&A	11%	-2%	-1%	3%	13%	-2%	0%	1%	10%	-2%	-1%	2%					
Operating Expenses	12%	-1%	4%	2%	9%	-1%	4%	1%	7%	-2%	0%	2%					
PTOP Margin	100%	-40%	-21%	28%	45%	-43%	-12%	27%	60%	-39%	-15%	20%					
Pretax Margin	94%	-40%	-18%	24%	46%	-44%	-11%	26%	59%	-38%	-15%	20%					
Net Income	87%	-31%	-17%	23%	41%	-44%	-11%	26%	59%	-38%	-15%	20%					
ModelWare EPS	88%	-30%	-14%	25%	44%	-43%	-10%	29%	63%	-36%	-12%	23%					
Revenue Mix																	
iPhone	69%	61%	55%	58%	62%	53%	48%	52%	59%	51%	45%	47%	61%	62%	55%	52%	51%
iPad	7%	7%	9%	6%	8%	8%	10%	7%	7%	9%	7%	7%	8%	7%	8%	7%	6%
Mac	8%	9%	10%	12%	9%	11%	11%	12%	8%	10%	10%	12%	11%	9%	10%	10%	9%
Wearables, Home and Accessories	6%	6%	7%	7%	9%	9%	9%	9%	10%	10%	10%	10%	6%	7%	9%	10%	11%
Services	10%	16%	19%	17%	13%	20%	23%	20%	15%	23%	26%	24%	14%	15%	18%	21%	23%

Source: Company Data, Morgan Stanley Research

Exhibit 4: Apple Balance Sheet

(\$ in millions)	2018A				2019E				2020E								
	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19	Sep-19	Dec-19	Mar-20	Jun-20	Sep-20	2017A	2018A	2019E	2020E	2021E
Assets																	
Current Assets:																	
Cash and cash equivalents	27,491	45,059	31,971	25,913	44,771	88,664	79,860	73,094	67,842	61,095	47,973	88,447	20,289	25,913	73,094	88,447	85,430
Short-term investments	257,606	222,167	211,772	211,187	200,264	150,264	150,264	150,264	150,264	150,264	150,264	100,264	248,606	211,187	150,264	100,264	100,264
Accounts receivable	23,440	14,324	14,104	23,186	18,077	15,850	15,148	20,568	23,422	15,708	13,390	19,364	17,874	23,186	20,568	19,364	24,418
Inventories	4,421	7,662	5,936	3,956	4,988	3,948	3,601	4,275	7,934	3,354	3,342	3,828	4,855	3,956	4,275	3,828	4,656
Deferred tax assets	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546
Other current assets	33,250	14,581	19,205	32,350	25,790	14,970	19,149	32,695	25,790	14,970	19,149	32,695	26,189	32,350	32,695	32,695	32,695
Total Current Assets	351,754	309,339	288,534	302,138	299,436	279,242	273,568	286,441	280,798	250,937	239,664	250,144	323,359	302,138	286,441	250,144	253,009
Property, Plant & Equipment, net	33,679	35,077	38,117	41,304	39,597	45,175	45,593	46,377	47,022	47,687	47,974	48,276	33,783	41,304	46,377	48,276	48,392
Acquired Intangible Assets	8,038	8,687	8,484	8,385	13,052	8,343	8,399	8,454	8,508	8,561	8,614	8,667	8,015	8,385	8,454	8,667	8,871
Other assets	13,323	14,399	14,062	13,898	21,634	15,119	14,765	14,593	22,716	15,875	15,503	15,323	10,162	13,898	14,593	15,323	16,089
Non-current debt and equity investments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Fixed Assets	55,040	58,163	60,663	63,587	74,283	68,637	68,757	69,424	78,246	72,123	72,092	72,265	51,960	63,587	69,424	72,265	73,352
Total Assets	406,794	367,502	349,197	365,725	373,719	347,879	342,326	355,865	359,044	323,060	311,756	322,409	375,319	365,725	355,865	322,409	326,361
Liabilities																	
Current Liabilities:																	
Accounts payable	62,985	34,311	38,489	55,888	44,293	37,900	38,892	57,706	64,081	39,826	40,847	57,424	49,049	55,888	57,706	57,424	61,459
Accrued expenses	34,325	34,531	32,587	40,230	42,249	29,252	30,018	34,466	33,029	31,121	30,896	34,710	33,292	40,230	34,466	34,710	40,117
Current Debt	18,478	20,478	17,472	20,748	21,741	21,741	21,741	21,741	21,741	21,741	21,741	21,741	18,473	20,748	21,741	21,741	21,741
Other current liabilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Current Liabilities	115,788	89,320	88,548	116,866	108,283	88,893	90,651	113,913	118,851	92,688	93,484	113,875	100,814	116,866	113,913	113,875	123,317
Non-Current Liabilities																	
Long-term debt	103,922	101,362	97,128	93,735	92,989	92,989	92,989	92,989	92,989	92,989	92,989	92,989	97,207	93,735	92,989	92,989	92,989
Deferred revenue - non-current	3,131	3,087	2,878	2,797	3,238	2,624	2,696	2,605	2,719	2,709	2,673	2,626	2,836	2,797	2,605	2,626	2,758
Deferred tax liabilities	42,904	46,005	44,844	44,330	50,467	50,467	50,467	50,467	50,467	50,467	50,467	50,467	39,565	44,330	50,467	50,467	50,467
Other non-current liabilities	850	850	850	850	850	850	850	850	850	850	850	850	850	850	850	850	850
Total Non-Current Liabilities	150,807	151,304	145,700	141,712	147,544	146,930	147,002	146,911	147,025	147,015	146,979	146,932	140,458	141,712	146,911	146,932	147,065
Total Liabilities	266,595	240,624	234,248	258,578	255,827	235,823	237,653	260,824	265,876	239,703	240,463	260,807	241,272	258,578	260,824	260,807	270,382
Series A preferred stock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Shareholder's Equity	140,199	126,878	114,949	107,147	117,892	112,056	104,672	95,041	93,168	83,357	71,293	61,602	134,047	107,147	95,041	61,602	55,979
Total Liabilities and Shareholders' Equity	406,794	367,502	349,197	365,725	373,719	347,879	342,326	355,865	359,044	323,060	311,756	322,409	375,319	365,725	355,865	322,409	326,361

Source: Company Data, Morgan Stanley Research

Exhibit 5: Apple Cash Flow Statement

(\$ in millions)	2018A				2019E				2020E				2021E				
	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19	Sep-19	Dec-19	Mar-20	Jun-20	Sep-20	2017A	2018A	2019E	2020E	2021E
Cash Flow Statement (Non Cumulative)																	
Operating activities:																	
Net Income / (Loss)	20,065	13,822	11,519	14,125	19,965	11,207	9,928	12,539	19,944	12,358	10,535	12,603	48,351	59,531	53,639	55,440	62,808
Cumulative effect of accounting change	-	-	-	-	-	-	-	-	-	-	-	-	10,157	10,903	12,373	14,281	16,900
Adjustments to reconcile net income:													4,840	5,340	5,667	5,222	5,731
Depreciation & Amortization	2,745	2,739	2,665	2,754	3,395	2,899	2,997	3,082	3,225	3,322	3,813	3,922	5,966	(32,590)	53	-	-
Stock based compensation expense	1,296	1,348	1,351	1,345	1,559	1,327	1,394	1,388	1,714	1,199	1,081	1,228					
Provision for (benefit from) deferred inc	(33,737)	(498)	1,126	519	53	-	-	-	-	-	-	-					
Gain on non-current investments, net	-	-	-	-	-	-	-	-	-	-	-	-					
Gain on short-term investments, net	-	-	-	-	-	-	-	-	-	-	-	-					
Unrealized loss on conv. securities	-	-	-	-	-	-	-	-	-	-	-	-					
Loss on sale of PP&E	-	-	-	-	-	-	-	-	-	-	-	-					
Non-cash restructuring	-	-	-	-	-	-	-	-	-	-	-	-					
In-Process R&D	-	-	-	-	-	-	-	-	-	-	-	-					
Tax benefit from ESO	-	-	-	-	-	-	-	-	-	-	-	-					
Changes in Operating Assets and Liabilities:																	
Accounts receivable	(5,570)	9,093	233	(9,078)	5,130	2,227	702	(5,420)	(2,854)	7,715	2,318	(5,974)	(2,093)	(5,322)	2,639	1,204	(5,054)
Inventories	434	(3,241)	1,693	1,942	(1,076)	1,040	347	(673)	(3,659)	4,580	12	(486)	(2,723)	828	(363)	446	(828)
Other current assets	(197)	(856)	988	(358)	6,905	10,820	(4,179)	(13,546)	6,905	10,820	(4,179)	(13,546)	(5,318)	(423)	-	-	-
Other assets	(9,660)	19,375	(4,179)	(13,546)	(886)	6,515	354	172	(8,123)	6,841	371	181	(4,254)	(8,010)	6,155	(730)	(766)
Accounts payable	14,588	(27,808)	2,081	20,314	(8,501)	(6,393)	991	18,814	6,375	(24,255)	1,021	16,577	9,618	9,175	4,912	(282)	4,035
Deferred revenue	791	(313)	(581)	59	(370)	(614)	72	(91)	114	(10)	(36)	(46)	(626)	(44)	(1,003)	21	132
Accrued restructuring costs	-	-	-	-	-	-	-	-	-	-	-	-					
Other current liabilities	37,538	1,469	(2,408)	1,447	516	(12,997)	766	4,448	(1,437)	(1,908)	(224)	3,813	(320)	38,046	(7,267)	244	5,407
Deferred tax liabilities	-	-	-	-	-	-	-	-	-	-	-	-					
Net Cash Provided by Operating Activities	28,293	15,130	14,488	19,523	26,690	16,030	13,373	20,713	22,203	20,662	14,711	18,271	63,598	77,434	76,806	75,847	88,367
Investing activities:																	
Purchase of short-term investments	(41,272)	(7,177)	(7,684)	(15,223)	(7,077)	-	-	-	-	-	-	-	(159,486)	(71,356)	(7,077)	-	-
Proceeds from maturities of short-term inv	14,048	17,836	14,406	9,591	7,203	50,000	-	-	-	-	-	50,000	31,775	55,881	57,203	50,000	-
Proceeds from sales of short-term investm	16,801	22,141	2,672	6,224	9,723	-	-	-	-	-	-	-	94,564	47,838	9,723	-	-
Purchases of long-term investments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Proceeds from sale of PP&E	-	-	-	-	-	123	139	143	141	146	157	161	-	-	405	605	681
Purchase of PP&E	(2,810)	(4,195)	(3,267)	(3,041)	(3,355)	(3,724)	(3,443)	(3,896)	(3,899)	(4,019)	(4,143)	(4,270)	(12,451)	(13,313)	(14,419)	(16,330)	(17,234)
Cash paid for acquisition of technology	(154)	(151)	(126)	(290)	(167)	(167)	(167)	(167)	(167)	(167)	(167)	(167)	(344)	(721)	(668)	(668)	(668)
Proceeds from sale of ARM shares	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	(203)	256	(2,054)	(262)	(483)	-	-	-	-	-	-	-	(504)	(2,263)	(483)	-	-
Net cash used in investing activities	(13,590)	28,710	3,947	(3,001)	5,844	46,232	(3,471)	(3,921)	(3,924)	(4,040)	(4,153)	45,724	(46,446)	16,066	44,684	33,607	(17,221)
Financing activities:																	
Proceeds from issuance of common stock	-	327	1	341	-	80	75	72	92	80	73	68	555	669	227	313	271
Excess tax benefits from stock-based com	-	-	-	-	-	-	-	-	-	-	-	-	627	-	-	-	-
Taxes paid related to net share settlement	(1,038)	(152)	(1,077)	(260)	(1,318)	-	-	-	-	-	-	-	(1,874)	(2,527)	(1,318)	-	-
Dividends and dividend equivalent rights p	(3,339)	(3,190)	(3,653)	(3,530)	(3,568)	(3,449)	(3,781)	(3,630)	(3,623)	(3,449)	(3,753)	(3,589)	(12,769)	(13,712)	(14,428)	(14,414)	(14,434)
Repurchase of common stock	(10,095)	(22,756)	(20,783)	(19,104)	(8,796)	(15,000)	(15,000)	(20,000)	(20,000)	(20,000)	(20,000)	(20,000)	(32,900)	(72,738)	(58,796)	(80,000)	(60,000)
Increase (decrease) in long-term borrowing	6,971	(502)	(6,000)	-	-	-	-	-	-	-	-	-	28,662	469	-	-	-
Increase (decrease) in notes payable to ba	-	1	(11)	(27)	6	-	-	-	-	-	-	-	352	(37)	6	-	-
Net Cash Used in Financing Activities	(7,501)	(26,272)	(31,523)	(22,580)	(13,676)	(18,370)	(18,705)	(23,558)	(23,531)	(23,369)	(23,680)	(23,522)	(17,347)	(87,876)	(74,309)	(94,101)	(74,162)
Increase/(Decrease) in Cash and Cash Equ	7,202	17,568	(13,088)	(6,058)	18,858	43,893	(8,804)	(6,766)	(5,252)	(6,746)	(13,122)	40,473	(195)	5,624	47,181	15,353	(3,017)
Adjustments for restatements	-	-	-	-	-	-	-	-	-	-	-	-					
Cash and Cash Equivalents at Beginning of P	20,289	27,491	45,059	31,971	25,913	44,771	88,664	79,860	73,094	67,842	61,095	47,973	20,484	20,289	25,913	73,094	88,447
Cash and Cash Equivalents at End of Per	27,491	45,059	31,971	25,913	44,771	88,664	79,860	73,094	67,842	61,095	47,973	88,447	20,289	25,913	73,094	88,447	85,430

Source: Company Data, Morgan Stanley Research

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(as of December 31, 2018)

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	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MISC
Overweight/Buy	1143	36%	282	40%	25%	540	38%
Equal-weight/Hold	1428	45%	336	47%	24%	651	46%
Not-Rated/Hold	46	1%	6	1%	13%	6	0%
Underweight/Sell	566	18%	86	12%	15%	232	16%
TOTAL	3,183		710			1429	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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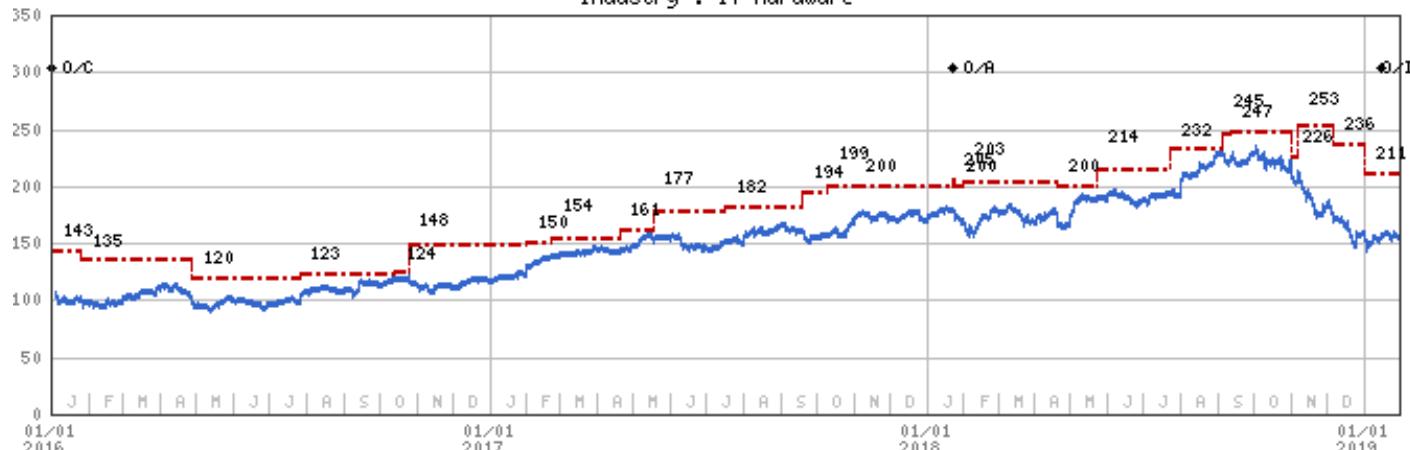
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Stock Price, Price Target and Rating History (See Rating Definitions)

Apple, Inc. (AAPL.O) - As of 1/29/19 in USD
Industry : IT Hardware



Stock Rating History: 1/1/16 : O/C; 1/23/18 : O/R; 1/15/19 : O/I

Price Target History: 12/13/15 : 143; 1/26/16 : 135; 4/27/16 : 120; 7/26/16 : 123; 10/14/16 : 124;
10/25/16 : 148; 1/31/17 : 150; 2/21/17 : 154; 4/19/17 : 161; 5/17/17 : 177; 7/16/17 : 182; 9/19/17 : 194;
10/10/17 : 199; 11/2/17 : 200; 1/23/18 : 205; 1/25/18 : 200; 2/1/18 : 203; 4/20/18 : 200; 5/23/18 : 214;
7/23/18 : 232; 9/5/18 : 245; 9/12/18 : 247; 11/1/18 : 226; 11/7/18 : 253; 12/7/18 : 236; 1/2/19 : 211

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) ■
Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
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INDUSTRY COVERAGE: IT Hardware

COMPANY (TICKER)	RATING (AS OF)	PRICE* (01/29/2019)
Katy L. Huberty, CFA		
Apple, Inc. (AAPL.O)	O (05/26/2009)	\$154.68
CDW Corporation (CDW.O)	E (08/06/2013)	\$81.92
Dell Technologies Inc. (DELL.N)	E (01/15/2019)	\$46.85
Electronics for Imaging Inc (EFII.O)	U (08/03/2017)	\$24.64
Hewlett Packard Enterprise (HPE.N)	E (01/15/2019)	\$15.37
HP Inc. (HPQ.N)	E (01/23/2018)	\$21.88
IBM (IBM.N)	++	\$134.33
NCR Corp. (NCR.N)	E (09/25/2011)	\$26.60
NetApp Inc (NTAP.O)	U (01/15/2019)	\$62.59
Nutanix Inc (NTNX.O)	O (01/15/2019)	\$49.40
Pure Storage Inc (PSTGN)	E (05/18/2017)	\$17.30
Seagate Technology(STX.O)	O (04/09/2018)	\$42.77
Teradata (TDC.N)	O (01/15/2019)	\$43.96
Xerox Corp (XRXN)	++	\$27.07
Yuuji Anderson		
Fitbit Inc (FIT.N)	U (04/01/2018)	\$6.00
Garmin Ltd (GRMN.O)	E (01/07/2015)	\$68.68
GoPro Inc (GPRO.O)	U (01/23/2018)	\$4.82
Sonos Inc. (SONO.O)	O (01/28/2019)	\$11.20

Stock Ratings are subject to change. Please see latest research for each company.

* Historical prices are not split adjusted.

Apple

AAPL-NSDQ	Rating Market Perform	Price: Jan-29 \$154.68	Target \$153.00	Total Rtn 0.8%
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iPhone Woes Hit Estimates; Remain Market Perform

Bottom Line: There were no major surprises with December-quarter results given the negative preannouncement earlier this month. Management did not provide details surrounding units/ASPs across products, but did provide gross margin for products and services. Services margin was a focus, and came in largely in line with consensus speculation. The company also provided guidance for the March quarter that was below our and Street expectations across the board. We are lowering our estimates, and remain Market Perform as we see no catalyst on the horizon.

Key Points

Results. Revenue of \$84.3 billion was just ahead of our and Street expectations. Recall that Apple negatively preannounced results earlier this month, and said it expected revenue of \$84 billion relative to prior guidance of \$89 billion to \$93 billion. Gross margin of 38% was in line with the preannouncement and our estimate, and 10bps below the Street. EPS of \$4.18 was a penny/two cents ahead of consensus/our expectations.

Guidance. March-quarter revenue guidance range was below our expectations, despite another wide range (\$4B range), and contained Street expectations just above the high end. Apple expects revenue of \$55 billion to \$59 billion, below the Street's prior estimate at \$59.4 billion and vs. our \$62.2 billion. We are lowering our iPhone unit estimates to 44.0 million for March (from 47.0 million prior, Street was at 75.0 million), as ASPs drop to \$704 (vs. \$752 prior).

iPhones. All of the revenue shortfall was a result of poor iPhone sales in China. While this seems temporary, we estimate that AAPL still sold 35 million units in China last year, which could get worse this year. We are impressed by the 900+ million iPhone active users. Although we do not know the new/used phone split, we estimate an iPhone average life in the 3.0–3.5 year range.

Lowering estimates, target. We are lowering our FY2019 EPS estimate from \$12.35 to \$11.40, and our FY2020 EPS estimate moves from \$14.18 to \$12.22. Our price target remains \$153, which continues to assume the stock trades to 12x, our new CY2020 EPS.

Key Changes

	Estimates	Q2 / 19E	2019E	2020E
EPS	\$2.45	\$11.40	\$12.22	
Previous	\$2.80	\$12.35	\$14.18	
CFPS	\$3.25	\$13.73	\$13.70	
Previous	\$0.46	\$15.52	\$0.00	
Revenue	\$58,138	\$254,811	\$260,511	
Previous	\$62,263	\$266,102	\$282,684	

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Company Data				
	in \$			
Dividend	\$2.92	Shares O/S (mm)	4,729.8	
Yield	1.9%	Market Cap (mm)	\$731,605	
AD Vol. (mm)	41.59	Net Debt (mm)	\$(145,386)	
BMO Estimates				
(FY- Sep .)	2018A	2019E	2020E	
EPS	\$11.91	\$11.40↓	\$12.22↓	
CFPS	\$12.82	\$13.73↓	\$13.70↑	
Revenue	\$265,595	\$254,811↓	\$260,511↓	
EBITDA	\$81,801	\$72,972↓	\$71,408↓	
Consensus Estimates				
	2018A	2019E	2020E	
EPS		\$11.92	\$13.31	
Valuation				
	2018A	2019E	2020E	
P/E	13.0x	13.6x	12.7x	
EV/EBITDA	8.7x	9.8x	10.0x	
EV/FCF	13.9x	11.1x	11.2x	
QTR. EPS				
	Q1	Q2	Q3	Q4
2018A	\$3.89	\$2.73	\$2.34	\$2.91
2019E	\$4.18a	\$2.45	\$2.05	\$2.68
2020E	\$4.18	\$2.73	\$2.32	\$2.95

Our Thesis

Although we believe upgrades off a growing installed base will help drive further unit growth, we believe the stock will be in a trading range for at least the remainder of the current product cycle. We continue to model double-digit Services revenue growth, supported by both new and used devices.

Apple - Block Summary Model

Income Statement	2018A	2019E	2020E
Revenue	\$265,595	\$254,811	\$260,511
Gross Margin	38.5%	38.3%	38.0%
Opex	26,842	30,941	34,735
Operating Margin	26.8%	26.7%	24.3%
Adjusted Net Income	48,351	59,531	52,994
Adjusted EPS	\$9.21	\$11.91	\$11.40
iPhone Revenue	141,319	164,888	139,468
iPhone Units	217	218	188
iPhone ASP	652	757	740
iPad Revenue	19,222	18,380	20,868
Mac Revenue	25,850	25,198	26,164
Cash Flow Statement	2018A	2019E	2020E
Cash Provided From Operations	63,598	77,434	78,076
Capex	(12,451)	(13,313)	(14,230)
Cash Provided From Financing	(17,347)	(87,876)	(76,614)
Cash Used for Investing	(46,446)	16,066	54,969
Change in Cash	(195)	5,624	56,432
Ending Cash Balance	20,342	25,966	82,398
FCF	51,147	64,121	63,846
Balance Sheet	2018A	2019E	2020E
Total Current Assets	131,339	186,727	231,990
Total Assets	365,725	364,079	335,290
Total Current Liabilities	116,866	122,072	125,811
Total Liabilities	258,578	272,616	280,355
Total Shareholders' Equity	107,147	91,463	54,935
Total Liabilities and Share Equity	365,725	364,079	335,290
Gross Cash	237,100	222,609	187,779
Total Debt	114,483	114,730	114,730
Net Cash	122,617	107,879	73,049

Source: BMO Capital Markets, Company Reports

New Scenarios

Valuation

Our target price of \$153 assumes the stock trades to 12x our CY2020 EPS estimate.

Upside Scenario

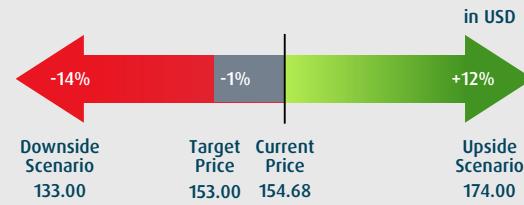
\$174.00

Our upside case for AAPL is a target of \$174 based on CY2020 EPS of \$13.41 with a target multiple of 13x P/E. Our upside case includes an additional 100 bps of revenue growth and an additional 100 bps of margin expansion in CY20 versus our base case assumptions.

Downside Scenario

\$133.00

By comparison, our downside case for AAPL is a target of \$133 based on CY2020 EPS of \$12.11 with a target multiple of 11x P/E. This case assumes a 100 bps reduction of revenue growth and 100 bps less operating margin in CY20 versus our base case assumptions.



Key Catalysts

With the iPhone X story playing out, we are starting to see early results of how consumers have reacted to the new higher-priced flagship models. Beyond that, we expect speculation to expand about the fall 2018 refresh. We are waiting to see if the next iPhone cycle will do a better job of prompting an upgrade cycle.

Company Description

Apple designs and markets personal computing and communications devices and services. The company's products include iPhone handsets, iMac, and MacBook computers, and iPad tablets. The company runs 450-plus retail stores worldwide and offers the iTunes store for digital content, the Apple Music streaming service, and the Apple Pay solution for contactless payments.



AAPL-NSDQ
Research



Glossary



Company
Models

Apple reported December-quarter results that were basically in line with preannounced results that dramatically missed the mark earlier this month. As expected, management did not provide details surrounding units and ASPs for the iPhone, iPad and Mac. However, the company did provide gross margin for products and services, separately. Services margin was a focus for the Street, and came in largely in line with consensus speculation. We note that while Services revenue of \$10.9 billion was just ahead of recently guided \$10.8 billion, the company did not provide the base revenue number before benefitting from the new accounting change (ASC 606). The company provided guidance for the March quarter that was below our and Street expectations across the board.

Results, Guidance, and Updated Estimates

There were no major surprises with December-quarter results given the negative preannouncement earlier this month. Revenue of \$84.3 billion was just ahead of our and Street expectations. Recall that Apple negatively preannounced results earlier this month, and said it expected revenue of \$84 billion relative to prior guidance of \$89 billion to \$93 billion. In line with China commentary at the time of the preannouncement, Greater China revenue was down 27% y/y. Gross margin of 38% was in line with the preannouncement and our estimate, and 10bps below the Street. Management also started providing gross margin for both products and services. Products gross margin of 34.3% compared to 36.1% a year ago, while Services margin of 62.8% was well ahead of 58.3% in the year-ago quarter. EPS of \$4.18 was a penny/two cents ahead of consensus/our expectations. Share repurchase of \$8.8 billion (38 million shares for \$8.2 billion in the open market) in the quarter appeared light to us.

We note that our prior estimates for individual product categories were not inclusive of the just-adopted ASC 606 (accounting change surrounding revenue recognition) – where Service revenue is higher vs. historicals (~\$625mm/qtr) and iPhone/iPad/Mac are subsequently lower vs. prior – but have been adjusted going forward. The company provided only four quarters of historical pro forma adjusted for 606 revenue (for F2018).

As the first quarter without iPhone unit commentary, we estimate that iPhone units of 67.0 million were just below our 68.0 estimate, with a slightly higher ASP (\$776 vs. \$771). Management did share an iPhone user base of over 900 million, which is higher than we would have expected. We are still struggling to figure out the new/used buyer ratio, but the recent disclosure leads us to believe that replacement rates have extended past three years.

Services revenue growth decelerated again this quarter (up 19% y/y vs. up 25-40% y/y in F2018), but management reiterated plans to double F2016 revenue by F2020. iPad revenue witnessed double-digit growth in four out of five geographic regions, with an install base hitting an all-time high, and Macs posted double-digit growth in the U.S., Western Europe, Central/Eastern Europe, Japan, Korea and South Asia. Both iPad and Mac had around half of its customers in the December quarter new to the product.

March-quarter revenue guidance range was below our expectations, despite another wide range (\$4B range), and contained Street expectations just above the high end. Apple expects revenue of \$55 billion to \$59 billion, below the Street's prior estimate at \$59.4 billion and vs. our \$62.2 billion. We are lowering our iPhone unit estimates to 44.0 million for March (from 47.0 million prior, Street was at 75.0 million), as ASPs drop to \$704 (vs. \$752 prior).

Gross margin guidance of 37.0% to 38.0% is flat to down vs. December-quarter margin of 38%, below our 38.1%, and in line with consensus. Opex guidance of \$8.6-8.7 billion is higher than we were modeling (\$8.4 billion), as spending continues to grow by double-digit percentages.

Exhibit 2: Quarterly Variance Table

(\$m, except per share)	F1Q19				F2Q19E			
	Actual	BMO	Prior Consensus	Guidance	Current Guidance	BMO	BMO	Prior Consensus
iPhone Revenue	\$51,982	\$52,413	\$52,867			\$30,970	\$35,366	\$33,231
Y/Y Growth	-14.9%	-14.2%	-13.5%			-17.5%	-5.8%	-11.5%
iPhone Units	67.0 M	68.0 M	68.0 M			44.0 M	47.0 M	45.0 M
Y/Y Growth	-13.3%	-12.0%	-12.0%			-15.7%	-10.0%	-13.8%
iPhone ASP	\$776	\$771	\$812			\$704	\$752	\$757
Y/Y Growth	-1.8%	-2.5%	2.8%			-2.1%	4.6%	5.2%
iPad Revenue	\$6,729	\$6,446	\$6,069			\$4,700	\$4,698	\$4,135
Y/Y Growth	16.9%	12.0%	5.5%			17.3%	17.2%	3.2%
Mac Revenue	\$7,416	\$7,371	\$7,316			\$5,916	\$5,915	\$5,897
Y/Y Growth	8.7%	8.0%	7.2%			2.4%	2.4%	2.1%
Services Revenue	\$10,875	\$10,801	\$10,788			\$11,426	\$11,212	\$11,194
Y/Y Growth	19.1%	18.3%	18.2%			16.0%	13.8%	13.6%
Total Revenue	\$84,310	\$84,049	\$84,034	\$84B	\$55-59B	\$58,138	\$62,206	\$59,404
Y/Y Growth	-4.5%	-4.8%	-4.8%			-4.9%	1.7%	-2.8%
Gross Margin	38.0%	38.0%	38.1%	38.0%	37.0-38.0%	37.9%	38.1%	38.0%
Op Margin	27.7%	27.6%	27.8%	27.6%*	22.3%*	23.2%	24.5%	24.5%
EPS	\$4.18	\$4.16	\$4.17			\$2.45	\$2.80	\$2.66

Source: FactSet, Company reports, BMO Capital Markets estimates.

Exhibit 3: Full-Year Variance Table

(\$m, except per share)	FY2019E			FY2020E		
	Current BMO	BMO	Prior Consensus	Current BMO	BMO	Prior Consensus
iPhone Revenue	\$139,468	\$150,978	\$145,537	\$133,808	\$153,833	\$145,167
Y/Y Growth	-15.4%	-9.4%	-11.8%	-4.1%	1.9%	-0.3%
iPhone Units	188.0 M	198.0 M	194.0 M	186.0 M	202.0 M	194.0 M
Y/Y Growth	-13.7%	-9.1%	-11.0%	-1.1%	2.0%	0.0%
iPhone ASP	\$742	\$763	\$770	\$719	\$762	\$752
Y/Y Growth	-2.0%	-0.4%	1.9%	-3.0%	-0.1%	-2.3%
iPad Revenue	\$20,868	\$20,365	\$19,215	\$20,504	\$19,982	\$18,453
Y/Y Growth	13.5%	8.3%	-0.9%	-1.7%	-1.9%	-4.0%
Mac Revenue	\$26,164	\$26,368	\$25,944	\$26,816	\$26,593	\$25,720
Y/Y Growth	3.8%	3.5%	3.9%	2.5%	0.9%	-0.9%
Services Revenue	\$45,931	\$45,642	\$45,761	\$53,280	\$54,302	\$53,574
Y/Y Growth	15.6%	22.7%	22.5%	16.0%	19.0%	17.1%
Total Revenue	\$254,811	\$266,102	\$259,583	\$260,511	\$282,684	\$269,849
Y/Y Growth	-4.1%	0.2%	3.9%	2.2%	6.2%	4.0%
Gross Margin	38.0%	38.0%	38.0%	37.9%	38.1%	38.0%
Op Margin	24.3%	25.1%	25.2%	23.6%	25.0%	25.4%
EPS	\$11.40	\$12.35	\$11.99	\$12.22	\$14.18	\$13.34

Source: FactSet, Company reports, BMO Capital Markets estimates.

Exhibit 4: AAPL Income Statement

	FY2018						FY2019E						FY2020E						FY2018							
	Dec-18A		Mar-17A		Jun-17A		Sep-17A		Mar-18A		Jun-18A		Sep-18A		Dec-18A		Mar-19E		Jun-19E		Sep-19E					
	Revenue	\$52,896	\$45,408	\$52,579	\$61,137	\$12,7%	\$15,6%	\$12,2%	\$15,8%	\$62,900	\$53,765	\$19,6%	\$4,5%	\$4,9%	\$2,9%	\$51,722	\$56,138	\$19,6%	\$4,9%	\$4,8%	\$3,6%	\$3,1%	\$2,9%	\$2,2%		
% Change Y/Y	3.3%	4.6%	7.2%	12.7%	15.6%	12.2%	15.8%	12.2%	15.8%	19.6%	19.6%	19.6%	-4.5%	-4.9%	-2.9%	51,722	56,138	19,6%	-4.9%	-4.8%	-3.6%	-1.4%	-1.4%	-4.3%		
% Change Q/Q	67.2%	-32.5%	67.7%	-14.2%	62.1%	-30.8%	-30.8%	-30.8%	-30.8%	18.1%	18.1%	18.1%	-34.0%	-31.0%	-11.0%	17.2%	17.2%	17.2%	-37.1%	-37.1%	-37.1%	-28.0%	-28.0%	-16.7%		
Cost of Sales	\$48,175	\$32,305	\$27,920	\$32,648	\$54,381	\$37,715	\$32,844	\$38,816	\$52,279	\$36,101	\$37,021	\$37,673	\$52,049	\$36,884	\$33,382	\$39,450	\$131,316	\$141,048	\$163,756	\$158,075	\$161,766	\$7.7%	\$6.3%	\$6.3%		
% of Revenue	61.5%	61.1%	61.5%	62.1%	61.6%	61.7%	61.7%	61.7%	61.7%	61.7%	61.7%	61.7%	62.0%	62.1%	62.1%	62.0%	62.0%	62.0%	61.7%	61.7%	61.7%	62.0%	62.0%	62.1%		
Gross Profit	\$30,176	\$20,591	\$17,488	\$19,931	\$33,912	\$23,422	\$20,421	\$24,084	\$30,031	\$24,037	\$19,701	\$22,988	\$31,096	\$23,010	\$20,825	\$23,815	\$84,243	\$88,186	\$101,839	\$96,736	\$98,746	\$38.0%	\$38.0%	\$38.0%		
Gross Margin	38.9%	38.9%	38.5%	39.9%	38.4%	38.3%	38.0%	37.9%	37.9%	37.9%	37.9%	37.9%	37.9%	37.9%	37.9%	37.9%	37.9%									
R&D	\$2,871	\$2,776	\$2,937	\$2,997	\$3,407	\$3,378	\$3,701	\$3,750	\$3,902	\$4,000	\$4,100	\$4,150	\$4,400	\$4,350	\$4,450	\$10,045	\$14,236	\$16,152	\$17,700	\$11,581	\$5.1%	5.4%	5.4%			
% of Revenue	3.7%	5.2%	6.5%	5.7%	5.9%	5.9%	5.9%	6.0%	6.0%	6.4%	6.4%	6.4%	7.9%	8.9%	8.2%	7.1%	7.1%	7.1%	7.1%	7.1%	6.3%	6.3%	6.3%	6.8%		
SG&A	\$3,946	\$3,718	\$3,783	\$3,814	\$4,231	\$4,150	\$4,108	\$4,216	\$4,783	\$4,550	\$4,600	\$4,650	\$4,900	\$4,850	\$4,900	\$5,000	\$14,194	\$15,261	\$16,705	\$18,583	\$19,650	6.7%	6.6%	6.7%	7.5%	
% of Revenue	5.5%	7.0%	8.3%	7.3%	8.4%	8.4%	8.4%	8.4%	8.4%	6.7%	6.7%	6.7%	5.7%	5.7%	5.9%	7.7%	5.9%	5.9%	7.9%	7.9%	7.3%	7.3%	7.3%	7.5%		
Total Operating Expenses	\$6,817	\$6,494	\$6,720	\$6,811	\$7,338	\$7,528	\$7,809	\$7,966	\$8,085	\$8,550	\$8,700	\$8,900	\$9,300	\$9,200	\$9,350	\$9,500	\$24,239	\$26,842	\$30,941	\$37,350	\$37,350	14.3%	13.6%	13.6%	14.3%	
% of Revenue	8.7%	12.3%	14.8%	13.0%	8.7%	12.3%	14.7%	12.7%	14.7%	10.3%	14.7%	14.7%	16.8%	14.7%	11.2%	15.0%	17.2%	17.2%	17.2%	11.2%	11.6%	11.6%	12.3%	12.3%	12.3%	
% Change Seq.	-12.0%	-4.7%	3.5%	1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	3.7%	2.0%	2.0%	9.0%	-1.6%	-1.6%	-1.6%	-1.6%	-1.6%	-1.6%	-1.6%	8.2%	8.2%	8.2%	7.5%	7.5%	7.5%
Operating Income	\$23,359	\$14,097	\$10,768	\$13,120	\$26,274	\$15,894	\$12,612	\$16,118	\$23,346	\$13,487	\$11,001	\$14,188	\$21,796	\$13,810	\$14,175	\$14,315	\$60,024	\$61,344	\$67,886	\$62,001	\$61,396	27.8%	26.8%	26.8%	23.6%	
EBITDA	\$26,346	\$16,429	\$13,122	\$15,804	\$28,019	\$18,533	\$15,277	\$18,374	\$18,872	\$26,100	\$16,226	\$13,740	\$16,907	\$24,555	\$13,810	\$11,475	\$10,539	\$81,801	\$71,501	\$11.501	27.9%	27.9%	27.9%	27.9%	27.9%	
Interest & Other Income (Expense)	\$821	\$887	\$540	\$797	\$756	\$274	\$672	\$303	\$500	\$300	\$300	\$300	2.0%	2.0%	2.0%	1.150										
Pretax Income	\$24,150	\$14,684	\$11,308	\$13,917	\$27,030	\$16,168	\$13,284	\$16,121	\$23,906	\$13,787	\$11,301	\$14,488	\$22,096	\$14,110	\$11,750	\$14,590	\$61,372	\$64,089	\$72,903	\$63,461	\$62,546	2.0%	2.0%	2.0%	2.0%	
Income Tax Expense (Benefit)	6,289	3,655	2,591	3,203	6,965	2,346	1,765	3,941	2,275	1,865	2,387	3,646	2,328	1,939	2,407	15,685	15,738	13,372	10,468	10,320	16.5%	16.5%	16.5%	16.5%		
Tax Rate	26.0%	24.9%	22.9%	23.0%	25.8%	14.5%	13.3%	14.0%	16.5%	16.5%	16.5%	16.5%	16.5%	16.5%	16.5%	25.6%	24.6%	24.6%	18.3%	18.3%	16.5%	16.5%	16.5%	16.5%		
Net Income	\$17,891	\$11,029	\$8,717	\$10,714	\$20,065	\$13,322	\$11,519	\$14,125	\$19,965	\$11,512	\$9,436	\$18,451	\$11,782	\$9,811	\$12,183	\$45,687	\$48,351	\$59,531	\$52,994	\$52,226	2.0%	2.0%	2.0%	2.0%		
EPS (Diluted)	\$3.36	\$2.10	\$1.67	\$2.07	\$3.89	\$2.73	\$2.34	\$2.91	\$4.18	\$2.45	\$2.05	\$2.68	\$4.18	\$2.73	\$2.32	\$2.95	\$8.31	\$9.21	\$11.91	\$11.40	\$12.22	2.0%	2.0%	2.0%	2.0%	
Weighted Average Shares (Diluted)	\$5,328	5,261.7	5,233.5	5,183.6	5,157.8	5,068.5	4,926.6	4,947.5	4,773.3	4,707.8	4,604.0	4,509.6	4,415.2	4,320.8	4,226.4	4,132.0	5,500.3	5,291.7	5,000.1	4,646.7	4,273.6	4,273.6	4,273.6	4,273.6		
Change in Share Count	(65.3)	(66.3)	(28.2)	(49.9)	(25.8)	(89.3)	(141.9)	(74.3)	(65.4)	(65.4)	(65.4)	(65.4)	(65.4)	(65.4)	(65.4)	(65.4)	(251.6)	(251.6)	(251.6)	(251.6)	(251.6)	(251.6)	(251.6)	(251.6)		

Source: Company Reports and BMO Capital Markets estimates.

Exhibit 5: AAPL Product Data

Fiscal Year Ends Sep 30 (USD & Units in millions, except ASP)		FY2017				FY2018				FY2019E				FY2020E					
		Dec-16A	Mar-17A	Jun-17A	Sep-17A	Dec-17A	Mar-18A	Jun-18A	Sep-18A	Dec-18A	Mar-19A	Jun-19A	Sep-19A	Dec-19E	Mar-20E	Jun-20E	Sep-20E		
Revenue	\$78.351	52.896	52.579	45.408	61.137	53.265	62.900	84.310	58.138	51.722	60.641	59.884	83.146	215.639	229.234	265.595	254.811		
iPhone	54.378	33.249	24.846	28.846	61.104	37.559	29.470	36.755	51.982	30.970	25.165	31.361	47.616	30.008	25.003	31.181	260.511		
iPad	5.533	4.831	4.969	4.726	5.755	4.634	3.944	3.733	3.983	6.729	4.700	4.449	6.310	4.992	4.751	4.451	141.319	133.808	
Watch, home and wearables	2,194	1,230	1,156	1,726	5,481	3,944	3,733	4,223	7,308	5,127	4,666	5,279	8,770	5,896	6,305	6,071	19,222	20,504	
Mac	7,244	5,844	5,592	7,170	6,824	5,776	5,258	7,340	7,416	5,916	5,356	7,474	7,835	5,984	5,445	7,553	6,460	22,380	
Pod																	22,831	26,164	
Services	7,172	7,041	7,266	8,501	9,129	9,850	10,170	10,890	11,426	11,563	12,077	12,615	13,254	14,009	24,348	29,980	38,748	45,931	
Other Products	1,830	1,644	1,579	1,505	1,0	0	0	0	0	0	0	0	0	0	6,552	6,558	0	0	
Units																			
iPhone	78.3	50.8	41.0	46.7	77.3	52.2	41.3	46.9	67.0	44.0	36.0	41.0	63.0	44.0	37.0	42.0	211.19	216.8	
iPad	13.1	8.9	11.4	10.3	13.2	9.1	11.6	9.7	15.0	10.0	11.0	10.0	14.0	10.0	10.0	10.0	45.6	43.8	
Watch	5.5	3.0	2.8	4.0	7.5	4.5	4.0	5.5	11.0	6.0	7.0	7.0	12.0	8.0	9.0	11.5	15.3	21.5	
Mac	5.4	4.2	4.3	5.4	5.1	5.1	4.1	3.7	5.3	4.2	5.4	5.4	4.2	3.8	5.4	18.5	19.3	18.2	
Pod															0.0	0.0	0.0	0.0	
ASP																			
iPhone	700	653	599	615	796	719	707	781	780	700	690	760	680	670	740	645	652	757	
iPad	429	437	442	473	446	425	409	459	460	475	450	460	480	450	440	410	444	429	
Watch	410	410	435	450	450	440	450	470	460	460	450	470	450	440	417	447	461	461	
Mac	1,356	1,389	1,300	1,336	1,337	1,409	1,402	1,389	1,431	1,416	1,402	1,388	1,444	1,429	1,415	1,241	1,345	1,410	1,422

Source: Company Reports and BMO Capital Markets estimates.

Exhibit 6: AAPL Balance Sheet

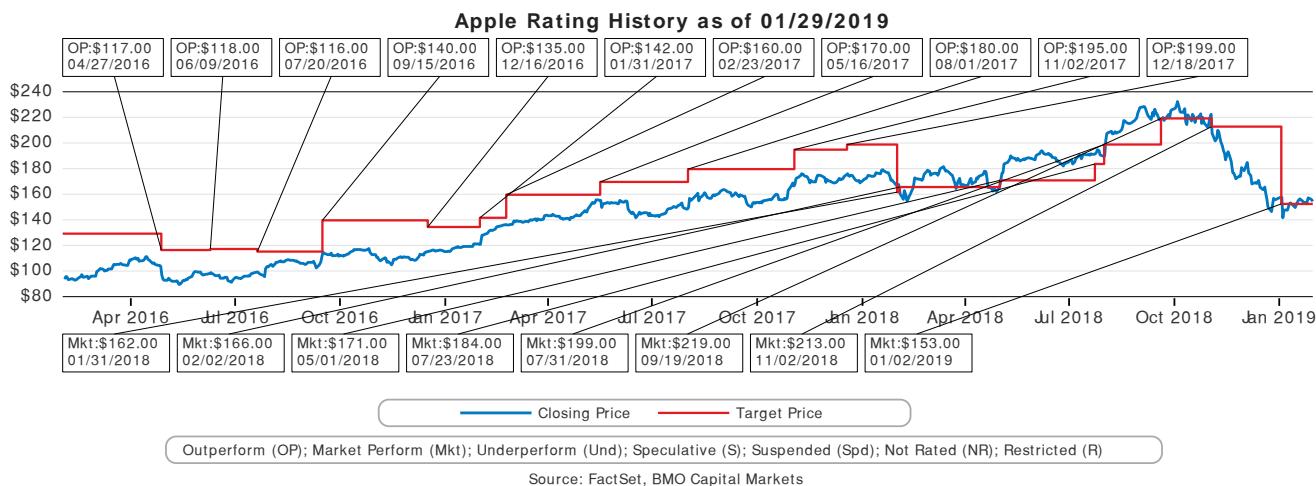
Fiscal Year Ends Sep 30 (USD & Shares in Millions)		FY2016			FY2017			FY2018			FY2019E			FY2020E			FY2020E				
	Dec-15A	Mar-16A	Jun-16A	Sep-16A	Dec-16A	Mar-17A	Jun-17A	Sep-17A	Dec-17A	Mar-18A	Jun-18A	Sep-18A	Dec-18A	Mar-19E	Jun-19E	Sep-19E	Dec-19E	Mar-20E	Jun-20E	Sep-20E	
Assets																					
Cash and equivalents	16,889	21,514	16,237	20,484	16,371	15,157	16,571	20,289	27,491	45,059	31,971	25,913	44,771	64,806	72,213	82,345	109,711	106,534	115,537	127,515	
Short-term marketable securities	21,385	33,769	43,519	46,671	44,081	51,944	58,188	53,892	49,662	42,881	38,999	40,388	41,656	41,656	41,656	41,656	41,656	41,656	41,656	41,656	
Accounts receivable	12,229	11,714	15,754	14,057	11,579	12,399	17,874	23,440	14,324	14,104	23,186	18,077	14,367	18,866	13,958	15,306	15,057	19,632	19,632	19,632	
Inventories	2,451	2,281	1,831	2,132	2,712	2,910	3,146	4,855	4,421	7,662	5,936	4,988	5,014	5,337	5,860	5,205	5,123	5,564	6,137	6,137	
Other current assets	22,741	17,789	18,460	21,828	26,111	20,000	20,571	31,735	38,796	20,127	24,751	37,896	31,326	28,900	30,000	38,000	30,000	37,000	37,000	37,000	
Total current assets	76,219	87,592	93,761	106,869	103,352	107,990	112,875	128,645	143,810	130,053	115,761	131,339	140,828	154,334	163,573	186,618	200,429	207,614	231,930	231,930	
Long-term investments	177,665	177,645	168,764	170,430	185,638	189,740	184,757	194,714	207,944	179,286	172,773	170,739	158,608	138,608	118,608	98,608	78,608	58,608	38,608	18,608	
Property and equipment	22,302	23,203	26,448	27,010	26,510	27,163	5,423	5,473	5,661	5,717	5,689	33,679	35,077	41,304	39,597	41,084	42,571	45,545	47,032	48,519	50,006
Goodwill	5,249	5,261	5,414	5,423	5,423	5,423	5,423	5,423	5,423	5,423	5,423	5,423	5,423	5,423	5,423	5,423	5,423	5,423	5,423	5,423	
Intangible assets	3,943	3,943	3,506	3,206	2,848	2,617	2,444	2,298	2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149	2,149	
Other assets	7,974	7,745	7,862	7,757	7,390	7,549	10,150	10,162	13,323	23,086	22,546	22,283	34,686	34,686	34,686	34,686	34,686	34,686	34,686	34,686	
Total assets	293,284	305,277	305,602	321,886	331,141	341,532	345,173	375,319	406,794	367,502	349,197	365,725	373,719	368,712	359,438	359,079	359,268	356,944	359,427	355,280	
Liabilities																					
Accounts payable	33,312	25,098	26,318	37,294	38,510	28,573	31,915	49,049	62,985	34,311	38,489	55,888	44,233	38,107	40,916	54,417	52,049	38,933	42,655	56,983	
Accrued expenses	24,032	23,208	22,027	23,739	23,304	23,996	26,184	26,281	26,756	25,744	27,440	30,444	36,703	36,903	36,903	37,103	37,103	37,203	37,303	37,403	
Deferred revenue	6,898	9,461	8,352	8,080	7,889	7,682	7,608	7,548	8,044	7,775	7,403	7,543	5,546	8,239	8,476	8,911	9,130	8,885	9,273	9,684	
Commercial paper	7,259	7,988	12,496	10,493	9,992	11,980	11,977	11,980	11,980	11,980	11,980	11,980	11,980	11,980	11,980	11,980	11,980	11,980	11,980	11,980	
Current debt	2,500	2,500	3,500	3,499	3,999	6,495	6,496	6,496	6,496	6,496	8,498	5,496	9,772	9,772	9,772	9,772	9,772	9,772	9,772	9,772	
Total current liabilities	76,092	68,285	71,486	79,006	84,130	75,342	81,302	100,814	115,788	89,320	85,548	116,866	108,283	104,890	108,036	122,072	120,024	106,762	110,972	125,811	
Long-term debt	53,204	69,374	3,322	3,064	2,830	73,567	84,531	89,864	97,207	103,222	97,128	93,735	92,989	92,989	92,989	92,989	92,989	92,989	92,989	92,989	
Deferred revenue	32,175	33,859	35,572	36,074	37,901	36,470	37,901	38,598	40,415	43,754	31,107	31,107	3,087	2,878	45,694	46,855	55,555	57,555	59,555	60,555	
Non-current liabilities	165,017	174,820	179,061	193,437	198,751	200,150	212,748	241,272	266,195	240,624	234,246	258,578	253,134	255,827	257,580	271,568	272,616	271,568	264,516	280,355	
Stockholders' Equity	128,267	130,457	126,541	128,249	132,390	134,082	132,425	134,047	140,199	126,878	114,949	107,147	117,832	115,277	101,858	91,463	87,701	77,638	64,911	54,933	
Total Liabilities and Stockholders' E	293,284	305,277	305,602	321,886	331,141	334,532	345,173	375,319	406,794	367,502	349,197	365,725	373,719	368,712	359,438	364,079	359,268	356,944	359,427	335,290	

Source: Company Reports and BMO Capital Markets estimates.

Exhibit 7: AAPL Cash Flow Statement

Fiscal Year Ends Sep-30 (USD & Shares in millions)	FY2017			FY2018			FY2019E			FY2020E			FY2021E			FY2022E			
	Dec-16A	Mar-17A	Jun-17A	Sep-17A	Dec-17A	Mar-18A	Jun-18A	Sep-18A	Dec-18A	Mar-19A	Jun-19A	Sep-19A	Dec-19A	Mar-20E	Jun-20E	Sep-20E	2020E		
Operating Activities																			
Net income	17,891	11,029	8,717	10,714	20,065	13,822	11,519	14,125	19,965	11,512	9,436	12,081	18,451	11,782	9,811	12,183	45,687	48,351	
Depreciation and amortization	2,987	2,332	2,484	2,745	2,739	2,665	2,754	2,754	2,739	2,739	2,739	2,739	2,739	2,739	2,739	2,739	10,157	10,903	
Share-based compensation expense	1,256	1,217	1,193	1,174	1,296	1,348	1,351	1,345	1,569	1,559	1,559	1,559	1,559	1,559	1,559	1,559	11,612	10,903	
Deferred income tax expense	1,452	1,310	1,942	1,202	33,737	(11)	(488)	1,126	519	153	(54)	(54)	(54)	(54)	(54)	(54)	4,210	4,840	
Other, net	(274)	65	67	(24)	(11)	(140)	(140)	(140)	(140)	(140)	(140)	(140)	(140)	(140)	(140)	(140)	(32,580)	53	
Total cash inflows	5,421	4,984	5,556	4,336	(28,707)	4,953	4,298	4,298	4,298	4,298	17,921	17,921							
Accounts receivable, net	1,897	2,486	(802)	(5,474)	(5,570)	9,093	23,3	(9,078)	5,130	3,219	4,90	(4,499)	5,008	(1,449)	249	(4,625)	1,095	(2,093)	
Inventories	(580)	(1,987)	(1,200)	(236)	(1,709)	434	(3,241)	(1,963)	(1,942)	(1,942)	(1,942)	(1,942)	(1,942)	(1,942)	(1,942)	(1,942)	4,341	(816)	
Vendor non-trade receivables	(375)	(4,887)	(1,200)	(7,566)	(9,660)	19,375	(17,917)	(13,346)	6,905	3,336	(26)	(523)	655	82	(441)	(573)	828	(276)	
Other, non-trade receivables	(1,446)	(550)	(2,333)	(2,089)	(197)	(856)	(98)	(886)	(886)	(886)	(886)	(886)	(886)	(886)	(886)	(886)	241	1,000	
Other current and non-current assets	2,460	9,322	1,650	14,330	14,588	(27,808)	2,081	20,314	(501)	(6,186)	2,810	13,500	(2,367)	(13,116)	3,722	14,328	1,060	(886)	
Accounts payable	42	(2,633)	(197)	(203)	(791)	(313)	(659)	(659)	(659)	(659)	(659)	(659)	(659)	(659)	(659)	(659)	1,623	0	
Deferred revenue	1,946	(1,630)	(2,702)	2,222	37,948	1,639	(2,144)	1,481	570	100	100	100	100	100	100	100	2,995	773	
Other current and non-current liabilities	3,744	(3,490)	106	(3,910)	37,935	(2,141)	814	(1,914)	1,772	3,137	1,313	1,014	11,616	(12,628)	2,018	2,641	484	(5,590)	
Total changes in operating assets and liabilities	27,056	12,523	8,363	15,656	26,293	15,130	14,486	19,523	26,980	16,947	15,047	17,392	34,364	3,452	16,127	77,434	78,076	73,064	
Cash generated by operating activities																			
Investing Activities																			
Purchases of marketable securities	(54,272)	(45,549)	(23,960)	(35,705)	(41,272)	(7,177)	(7,684)	(15,222)	(7,077)	18,926	20,000	20,000	20,000	20,000	20,000	20,000	(142,428)	(159,486)	
Proceeds from marketable securities	38,691	34,192	23,211	30,245	30,849	38,977	17,078	15,815	(1,926)	(1,926)	(1,926)	(1,926)	(1,926)	(1,926)	(1,926)	(1,926)	103,719	76,926	
Purchase of long-term investments	(3,334)	(2,975)	(2,277)	(3,665)	(2,810)	(3,195)	(3,267)	(3,041)	(3,355)	(3,625)	(3,625)	(3,625)	(3,625)	(3,625)	(3,625)	(3,625)	0	0	
Purchase of PPE																	(12,734)	(12,451)	
Proceeds from sales of equity instruments	(86)	(117)	(16)	(135)	(154)	(151)	(126)	(290)	(167)	(167)	(167)	(167)	(167)	(167)	(167)	(167)	(14,230)	(14,230)	
Payments for intangible assets	(121)	(237)	(138)	(482)	(213)	(256)	(2,054)	(2,62)	(483)	(5,844)	16,375	16,375	16,375	16,375	16,375	16,375	16,375	(17,347)	(17,347)
Other	(19,122)	(14,202)	(3,180)	(9,942)	(13,920)	28,710	3,947	(3,001)									(46,446)	(46,446)	
Cash used in investing activities																			
Financing Activities																			
Proceeds from issuance of common stock	-	273	1	281	-	327	1	341	-	300	-	300	-	300	-	300	495	555	
Excess tax benefits from equity awards	(3,130)	(3,004)	(3,365)	(3,270)	(3,339)	(3,190)	(3,339)	(3,653)	(3,530)	(3,188)	(1,077)	(1,077)	(1,077)	(1,077)	(1,077)	(1,077)	(1,077)	(1,077)	
Dividends																	(12,150)	(12,150)	
Repurchase of common stock	(10,851)	(7,161)	(7,093)	(7,785)	(10,095)	(22,756)	(19,104)	(19,104)	(19,104)	(19,104)	(19,104)	(19,104)	(19,104)	(19,104)	(19,104)	(19,104)	(12,150)	(12,150)	
Proceeds from issuance of debt, net	2,385	8,590	7,250	6,937	6,971	(629)	(502)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(28,722)	(32,800)	
Other	(12,047)	465	(1,769)	(3,996)	(7,501)	(28,272)	(31,523)	(13,976)	(13,976)	(13,976)	6	(6,511)	(27)	(27)	(27)	(27)	22,454	25,162	
Cash used in financing activities																	(1,967)	(1,967)	
Cash increase/(decrease)	(4,113)	(1,214)	3,414	1,713	7,202	17,568	(13,088)	(6,058)	(2,913)	(44,771)	7,407	10,132	27,366	(3,177)	8,804	12,775	(633)	(155)	
Cash - Beginning	20,484	16,371	15,157	18,571	20,289	27,491	45,059	31,971	25,913	44,771	64,806	72,213	82,345	109,711	106,534	115,337	20,537	20,537	
Cash - End	16,371	15,157	18,571	20,289	27,491	45,059	31,971	25,913	44,771	64,806	72,213	82,345	109,711	106,534	115,337	20,537	20,537	127,563	

Source: Company Reports and BMO Capital Markets estimates.



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Methodology and Risks to Target Price/Valuation for Apple (AAPL-NSDQ)

Methodology: Our target price of \$153 assumes the stock trades to 12x our CY2020 EPS estimate.

Risks: Risks to our target price include iPhone units and mix, lack of growth from new products like Watch, Pay, and Music, and hits to ASP and operating margins.

Distribution of Ratings (January 29, 2019)

Rating category	BMO rating	BMOCM US Universe*	BMOCM US IB Clients**	BMOCM US IB Clients***	BMOCM Universe****	BMOCM IB Clients*****	StarMine Universe~
Buy	Outperform	47.9 %	24.6 %	67.7 %	50.6 %	65.8 %	57.7%
Hold	Market Perform	49.6 %	11.0 %	31.4 %	47.0 %	33.8 %	37.7%
Sell	Underperform	2.6 %	6.7 %	1.0 %	2.4 %	0.4 %	4.6%

* Reflects rating distribution of all companies covered by BMO Capital Markets Corp. equity research analysts.

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~ As of October 4, 2018.

Ratings Key (as of October 2016)

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Mkt = Market Perform - Forecast to perform roughly in line with the analyst's coverage universe on a total return basis;

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(S) = Speculative investment;

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(April 2013 - October 2016)

http://researchglobal.bmocapitalmarkets.com/documents/2013/rating_key_2013_to_2016.pdf

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Equity Research

January 29, 2019

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TMT

Apple, Inc.

Trimming Apple Estimates and Target

- Lowering Apple (AAPL, Buy, \$189 PT) price target to \$189 from \$197 on new 2019 estimate of \$12.60 (from \$13.12) on lower iPhone revenue, still the primary driver for the company.
- The new reporting and sub 20% growth in services is likely to generate a lot of questions about this segment. Most importantly, how predictable will it be?
- Stock is cheap, but we continue to recommend because we are optimistic that the replacement cycle is almost done lengthening. Plus, their share repurchase was light this quarter, so they have some catching up to do.

AAPL **\$154.68**

12 month target **\$189.00**

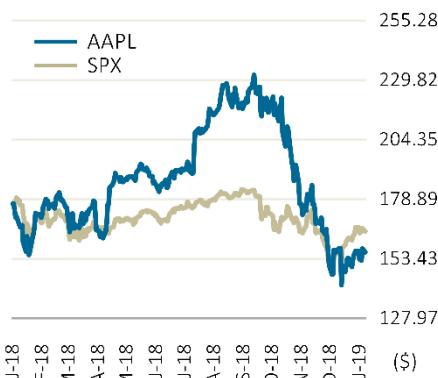
BUY

52 week range **\$142.19 - \$232.07**

Dividend Yield **1.3%**

Market Cap (m) **\$738,327**

Price Performance



Source: IDC

Estimates

	1Q17 A	2Q17 A	3Q17 A	4Q17 A	FY17 A	1Q18 A	2Q18 A	3Q18 A	4Q18 A	FY18 A	FY19 E
Sales	78,351	52,896	45,408	52,579	229,234	88,293	61,137	53,265	62,900	265,595	260,775
Gross Margin (%)	38.5%	38.9%	38.5%	37.9%	38.5%	38.4%	38.3%	38.3%	38.3%	38.3%	37.7%
Diluted EPS (Adj.)	3.36	2.10	1.67	2.07	9.19	3.89	2.73	2.34	2.91	11.87	11.88
DPS	0.57	0.57	0.63	0.63	2.40	0.63	0.63	0.73	0.73	2.72	3.02
EPS Growth (%)	2.3%	10.4%	16.9%	23.7%	11.0%	15.9%	30.1%	40.4%	41.0%	29.2%	0.1%

Source: BTIG Estimates and Company Documents (\$ in millions, except per share amount)

Company reports and BTIG estimates

There are fewer and new moving parts under Apple's new reporting structure, but as always iPhone revenue is the primary driver of results.

Our estimate and the consensus for FQ2 revenue were slightly above the top end of Apple's guidance, which likely provided some relief to investors. However, that outlook necessitates revisions to our model. We cut nearly \$6 billion out of our iPhone revenue estimate for this calendar year, which reduced our calendar 2019 EPS estimate by \$0.52 to \$12.60. It's too early to introduce 2020 estimates, so we will stick with a target based on 15.0x our new EPS estimate, which yields a \$189 price target, down from our prior target of \$197. The good news is that the lower revenue guidance, likely in part driven by price cuts in certain markets, did not result in weak gross margin guidance, another relief to investors fearing the worst.

The sub 20% growth in services is undoubtedly going to generate a good amount of dialogue among investors attempting to put its numerous pieces together. The company cited a number of reasons that contributed to the deceleration, but ultimately investors are going to want to understand how this segment can accelerate growth going forward given what is a fairly wide variety of possible drivers. The higher valuations assigned to recurring revenue services businesses are, in large part, a result of their predictability. However, the variety of elements within Apple's services segment and its relatively low penetration of subscriptions among the installed base do not provide us that level of confidence yet.

iPads seem like a great story for this quarter, posting more than 15% revenue growth for the first time since the March of 2013 quarter. However, without unit or ASP data, and given the weak overall revenue guidance, it's difficult to predict an outlook for this segment. The newest iPads are great products. Apple claims 50% of purchases are first time iPad purchases. Even Verizon (VZ, Neutral) showed an uptick in tablet sales this quarter. Yet we hesitate to build too much optimism in this segment, which has underperformed for years.

The fall-off in Greater China (down 27% this quarter) is going to take several quarters to digest. However, the stock is trading at a 20% discount to the S&P 500 on a P/E basis and perhaps more appropriately at a 7.3% free cash flow yield. However, the reason we continue to recommend this stock is our belief that we are close to seeing the end of the four-year lengthening of the replacement cycle. This topic has taken center stage ever since Apple reported. Verizon even reported a new record low in its upgrade rate earlier today. But investors need to look forward to 2019, a year when we believe those upgrade rates could be troughing.

Share repurchase was lower than expected in the quarter at \$8.8 billion vs. our \$19.0 billion estimate. We expect it to pick up throughout the remaining quarters of Fiscal 2019 as the company takes advantage of a stock that has pulled back 31% since the end of the September quarter. The company had \$130 billion of net cash at the end of December and is still planning to get to cash neutral over time. The company plans an update on its capital return program when it reports the March quarter. It's possible the need to pre-announce results complicated their share repurchase activity last quarter.

Tables that detail our estimate revisions are below.

Estimate Revisions – Income Statement

Apple Income Statement \$ millions	OLD		NEW		Diff		OLD		NEW		Diff		OLD		NEW		Diff		
	Mar-19	Mar-19	FY 2019	FY 2019			CY2019	CY2019					CY2019	CY2019					
Revenues	59,531	58,275	(1,256)		265,480	260,775	(4,704)		271,831	266,145	(5,687)								
Products	48,044	46,455	(1,589)		219,325	213,441	(5,884)		223,246	216,635	(6,611)								
Services	11,488	11,820	333		46,155	47,335	1,180		48,585	49,510	925								
Cost of goods sold	37,207	36,422	(785)		165,505	162,570	(2,935)		169,895	166,341	(3,554)								
Products	32,038	32,048	11		144,736	145,039	303		148,031	148,022	(9)								
Services	5,169	4,373	(796)		20,770	17,531	(3,239)		21,863	18,319	(3,545)								
Gross profit	22,324	21,853	(471)		99,975	98,206	(1,769)		101,937	99,804	(2,132)								
Products	16,006	14,406	(1,600)		74,589	68,402	(6,187)		75,215	68,613	(6,602)								
Services	6,318	7,447	1,128		25,385	29,804	4,418		26,722	31,191	4,469								
R&D	4,000	4,000	0		16,500	16,402	(98)		16,983	16,830	(153)								
SG&A	4,500	4,500	0		18,200	18,283	83		18,511	18,543	32								
Operating Income	13,824	13,353	(471)		65,275	63,521	(1,754)		66,443	64,432	(2,011)								
Other inc and exp	350	300	(50)		1,600	1,610	10		1,500	1,650	150								
NIBT	14,174	13,653	(521)		66,875	65,131	(1,744)		67,943	66,082	(1,861)								
Taxes	2,126	2,321	195		10,387	10,811	424		10,191	10,972	780								
Net Income	12,048	11,332	(716)		56,487	54,319	(2,168)		57,751	55,110	(2,642)								
EPS	\$2.61	\$2.46	(\$0.15)		\$12.34	\$11.88	(\$0.46)		\$13.12	\$12.60	(\$0.52)								
Shares out	4,623	4,614	(9)		4,563	4,548	(15)		4,402	4,373	(29)								
Dividends per share	\$0.73	\$0.73	\$0.00		\$3.02	\$3.02	\$0.00		\$3.07	\$3.07	\$0.00								
Dividends	3,375	3,368	(7)		13,767	13,720	(46)		13,618	13,536	(82)								
Margins																			
GPM	37.5%	37.5%	0.0%		37.7%	37.7%	0.0%		37.5%	37.5%	0.0%								
Products	33.3%	31.0%	-2.3%		34.0%	32.0%	-2.0%		33.7%	31.7%	-2.0%								
Services	55.0%	63.0%	8.0%		55.0%	63.0%	8.0%		55.0%	63.0%	8.0%								
R&D/Revenue	6.7%	6.9%	0.1%		6.2%	6.3%	0.1%		6.2%	6.3%	0.1%								
SG&A/Revenue	7.6%	7.7%	0.2%		6.9%	7.0%	0.2%		6.8%	7.0%	0.2%								
Operating Inc	23.2%	22.9%	-0.3%		24.6%	24.4%	-0.2%		24.4%	24.2%	-0.2%								
NIBT	23.8%	23.4%	-0.4%		25.2%	25.0%	-0.2%		25.0%	24.8%	-0.2%								
Tax rate	15.0%	17.0%	2.0%		15.5%	16.6%	1.1%		15.0%	16.6%	1.6%								
Net Income	20.2%	19.4%	-0.8%		21.3%	20.8%	-0.4%		21.2%	20.7%	-0.5%								
Annual growth																			
Revenues	-2.6%	-4.7%	-2.1%		0.0%	-1.8%	-1.8%		4.1%	1.7%	-2.3%								
Operating Income	-13.0%	-16.0%	-3.0%		-7.9%	-10.4%	-2.5%		-2.0%	-5.2%	-3.2%								
NIBT	-12.3%	-15.6%	-3.2%		-8.3%	-10.7%	-2.4%		-2.4%	-5.3%	-2.9%								
Net Income	-12.8%	-18.0%	-5.2%		-5.1%	-8.8%	-3.6%		-2.6%	-7.3%	-4.7%								
EPS	-4.4%	-9.9%	-5.5%		3.9%	0.1%	-3.9%		8.0%	3.6%	-4.4%								
Dividends	15.9%	15.9%	0.0%		11.0%	11.0%	0.0%		8.9%	8.9%	0.0%								
Net cash per share	\$22.69	\$24.99	\$2.31		\$20.53	\$21.67	\$1.14		\$24.30	\$21.39	(\$2.91)								
Net cash	(104,889)	(115,324)	(10,435)		(89,822)	(94,121)	(4,299)		(103,484)	(90,489)	12,995								

Source: Company reports; BTIG

Estimate Revisions – Revenues

Apple Revenue Analysis \$ millions	OLD		Diff	OLD		Diff	OLD		Diff
	Mar-19	Mar-19		FY 2019	FY 2019		CY2019	CY2019	
Revenue by Product									
iPhone	59,531	58,275	(1,256)	265,480	260,775	(4,704)	271,831	266,145	(5,687)
iPad	31,883	30,447	(1,436)	146,835	141,485	(5,351)	149,665	143,777	(5,888)
Mac	4,511	4,437	(74)	21,566	20,968	(598)	21,699	20,808	(891)
Services	6,399	6,321	(79)	27,924	27,680	(244)	27,883	28,051	168
Wearables/Home/Accessories	11,488	11,820	333	46,155	47,335	1,180	48,585	49,510	925
	5,250	5,250	0	23,000	23,308	308	24,000	24,000	0
Annual Revenue Growth									
iPhone	-2.6%	-4.7%	-2.1%	0.0%	-1.8%	-1.8%	4.1%	1.7%	-2.3%
iPad	-16.2%	-18.9%	-2.8%	-11.9%	-14.2%	-2.3%	-4.8%	-7.7%	-2.9%
Mac	9.7%	10.7%	1.0%	14.7%	14.1%	-0.6%	11.0%	7.5%	-3.5%
Services	9.4%	9.4%	0.0%	9.6%	9.8%	0.3%	7.2%	8.8%	1.6%
Wearables/Home/Accessories	25.0%	20.0%	-5.0%	24.1%	19.1%	-5.0%	22.9%	19.3%	-3.6%
	32.8%	33.1%	0.3%	32.1%	34.1%	2.0%	26.8%	24.9%	-1.8%
Revenue Mix									
iPhone	53.6%	52.2%	-1.3%	55.3%	54.3%	-1.1%	55.1%	54.0%	-1.0%
iPad	7.6%	7.6%	0.0%	8.1%	8.0%	-0.1%	8.0%	7.8%	-0.2%
Mac	10.7%	10.8%	0.1%	10.5%	10.6%	0.1%	10.3%	10.5%	0.3%
Services	19.3%	20.3%	1.0%	17.4%	18.2%	0.8%	17.9%	18.6%	0.7%
Wearables/Home/Accessories	8.8%	9.0%	0.0%	8.7%	8.9%	0.0%	8.8%	9.0%	0.0%
Units									
iPhone	42,500	41,500	(1,000)	186,000	182,000	(4,000)	187,500	183,500	(4,000)
iPad	9,341	9,341	0	44,623	44,953	329	44,623	44,953	329
Mac	4,250	4,250	0	18,990	18,990	0	18,859	18,990	131
Annual Unit Growth									
iPhone	-18.6%	-20.5%	-1.9%	-14.6%	-16.4%	-1.8%	-8.0%	-10.0%	-2.0%
iPad	2.5%	2.5%	0.0%	2.5%	3.3%	0.8%	1.7%	1.7%	0.0%
Mac	2.5%	2.5%	0.0%	4.3%	4.3%	0.0%	2.8%	3.6%	0.7%
Average Sales Prices									
iPhone	750	734	(17)	789	777	(12)	798	784	(15)
iPad	483	475	(8)	483	466	(17)	486	463	(23)
Mac	1,506	1,487	(19)	1,470	1,458	(13)	1,479	1,477	(1)
Annual ASP Growth									
iPhone	3.0%	2.0%	-1.0%	3.1%	2.6%	-0.5%	3.5%	2.6%	-1.0%
iPad	7.0%	8.0%	1.0%	11.9%	10.5%	-1.4%	9.1%	5.7%	-3.4%
Mac	5.0%	5.0%	0.0%	5.1%	5.3%	0.3%	4.2%	5.0%	0.8%

Source: Company reports; BTIG

Income Statement

Apple Income Statement												Est				Est			
\$ millions	2016	2017	Dec	Mar	Jun	Sep	2018	Dec	Mar	Jun	Sep	2019	Dec	CY 2016	CY 2017	CY 2018	CY 2019		
Revenues	215,639	229,234	88,293	61,137	53,265	62,900	265,595	84,310	58,275	54,031	64,159	260,775	89,679	218,118	239,176	261,612	266,145		
Products			79,164	51,287	43,095	52,301	225,847	73,435	46,455	42,110	51,440	213,441	76,629	79,164	220,118	216,635			
Services			9,129	9,850	10,170	10,599	39,748	10,875	11,820	11,921	12,719	47,335	13,050	9,129	41,494	49,510			
Cost of goods sold	131,376	141,048	54,381	37,715	32,844	38,816	163,756	52,279	36,422	33,769	40,100	162,570	56,050	134,102	147,254	161,654	166,341		
Products			50,575	33,707	28,807	34,697	147,787	48,238	32,048	29,359	35,394	145,039	51,221	50,575	145,450	148,022			
Services			3,806	4,008	4,037	4,119	15,969	4,041	4,373	4,411	4,706	17,531	4,829	3,806	16,204	18,319			
Gross profit	84,263	88,186	33,912	23,422	20,421	24,084	101,839	32,031	21,853	20,262	24,060	98,206	33,630	84,016	91,922	99,958	99,804		
Products			28,589	17,580	14,288	17,604	78,060	25,197	14,406	12,752	16,047	68,402	25,408	0	28,589	74,668	68,613		
Services			5,323	5,842	6,133	6,480	23,779	6,834	7,447	7,510	8,013	29,804	8,222	0	5,323	25,290	31,191		
R&D	10,045	11,581	3,407	3,378	3,701	3,750	14,236	3,902	4,000	4,250	4,250	16,402	4,330	10,512	12,117	14,731	16,830		
SG&A	14,194	15,261	4,231	4,150	4,108	4,216	16,705	4,783	4,500	4,500	4,500	18,283	5,043	14,292	15,546	17,257	18,543		
Operating Income	60,024	61,344	26,274	15,894	12,612	16,118	70,898	23,346	13,353	11,512	15,310	63,521	24,257	59,212	64,259	67,970	64,432		
Other inc and exp	1,348	2,745	756	274	672	303	2,005	560	300	350	400	1,610	600	1,767	2,680	1,809	1,650		
NIBT	61,372	64,089	27,030	16,168	13,284	16,421	72,903	23,906	13,653	11,862	15,710	65,131	24,857	60,979	66,939	69,779	66,082		
Taxes	15,685	15,738	6,965	2,346	1,765	2,296	13,372	3,941	2,321	1,957	2,592	10,811	4,101	15,762	16,414	10,348	10,972		
Net Income	45,687	48,351	20,065	13,822	11,519	14,125	59,531	19,965	11,332	9,905	13,118	54,319	20,756	45,217	50,525	59,431	55,110		
EPS	\$8.28	\$9.19	\$3.89	\$2.73	\$2.34	\$2.91	\$11.87	\$4.18	\$2.46	\$2.22	\$3.02	\$11.88	\$4.91	\$8.35	\$9.72	\$12.16	\$12.60		
Shares out	5,500	5,252	5,158	5,068	4,927	4,848	5,000	4,773	4,614	4,461	4,344	4,548	4,231	5,414	5,199	4,887	4,373		
Dividends per share	\$2.18	\$2.40	\$0.63	\$0.63	\$0.73	\$0.73	\$2.72	\$0.73	\$0.73	\$0.78	\$0.78	\$3.02	\$0.78	\$2.23	\$2.46	\$2.82	\$3.07		
Dividends	11,984	12,599	3,249	3,193	3,596	3,539	13,578	3,484	3,368	3,479	3,388	13,720	3,300	12,112	12,811	13,813	13,536		
Margins														38.5%	38.4%	38.2%	37.5%		
GPM	39.1%	38.5%	38.4%	38.3%	38.3%	38.3%	38.3%	38.0%	37.5%	37.5%	37.5%	37.7%	37.5%	38.5%	38.4%	38.2%	37.5%		
Products			36.1%	34.3%	33.2%	33.7%	34.6%	34.3%	31.0%	30.3%	31.2%	32.0%	33.2%	36.1%	33.9%	31.7%			
Services			58.3%	59.3%	60.3%	61.1%	59.8%	62.8%	63.0%	63.0%	63.0%	63.0%	63.0%	58.3%	60.9%	63.0%			
R&D/Revenue	4.7%	5.1%	3.9%	5.5%	6.9%	6.0%	5.4%	4.6%	6.9%	7.9%	6.6%	6.3%	4.8%	4.8%	5.1%	5.6%	6.3%		
SG&A/Revenue	6.6%	6.7%	4.8%	6.8%	7.7%	6.7%	6.3%	5.7%	7.7%	8.3%	7.0%	7.0%	5.6%	6.6%	6.5%	6.6%	7.0%		
Operating Inc	27.8%	26.8%	29.8%	26.0%	23.7%	25.6%	26.7%	27.7%	22.9%	21.3%	23.9%	24.4%	27.0%	27.1%	26.9%	26.0%	24.2%		
NIBT	28.5%	28.0%	30.6%	26.4%	24.9%	26.1%	27.4%	28.4%	23.4%	22.0%	24.5%	25.0%	27.7%	28.0%	28.0%	26.7%	24.8%		
Tax rate	25.6%	24.6%	25.8%	14.5%	13.3%	14.0%	18.3%	16.5%	17.0%	16.5%	16.5%	16.6%	16.5%	25.8%	24.5%	14.8%	16.6%		
Net Income	21.2%	21.1%	22.7%	22.6%	21.6%	22.5%	22.4%	23.7%	19.4%	18.3%	20.4%	20.8%	23.1%	20.7%	21.1%	22.7%	20.7%		
Annual growth																			
Revenues	-7.7%	6.3%	12.7%	15.6%	16.8%	21.1%	15.9%	-4.5%	-4.7%	1.4%	2.0%	-1.8%	6.4%	-7.2%	9.7%	9.4%	1.7%		
Operating Income	-15.7%	2.2%	12.5%	12.7%	17.1%	22.9%	15.6%	-11.1%	-16.0%	-8.7%	-5.0%	-10.4%	3.9%	-16.8%	8.5%	5.8%	-5.2%		
NIBT	-15.4%	4.4%	11.8%	10.1%	17.5%	18.0%	13.8%	-11.6%	-15.6%	-10.7%	-4.3%	-10.7%	4.0%	-16.1%	9.8%	4.2%	-5.3%		
Net Income	-14.4%	5.8%	12.2%	25.3%	32.1%	31.8%	23.1%	-0.5%	-18.0%	-14.0%	-7.1%	-8.8%	4.0%	-15.8%	11.7%	17.6%	-7.3%		
EPS	-10.0%	11.0%	15.9%	30.1%	40.4%	41.0%	29.2%	7.5%	-9.9%	-5.0%	3.6%	0.1%	17.3%	-11.3%	16.4%	25.1%	3.6%		
Dividends	10.1%	10.1%	10.5%	10.5%	15.9%	13.3%	15.9%	15.9%	6.8%	6.8%	11.0%	6.8%	9.9%	10.3%	14.6%	8.9%			
Net cash per share	\$27.91	\$29.56	\$31.54	\$28.68	\$26.21	\$25.29	\$25.29	\$27.30	\$24.99	\$21.84	\$21.67	\$21.67	\$21.39	\$29.76	\$31.54	\$27.30	\$21.39		
Net cash	(150,553)	(153,215)	(162,697)	(145,386)	(129,143)	(122,617)	(122,617)	(130,305)	(115,324)	(97,409)	(94,121)	(94,121)	(90,489)	(158,541)	(162,697)	(130,305)	(90,489)		
FCF	50,888	50,408	25,235	11,183	9,743	16,442	62,603	22,908	13,262	11,691	20,069	67,930	21,036	51,067	52,007	60,276	66,058		
Annual growth	-27%	-1%	7%	18%	65%	45%	24%	-9%	19%	20%	22%	9%	-8%	-19%	2%	16%	10%		
% of revenue	24%	22%	29%	18%	18%	26%	24%	27%	23%	22%	31%	26%	23%	23%	22%	23%	25%		
Per share	\$9.22	\$9.56	\$4.89	\$2.21	\$1.98	\$3.39	\$12.47	\$4.80	\$2.87	\$2.62	\$4.62	\$14.91	\$4.97	\$9.46	\$10.02	\$12.38	\$15.09		

Source: Company reports; BTIG

Revenues

Apple Revenue Analysis													Est				Est			
\$ millions	2016	2017	iPhone X-->				iPhone XS/XS Max-->				Dec-18	Mar-19	Jun-19	Sep-19	2019	Dec-19	CY 2016	CY 2017	CY 2018	CY 2019
Reclassified Amortization to Services from Product Lines-->																				
Revenue by Product	215,639	229,234	88,293	61,137	53,265	62,900	265,595	84,310	58,275	54,031	64,159	260,775	89,679	218,118	239,176	261,612	266,145			
iPhone	136,700	141,319	61,104	37,559	29,470	36,755	164,888	51,982	30,447	25,474	33,581	141,485	54,274	139,443	148,045	155,766	143,777			
iPad	20,628	19,222	5,755	4,008	4,634	3,983	18,380	6,729	4,437	5,329	4,474	20,968	6,569	19,077	19,444	19,354	20,808			
Mac	22,831	25,850	6,824	5,776	5,258	7,340	25,198	7,416	6,321	6,307	7,636	27,680	7,787	23,329	25,430	25,790	28,051			
Services	24,348	29,980	9,129	9,850	10,170	10,599	39,748	10,875	11,620	11,921	12,719	47,335	13,050	25,464	31,937	41,494	49,510			
Wearables/Home/Accessories	11,132	12,863	5,481	3,944	3,733	4,223	17,381	7,308	5,250	5,000	5,750	23,308	8,000	10,805	14,320	19,208	24,000			
Annual Revenue Growth	-7.7%	6.3%	12.7%	15.6%	16.8%	21.1%	15.9%	-4.5%	-4.7%	1.4%	2.0%	-1.8%	6.4%	-7.2%	9.7%	9.4%	1.7%			
iPhone	-11.8%	3.4%	12.4%	13.0%	18.6%	27.4%	16.7%	-14.9%	-18.9%	-13.6%	-8.6%	-14.2%	4.4%	-10.3%	6.2%	5.2%	-7.7%			
iPad	-11.2%	-6.8%	4.0%	3.1%	-6.7%	-17.6%	-4.4%	16.9%	10.7%	15.0%	12.3%	14.1%	-2.4%	-10.5%	1.9%	-0.5%	7.5%			
Mac	-10.4%	13.2%	-5.8%	-1.2%	-6.0%	2.4%	-2.5%	8.7%	9.4%	20.0%	4.0%	9.8%	5.0%	-7.7%	9.0%	1.4%	8.8%			
Services	22.3%	23.1%	27.3%	39.9%	36.7%	34.8%	32.6%	19.1%	20.0%	20.0%	19.0%	19.1%	20.0%	20.3%	25.4%	29.9%	19.3%			
Wearables/Home/Accessories	10.6%	15.5%	36.2%	37.3%	36.5%	30.7%	35.1%	33.3%	33.1%	33.9%	36.2%	34.1%	9.5%	-7.9%	32.5%	34.1%	24.9%			
Sequential Revenue Growth			67.9%	-30.8%	-12.9%	18.1%		34.0%	-30.9%	-7.3%	18.7%		39.8%							
iPhone			111.8%	-38.5%	-21.5%	24.7%		41.4%	-41.4%	-16.3%	31.8%		61.6%							
iPad			19.1%	-30.4%	15.6%	-14.0%		68.9%	-34.1%	20.1%	-16.0%		46.8%							
Mac			-4.8%	-15.4%	-9.0%	39.6%		1.0%	-14.8%	-0.2%	21.1%		2.0%							
Services			16.1%	7.9%	3.2%	6.7%		2.6%	8.7%	0.9%	6.7%		2.6%							
Wearables/Home/Accessories			69.6%	-28.0%	-5.3%	13.1%		73.1%	-28.2%	-4.8%	15.0%		39.1%							
Revenue Mix																				
iPhone	63.4%	61.6%	69.2%	61.4%	55.3%	58.4%	62.1%	61.7%	52.2%	47.1%	52.3%	54.3%	60.5%	63.9%	61.9%	59.5%	54.0%			
iPad	9.6%	8.4%	6.5%	6.6%	8.7%	6.3%	6.9%	8.0%	7.6%	9.9%	7.0%	8.0%	7.3%	8.7%	8.1%	7.4%	7.8%			
Mac	10.6%	11.3%	7.7%	9.4%	9.9%	11.7%	9.5%	8.8%	10.8%	11.7%	11.9%	10.6%	8.7%	10.7%	10.6%	9.9%	10.5%			
Services	11.3%	13.1%	10.3%	16.1%	19.1%	16.9%	15.0%	12.9%	20.3%	22.1%	19.8%	18.2%	14.6%	11.7%	13.4%	15.9%	18.6%			
Wearables/Home/Accessories	5.2%	5.6%	6.2%	6.5%	7.0%	6.7%	6.5%	8.7%	9.0%	9.3%	9.0%	8.9%	8.9%	5.0%	6.0%	7.3%	9.0%			
Units																				
iPhone	211,884	216,756	77,316	52,217	41,300	46,889	217,722	63,500	41,500	35,000	42,000	182,000	65,000	215,395	215,782	203,906	183,500			
iPad	45,590	43,753	13,170	9,113	11,553	9,699	43,535	13,829	9,341	11,842	9,941	44,953	13,829	42,549	43,842	44,194	44,953			
Mac	18,484	19,251	5,112	4,078	3,720	5,299	18,209	5,240	4,250	5,250	18,990	5,240		18,546	18,989	18,337	18,990			
Annual Unit Growth																				
iPhone	-8.4%	2.3%	-1.2%	2.9%	0.7%	0.5%	0.4%	-17.9%	-20.5%	-15.3%	-10.4%	-16.4%	2.4%	-7.0%	0.2%	-5.5%	-10.0%			
iPad	-16.9%	-4.0%	0.7%	2.1%	1.1%	-6.1%	-0.5%	5.0%	2.5%	2.5%	2.5%	3.3%	0.0%	-14.1%	3.0%	0.8%	1.7%			
Mac	-10.2%	4.1%	-4.9%	-2.9%	-13.3%	-1.6%	-5.4%	2.5%	2.5%	0.0%	0.0%	4.3%	0.0%	-9.0%	2.4%	-3.4%	3.6%			
Sequential Unit Growth																				
iPhone			65.6%	-32.5%	-20.9%	13.5%		35.4%	-34.6%	-15.7%	20.0%		54.8%							
iPad			27.5%	-30.8%	26.8%	-16.0%		42.6%	-32.5%	26.8%	-16.0%		39.1%							
Mac			-5.1%	-20.2%	-8.8%	42.4%		-1.1%	-18.9%	0.0%	23.5%		-0.2%							
Average Sales Prices																				
iPhone	645	652	790	719	714	784	757	819	734	728	800	777	835	647	686	764	784			
iPad	452	439	437	440	401	411	422	487	475	450	450	466	475	448	444	438	463			
Mac	1,235	1,343	1,335	1,416	1,413	1,385	1,384	1,415	1,487	1,484	1,454	1,458	1,486	1,258	1,339	1,406	1,477			
Annual ASP Growth																				
iPhone	-3.8%	1.1%	13.8%	9.8%	17.8%	26.8%	16.2%	3.6%	2.0%	2.0%	2.0%	2.6%	2.0%	-3.6%	6.0%	11.3%	2.6%			
iPad	6.9%	-2.9%	3.3%	0.9%	-7.8%	-12.2%	-3.9%	11.4%	8.0%	12.2%	9.6%	10.5%	2.0%	4.2%	-1.1%	-1.3%	5.7%			
Mac	-0.2%	8.7%	-1.0%	1.8%	8.5%	4.1%	3.1%	6.0%	5.0%	5.0%	5.0%	5.3%	5.0%	1.4%	6.5%	5.0%	5.0%			
Sequential ASP Growth																				
iPhone			27.9%	-9.0%	-0.8%	9.9%		4.4%	-10.4%	-0.8%	9.9%		4.4%							
iPad			-6.6%	0.6%	-8.8%	2.4%		18.5%	-2.4%	-5.3%	0.0%		5.6%							
Mac			0.3%	6.1%	-0.2%	-2.0%		2.2%	5.1%	-0.2%	-2.0%		2.2%							

Source: Company reports; BTIG

BTIG Covered Companies Mentioned in this Report

APPLE, INC. (AAPL, Buy, \$189.00 PT; Current Price: \$154.68; Analyst: Walter.Piecyk)

VERIZON COMMUNICATIONS, INC. (VZ, Neutral, \$N/A PT; Current Price: \$53.28; Analyst: Walter.Piecyk)

Appendix: Analyst Certification and Other Important Disclosures

Analyst Certification

I, Walter Piecyk, hereby certify that the views about the companies and securities discussed in this report are accurately expressed and that I have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report.

I, Joseph Galone, hereby certify that the views about the companies and securities discussed in this report are accurately expressed and that I have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report.

Regulatory Disclosures

Ratings Definitions

BTIG LLC's ("BTIG") ratings, effective June 12, 2017, are defined as follows:

BUY – A security which is expected to produce a positive total return of 15% or greater over the 12 months following the recommendation. The BUY rating may be maintained as long as it is deemed appropriate, notwithstanding price fluctuations that would cause the target to fall outside of the 15% return.

SELL – A security which is expected to produce a negative total return of 15% or greater over the next 12 months following the recommendation. The SELL rating may be maintained as long as it is deemed appropriate, notwithstanding price fluctuations that would cause the target to fall outside of the 15% return.

NEUTRAL – A security which is not expected to appreciate or depreciate meaningfully over the next 12 months.

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BTIG must disclose in each research report the percentage of all securities rated by the member to which the member would assign a "buy", "neutral" or "sell" rating. The said ratings are updated on a quarterly basis. BTIG must also disclose the percentage of subject companies within each of these three categories for whom the member has provided investment banking services within the previous twelve months. **Stocks under coverage as of the end of the most recent calendar quarter (December 31, 2018): 331**

Distribution of BTIG's Research Recommendations (as of December 31, 2018):

BUY: 59.8%; NEUTRAL: 38.1%; SELL: 2.1%

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BUY: 27.3%; NEUTRAL: 11.1%; SELL: 0.0%

For purposes of FINRA ratings distribution rules, BTIG's stock ratings of Buy, Neutral and Sell fall into Buy, Hold and Sell categories, respectively.

Company Valuation and Risk Disclosures

Apple, Inc. (AAPL, Buy, \$189.00 PT)

Valuation: Our \$189 price target is based on 15.0x our CY 2019 EPS estimate of \$12.60, which reflects 4% growth in that year. Our price target implies a free cash flow yield of 7.3% and 8.6% if you reduced the market cap by \$130 billion of net cash.

Risks: Apple competes against a number of traditional and start-up wireless device manufacturers who are constantly bringing new products to market that could potentially take share from the company. These competitors could also be more willing to cut prices and have promotional offers in the market.



Note: Closing Price and Target Price have been adjusted for corporate actions.

Date	Closing Price (\$)	Target Price (\$)	Analyst	Rating
14-Mar-13	61.79	77.14	Walter Piecyk	Buy
06-Feb-14	73.22	78.86	Walter Piecyk	Buy
24-Apr-14	81.11	85.71	Walter Piecyk	Buy
01-Jul-14	93.52	112	Walter Piecyk	Buy
21-Oct-14	102.47	128	Walter Piecyk	Buy
18-Nov-14	115.47	135	Walter Piecyk	Buy
28-Jan-15	115.31	150	Walter Piecyk	Buy
28-Apr-15	130.56	160	Walter Piecyk	Buy
26-Jan-16	99.99	141	Walter Piecyk	Buy
26-Apr-16	104.35	115	Walter Piecyk	Buy
26-Jul-16	96.67	124	Walter Piecyk	Buy
15-Sep-16	115.57	133	Walter Piecyk	Buy
01-Mar-17	139.79	165	Walter Piecyk	Buy
02-May-17	147.51	184	Walter Piecyk	Buy
02-Nov-17	168.11	198	Walter Piecyk	Buy
01-May-18	169.10	207	Walter Piecyk	Buy
31-Jul-18	190.29	235	Walter Piecyk	Buy
02-Jan-19	157.92	197	Walter Piecyk	Buy

Note: Apple completed a 7-for-1 stock split after the close on June 6, 2014.

Verizon Communications, Inc. (VZ, Neutral)

Valuation: We value companies based on a variety of valuation techniques including Revenue multiples, Enterprise Value to EBITDA multiples, Price to Earnings, Free Cash Flow multiples, and Sum-of-the-Parts. In the case of Verizon, current multiples do not indicate that the company will trade outside of +/- 15% from current levels over the next 12 months. Note that BTIG does not assign specific price targets to Neutral-rated stocks.

Risks: The risks to our Neutral rating is that Verizon is able to increase pricing on customers that are not willing to leave them because of the greater coverage of their wireless networks, thereby driving EBITDA, free cash flow and EPS higher than our estimate. Verizon could also make a large acquisition in order to pivot to a strategy that offers growth or supports their customers' wireless data growth that would increase the concern by their investors about the company's longer-term ability to fund the dividend.

Verizon Communications, Inc. (VZ)



Note: Closing Price and Target Price have been adjusted for corporate actions.

Date	Closing Price (\$)	Target Price (\$)	Analyst	Rating
01-Jul-14	49.37	60	Walter Piecyk	Buy
15-Dec-15	45.55	NA	Walter Piecyk	Neutral

Other Disclosures

Additional Information Available Upon Request

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Apple Inc. (AAPL)

Services Margin is Strong, but Not Enough to Offset Eroding Hardware Margin

Key Takeaway

Services gross margin of 63% was strong, in-line with our expectation for ~64%. But for now this is not enough to offset the eroding margins in the hardware business and we are now reducing near-term ests for the third time in 2 months. Hardware is beset by a number of issues including China macro, lengthening smartphone upgrade cycles, and FX...issues unlikely to be fixed in the near term.

Results were in-line with previously lowered outlook. Q1 Rev declined 5% Y/Y to \$84.3B, well below initial \$89-93B guidance and just above the reduced \$84B guidance provided on Jan 2. Gross margin of 38% declined 400 bps Y/Y. EPS of \$4.18 was basically in-line with reduced expectations. F2Q rev guide of \$55-59B was below Street \$59B.

Services gross margin margin is high, and improving... Services gross margin improved 450 bps Y/Y to 63%, in line with our 60-66% expectation from our Dec 19 note [A Deep Dive into Apple's Valuable Services Business](#). In terms of launching new Services, video should be first, but health and gaming services could also arrive over time.

...but it doesn't look like enough to offset eroding gross margin for hardware. Hardware gross margin compressed 200 bps Y/Y to 34% in F1Q as iPhone units declined an est 18% Y/Y in 1Q. And Apple now sits on millions of extra iPhones that will need to be sold at deep discounts to clear the channel. We estimate this alone could drive 100bps of gross margin contraction. On top of this, guidance suggests elevated opex levels. We model EPS declining 5% Y/Y to \$11.32 in F19.

Note Apple reclassified about \$2.6B of former hardware revenue and expenses into Services. When you buy an iPhone (\$816 ASP est in Q1'F19), around \$8 of the purchase price is now recorded as Services revenue. Apple is recognizing value for free Services like Maps, Siri and free iCloud.

Macro weakness in China is being exacerbated by the fallout from trade tensions, which are driving consumers to opt for domestic brands like Huawei over iPhone. The US Justice Department filed criminal charges against Huawei this week, suggesting tensions will remain high through 1Q. For F19 we model China revs declining -23% Y/Y to \$39.7B, or 16% of total revs, down from 20% of total revs in F18.

Extended iPhone upgrade cycles seem like the key issue right now. AAPL also saw a \$1.3B negative impact from FX. It is also seeing significant pressure in regions like Turkey, where the lira depreciated by 33% vs the dollar in 2018. **5G looks like the key catalyst that will encourage more upgrades, but that is more of a 2020 or 2021 story.**

USD	Prev.	2017A	Prev.	2018A	Prev.	2019E	Prev.	2020E
Rev. (B)	--	229.2	--	265.6	258.9	251.0	255.1	253.2
Consensus EPS GAAP	--	--	--	--	13.21	11.90	15.08	13.31
EPS Diluted								
Dec	--	3.36	--	3.89	4.16	4.18A	--	--
Mar	--	2.10	--	2.73	2.73	2.40	--	--
Jun	--	1.67	--	2.34	2.22	2.08	--	--
Sep	--	2.07	--	2.91	2.82	2.60	--	--
FY Sep	--	9.21	--	11.91	11.97	11.32	12.69	12.39
FY P/E		16.8x		13.0x		13.7x		12.5x

HOLD

Price target \$160.00
Price \$154.68^

Financial Summary

Net Debt (MM): **(\$130,305.0)**

Market Data

52 Week Range:	\$233.47 - \$142.00
Total Entprs. Value:	\$617.3B
Market Cap.:	\$747.6B
Insider Ownership:	0.7%
Institutional Ownership:	73.3%
Shares Out. (MM):	4,833.0
Float (MM):	4,178.3
Avg. Daily Vol.:	43,702,556

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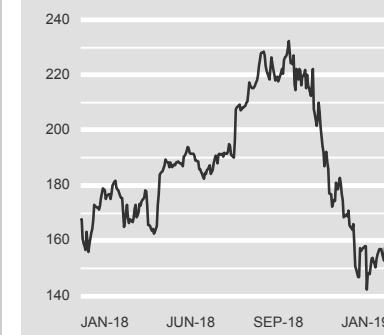
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Price Performance



[^]Prior trading day's closing price unless otherwise noted.

Scenarios**Base Case**

- We believe the Apple ecosystem is a deep, sustainable moat and consumers will pay up for hardware and services that connect to this ecosystem.
- iPhone ASP will be primary driver as Apple continues to increase hardware prices.
- \$100B share repurchase could reduce shares meaningfully.
- Large, accelerating, higher margin Services business will ease or reverse pressure on gross margin over time.
- Accelerating wearables business also driving growth.
- 2019 EPS: \$11.32; Target Multiple: 14.1x; PT \$160

Upside Scenario

- Services continues to rip higher, benefiting gross margin and warranting a higher multiple.
- iPhone unit sales skew towards higher priced phones (XS Max) with more profitable, higher memory variants (512GB).
- Apple enters new wearable categories and introduces new peripherals, growing other revenue
- Expansion into India happens sooner than expected reigniting stalling smartphone growth
- 2019 EPS: \$13; Target Multiple 17x; PT \$220

Downside Scenario

- Trade war with China would have a material impact on sales, COGS, ASP.
- If consumers balk on higher prices, this would run counter to our thesis that ASP is a growth lever.
- Competitive ecosystems owned by companies like Google or Amazon could ultimately threaten Apple's.
- Superior competitive services could threaten Apple's ecosystem over time.
- App Store's 30% revenue cut could come under pressure.
- A stronger US dollar could have a material impact on gross margin.
- 2019 EPS: \$10; Target Multiple: 12.5x; Target Price: \$125

Investment Thesis / Where We Differ

- iPhone is a mature but sustainable business, with stable market share especially among premium users. We look for ASP to be the primary growth lever over time.
- We see a large opportunity for Apple to drive meaningfully higher amounts of Services revenue into its 1.3B active install base. Attach rate, ARPU and the introduction of new services look like growth levers. Growth here could reverse or ease the ongoing pressure on gross margin in the hardware business.
- Wearables looks like a long-term growth opportunity. AirPods and Watch look like the real deal, and we expect AAPL will enter more categories over time.

Catalysts

- Ongoing product introductions
- \$100B share buyback program

Long Term Analysis**Long Term Financial Model Drivers**

3Y Rev CAGR (18-21)	~1%
3Y EPS CAGR (18-21)	~5%
LT Operating Margin Est.	~27%

Stock repurchases well below prior quarters despite the stock trading at significantly lower levels. AAPL repurchased \$13B of stock during F'1Q, well below the \$23B and \$20B of repurchases during the past two qtrs.

Table 1: Apple E v. A (in \$K)

	Q1 19 F'Q1 19E	Q1 19 F'Q1 19A	Consensus
Net Sales	\$83,825,604	\$84,310,000	\$85,334,000
% Y/Y Growth	(5%)	(5%)	
% Q/Q Growth	33	34	
Cost of Sales	51,971,875	52,279,000	
Total Gross Profit	\$31,853,730	\$32,031,000	\$32,466,800
% Margin	38.0%	38.0%	38.0%
Research and Development	4,190,000	3,902,000	
Sales, General and Administrative	4,526,583	4,783,000	
Total Stock Compensation Expense	1,519,000	1,559,000	
Operating Income (GAAP)	\$23,137,147	\$23,346,000	\$23,756,700
% Margin	27.6%	27.7%	27.8%
% Y/Y Growth	(12)	(11)	
% Q/Q Growth	44	45	
EBITDA	\$26,028,847	\$26,741,000	\$26,643,400
% Margin	31.1%	31.7%	31.2%
Net Interest (Income) and Other (Income)	544,323	560,000	
Income before taxes (GAAP)	\$23,681,470	\$23,906,000	\$24,257,100
% Effective Tax Rate	16.5%	16.5%	
Provision / (Benefit) for Income Taxes	3,907,443	3,941,000	
Tax Adjustments for Non-GAAP Items	0	0	
Minority Interest	0	0	
Reported GAAP Net Income / (Loss)	\$19,774,028	\$19,965,000	\$20,260,100
% Margin	24%	24%	23.7%
% Y/Y Growth	(1)	(0)	
% Q/Q Growth	40	41	
Weighted Avg. Diluted Shares Outstanding	4,768,757	4,773,252	
Reported GAAP EPS	\$4.15	\$4.18	\$4.24
% Y/Y Growth	7%	8%	
% Q/Q Growth	42	44	

Source: Jefferies Estimates

Table 2: Apple Segment Breakdown (in \$K)

	Q1 19	Q1 19	Consensus	Actuals vs. Consensus
	F'Q1 19E	F'Q1 19A		
Total Revenue	\$83,825,604	\$84,310,000	\$85,334,000	-1%
iPhone Revenue	\$52,237,794	\$51,982,000	\$53,495,200	-3%
Mac Revenue	\$7,092,688	\$7,416,000	\$7,236,400	2%
iPad Revenue	\$6,557,823	\$6,729,000	\$6,155,700	9%
Services Revenue	\$10,812,000	\$10,875,000	\$10,794,600	1%

Source: Jefferies Estimates, Company Reports

Table 3: AAPL Revenue Build

	F2018				F2019				F2018A	F2019E	F2020E
	Q1 18A	Q2 18A	Q3 18A	Q4 18A	Q1 19A	Q2 19E	Q3 19E	Q4 19E			
Gross Revenue (Net Sales)											
Apple Revenue	\$ 88,293,000	\$ 61,137,000	\$ 53,265,000	\$ 62,900,000	\$ 84,310,000	\$ 57,254,896	\$ 50,599,825	\$ 58,797,387	\$ 265,595,000	\$ 250,962,108	\$ 253,174,628
% Y/Y Growth	13%	16%	17%	20%	5%	-6%	-5%	-7%	16%	-6%	1%
% Q/Q Growth	68	(31)	(13)	18	34	(32)	(12)	16	--	--	--
iPhone Revenue	\$ 61,104,000	\$ 37,559,000	\$ 29,470,000	\$ 36,755,000	\$ 51,982,000	\$ 30,182,412	\$ 23,440,438	\$ 29,330,490	\$ 164,888,000	\$ 134,935,340	\$ 128,269,535
% Y/Y Growth	12%	13%	19%	27%	-15%	-20%	-20%	-20%	17%	-18%	-5%
% Q/Q Growth	112%	-39%	-22%	29%	41%	-42%	-22%	29%	--	--	--
% of Total Gross Revenue	69%	61%	55%	58%	62%	53%	46%	50%	62%	54%	51%
ASP	\$ 790	\$ 719	\$ 714	\$ 784	\$ 816	\$ 705	\$ 692	\$ 745	\$ 757	\$ 751	\$ 736
% Y/Y Growth	14%	10%	18%	27%	3%	-2%	-3%	-5%	16%	-1%	-2%
% Q/Q Growth	28%	-9%	-1%	10%	4%	-14%	-2%	8%	--	--	--
Units	77,316	52,217	41,300	46,889	63,700	42,818	33,866	39,387	217,722	179,771	174,378
% Y/Y Growth	-1%	3%	1%	0%	-18%	-18%	-18%	-16%	0%	-17%	-3%
% Q/Q Growth	66%	-32%	-21%	14%	36%	-33%	-21%	16%	--	--	--
iPad Revenue	\$ 5,755,000	\$ 4,008,000	\$ 4,634,000	\$ 3,983,000	\$ 6,729,000	\$ 4,418,419	\$ 5,156,715	\$ 4,433,079	\$ 18,380,000	\$ 20,737,213	\$ 18,518,332
% Y/Y Growth	4%	3%	-7%	-18%	17%	10%	11%	11%	-4%	13%	-1%
% Q/Q Growth	19%	-30%	16%	-14%	69%	-34%	17%	-14%	--	--	--
% of Total Gross Revenue	7%	7%	9%	6%	8%	10%	8%	7%	8%	7%	7%
ASP	\$ 437	\$ 440	\$ 401	\$ 411	\$ 482	\$ 466	\$ 429	\$ 431	\$ 422	\$ 453	\$ 426
% Y/Y Growth	3%	1%	8%	-12%	10%	6%	7%	5%	7%	6%	6%
% Q/Q Growth	-7%	1%	-9%	2%	17%	-3%	-8%	0%	7%	7%	--
Units	13,170	9,113	11,553	9,699	13,960	9,478	12,015	10,281	43,535	45,734	43,447
% Y/Y Growth	1%	2%	1%	-6%	6%	4%	6%	0%	5%	5%	-5%
% Q/Q Growth	28%	-31%	27%	-16%	44%	-32%	27%	-14%	--	--	--
Mac Revenue	\$ 6,824,000	\$ 5,776,000	\$ 5,258,000	\$ 7,340,000	\$ 7,416,000	\$ 5,943,504	\$ 5,410,482	\$ 7,480,928	\$ 25,198,000	\$ 26,250,914	\$ 23,935,583
% Y/Y Growth	-6%	-1%	6%	2%	9%	3%	2%	2%	-3%	4%	-9%
% Q/Q Growth	5%	15%	9%	40%	1%	20%	9%	38%	--	--	--
% of Total Gross Revenue	8%	9%	10%	12%	9%	10%	11%	13%	9%	10%	9%
ASP	\$ 1,335	\$ 1,416	\$ 1,413	\$ 1,385	\$ 1,419	\$ 1,388	\$ 1,385	\$ 1,357	\$ 1,384	\$ 1,387	\$ 1,346
% Y/Y Growth	-1%	2%	8%	4%	6%	-2%	-2%	3%	0%	0%	-3%
% Q/Q Growth	0%	6%	0%	-2%	2%	-2%	0%	-2%	--	--	--
Units	5,112	4,078	3,720	5,299	5,224	4,282	3,906	5,511	18,209	18,923	17,788
% Y/Y Growth	-5%	-3%	-13%	-2%	2%	5%	5%	4%	-5%	4%	-6%
% Q/Q Growth	-5%	-20%	-9%	42%	-7%	-18%	-9%	41%	--	--	--
Services Revenue	\$ 9,129,000	\$ 9,850,000	\$ 10,170,000	\$ 10,599,000	\$ 10,875,000	\$ 11,820,000	\$ 12,000,600	\$ 12,400,830	\$ 39,748,000	\$ 47,096,430	\$ 56,787,880
% Y/Y Growth	27%	40%	40%	25%	19%	20%	18%	17%	33%	18%	21%
% Q/Q Growth	7%	8%	3%	4%	3%	9%	2%	3%	--	--	--
% of Total Gross Revenue	10%	16%	19%	17%	13%	21%	24%	21%	15%	19%	22%
Wearables, Home, and Accessories Revenue	\$ 5,481,000	\$ 3,944,000	\$ 3,733,000	\$ 4,223,000	\$ 7,308,000	\$ 4,890,560	\$ 4,591,590	\$ 5,152,060	\$ 17,381,000	\$ 21,942,210	\$ 25,663,299
% Y/Y Growth	36%	3%	36%	31%	33%	24%	23%	35%	26%	17%	--
% Q/Q Growth	70%	-28%	-5%	13%	73%	-33%	-6%	12%	--	--	--
% of Total Gross Revenue	6%	6%	7%	7%	9%	9%	9%	9%	7%	9%	10%

Source: Jefferies Estimates, Company Reports

Table 4: AAPL Income Statement

	F2018				F2019				F2018A	F2019E	F2020E
	Q1 18A	Q2 18A	Q3 18A	Q4 18A	Q1 19A	Q2 19E	Q3 19E	Q4 19E			
Net Sales											
Net Sales	\$ 88,293,000	\$ 61,137,000	\$ 53,265,000	\$ 62,900,000	\$ 84,310,000	\$ 57,254,896	\$ 50,599,825	\$ 58,797,387	\$ 265,595,000	\$ 250,962,108	\$ 253,174,628
% Y/Y Growth	13%	16%	17%	20%	(5%)	(6%)	(5%)	(7%)	16%	(6%)	1%
% Q/Q Growth	68	(31)	(13)	18	34	(32)	(12)	16	--	--	--
Cost of Sales	\$ 4,381,000	\$ 37,715,000	\$ 32,844,000	\$ 38,816,000	\$ 52,279,000	\$ 35,791,803	\$ 31,410,691	\$ 36,747,535	\$ 163,756,000	\$ 156,229,029	\$ 156,158,758,23
Total Gross Profit	\$ 53,912,000	\$ 23,422,000	\$ 20,421,000	\$ 24,084,000	\$ 32,031,000	\$ 21,463,092	\$ 19,189,134	\$ 22,049,852	\$ 101,839,000	\$ 94,733,079	\$ 97,015,870
% Margin	38.4%	38.3%	38.3%	38.3%	38.0%	37.5%	37.5%	37.5%	23.1%	24%	38.3%
Research and Development	3,407,000	3,378,000	3,701,000	3,750,000	3,902,000	3,992,000	4,142,000	4,212,000	\$14,236,000	\$16,248,000	\$17,722,224
Sales, General and Administrative	4,231,000	4,150,000	4,108,000	4,216,000	4,783,000	4,408,627	3,946,786	4,233,412	\$16,705,000	\$17,371,825	\$17,722,224
Total Stock Compensation Expense	1,296,000	1,348,000	1,351,000	1,345,000	1,559,000	1,565,500	1,542,500	1,535,000	\$5,340,000	\$6,222,000	\$7,246,568
Operating Income (GAAP)	\$ 26,274,000	\$ 15,894,000	\$ 12,612,000	\$ 16,118,000	\$ 23,346,000	\$ 13,062,465	\$ 11,100,348	\$ 13,604,441	\$ 70,898,000	\$ 61,113,254	\$ 61,571,422
% Margin	29.8%	26.0%	23.7%	25.6%	27.7%	22.8%	21.9%	23.1%	27%	24%	24%
% Y/Y Growth	12	13	17	23	(11)	(18)	(12)	(16)	16	(14)	1
% Q/Q Growth	100	(40)	(21)	28	45	(44)	(15)	23	--	--	--
EBITDA	\$ 29,019,000	\$ 18,633,000	\$ 15,277,000	\$ 18,872,000	\$ 26,741,000	\$ 16,627,215	\$ 14,843,336	\$ 17,534,577	\$ 81,801,000	\$ 75,746,128	\$ 78,033,406
% Margin	33%	30%	29%	30%	32%	29%	29%	30%	31%	30%	31%
Net Interest (Income) and Other (Income)	756,000	274,000	672,000	303,000	\$60,000	300,000	202,774	150,388	2,005,000	1,213,162	290,924
Income before taxes (GAAP)	\$ 27,030,000	\$ 16,168,000	\$ 13,284,000	\$ 16,421,000	\$ 23,966,000	\$ 13,362,465	\$ 11,303,122	\$ 13,754,828	\$ 72,903,000	\$ 62,326,415	\$ 61,862,347
% Effective Tax Rate	25.8%	14.3%	13.3%	14.0%	16.5%	16.5%	16.5%	16.5%	18.3%	18.3%	17.5%
Provision / (Benefit) for Income Taxes	6,965,000	2,346,000	1,765,000	2,296,000	3,941,000	2,202,856	1,863,365	2,267,539	13,372,000	10,274,760	10,825,911
Tax Adjustments for Non-GAAP Items	0	0	0	0	0	0	0	0	0	0	0
Minority Interest	0	0	0	0	0	0	0	0	0	0	0
Reported GAAP Net Income / (Loss)	\$ 20,065,000	\$ 13,822,000	\$ 11,519,000	\$ 14,125,000	\$ 19,965,000	\$ 11,159,609	\$ 9,439,757	\$ 11,487,290	\$ 59,531,000	\$ 52,051,656	\$ 51,036,436
% Margin	23%	23%	22%	22%	24%	19%	19%	20%	22%	21%	20%
% Y/Y Growth	12	25	32	32	(0)	(19)	(18)	(19)	23	(13)	(2)
% Q/Q Growth	87	(31)	(17)	23	41	(44)	(15)	22	--	--	--
Basic Shares Outstanding (Q)	5,157,787	5,068,493	4,882,167	4,801,589	4,735,820	4,618,627	4,501,142	4,383,362	4,955,377	4,559,738	4,077,557
Weighted Avg. Basic Shares Outstanding	5,157,787	5,068,493	4,926,609	4,847,547	4,773,252	4,656,153	4,538,761	4,421,076	5,000,109	4,597,310	4,115,506
Weighted Avg. Diluted Shares Outstanding	5,157,787	5,068,493	4,926,609	4,847,547	4,773,252	4,657,585	4,541,594	4,425,278	5,000,109	4,599,427	4,117,644
Reported GAAP EPS	\$ 3.89	\$ 2.73	\$ 2.34	\$ 2.91	\$ 4.18	\$ 2.40	\$ 2.08	\$ 2.60	\$ 11.91	\$ 11.32	\$ 12.39
% Y/Y Growth	16%	30%	40%	41%	8%	(12%)	(11%)	(11%)	29%	(5%)	10%
% Q/Q Growth	88	(30)	(14)	25	44	(43)	(13)	25	--	--	--

Source: Jefferies Estimates, Company Reports

Table 5: AAPL Balance Sheet

	F2018				F2019				F2018A	F2019E	F2020E
	Q1 18A	Q2 18A	Q3 18A	Q4 18A	Q1 19A	Q2 19E	Q3 19E	Q4 19E			
Cash & Cash Equivalents	\$27,491,000	\$45,059,000	\$31,971,000	\$25,913,000	\$44,771,000	\$77,652,802	\$55,418,625	\$56,533,047	\$25,913,000	\$56,533,047	\$64,018,996
Short-Term Marketable Securities	49,662,000	42,881,000	38,999,000	40,388,000	41,656,000	34,352,937	30,359,895	35,278,432	40,388,000	35,278,432	22,785,717
Accounts Receivable, Less Allowances	23,440,000	14,324,000	14,104,000	23,186,000	18,077,000	12,276,085	10,849,164	12,606,813	23,186,000	12,606,813	17,340,728
Inventories	4,421,000	7,662,000	5,936,000	3,956,000	4,988,000	3,414,937	2,996,930	3,506,125	3,956,000	3,506,125	4,605,666
Deferred Tax Assets	0	0	0	0	0	0	0	0	0	0	0
Vendor non-trade receivables	27,459,000	8,084,000	12,263,000	25,809,000	18,904,000	17,650,752	17,211,337	10,752,429	25,809,000	10,752,429	9,595,137
Other current assets	11,337,000	12,043,000	12,488,000	12,087,000	12,432,000	11,890,805	10,797,626	12,851,444	12,087,000	12,851,444	13,123,587
Current Assets	\$143,810,000	\$130,053,000	\$115,761,000	\$131,339,000	\$140,828,000	\$157,238,320	\$127,633,578	\$131,528,290	\$131,339,000	\$131,528,290	\$131,469,830
Long-term marketable securities	207,944,000	179,286,000	172,773,000	170,799,000	158,608,000	125,960,770	111,319,615	129,354,251	170,799,000	129,354,251	88,611,120
Property, plant and equipment, net	33,679,000	35,077,000	38,117,000	41,304,000	39,597,000	40,288,620	40,683,438	41,883,035	41,304,000	41,883,035	40,611,529
Goodwill	5,889,000	0	0	0	0	0	0	0	0	0	0
Acquired intangible assets, net	2,149,000	0	0	0	0	0	0	0	0	0	0
Other non-current assets	13,323,000	23,086,000	22,546,000	22,283,000	34,686,000	34,686,000	34,686,000	22,283,000	34,686,000	34,686,000	34,686,000
Total Assets	\$406,794,000	\$367,502,000	\$349,197,000	\$365,725,000	\$373,719,000	\$358,173,710	\$314,322,631	\$337,451,577	\$365,725,000	\$337,451,577	\$295,378,479
Current Liabilities:											
Accounts Payable	\$62,985,000	\$34,311,000	\$38,489,000	\$55,888,000	\$44,293,000	\$35,301,505	\$30,980,407	\$36,244,144	\$55,888,000	\$36,244,144	\$32,087,416
Accrued Expenses	26,281,000	26,756,000	25,184,000	32,687,000	36,703,000	28,226,107	26,854,771	30,403,483	32,687,000	30,403,483	35,444,448
Deferred Revenue	8,044,000	7,775,000	7,403,000	7,543,000	5,546,000	7,328,627	7,286,375	8,466,824	7,543,000	8,466,824	8,453,501
Commercial Paper	11,980,000	11,980,000	11,974,000	11,964,000	11,969,000	11,969,000	11,969,000	11,964,000	11,969,000	11,969,000	11,984,000
Current Portion of Long-Term Debt	6,498,000	8,498,000	5,989,000	8,784,000	9,772,000	9,772,000	9,772,000	8,784,000	9,772,000	9,772,000	5,624,100
Total Current Liabilities	\$115,788,000	\$89,320,000	\$88,548,000	\$116,866,000	\$108,283,000	\$92,597,238	\$86,862,553	\$96,855,450	\$116,866,000	\$96,855,450	\$93,593,465
Deferred Revenue - Non Current	3,131,000	3,087,000	2,878,000	2,797,000	0	0	0	0	\$2,797,000	\$0	0
Long-Term Debt	103,922,000	101,362,000	97,128,000	93,735,000	92,989,000	92,989,000	92,989,000	92,989,000	93,735,000	93,735,000	93,735,000
Other Non-Current Liabilities	43,754,000	46,855,000	45,694,000	45,180,000	54,555,000	50,403,762	48,532,718	50,672,471	54,180,000	50,672,471	52,589,253
Total Liabilities	\$266,595,000	\$240,624,000	\$234,248,000	\$258,578,000	\$255,827,000	\$235,990,000	\$228,384,271	\$240,516,921	\$258,578,000	\$240,516,921	\$239,917,718
Common Stock and Additional Paid-In Capital									\$0	\$0	\$0
Additional Paid-In Capital	36,447,000	38,044,000	38,624,000	40,201,000	40,970,000	42,461,461	29,865,424	33,686,873	35,867,000	33,686,873	19,273,805
Retained Earnings (Accumulated Deficit)	104,593,000	91,898,000	79,436,000	70,400,000	80,510,000	83,440,866	58,688,438	66,197,953	70,400,000	66,197,953	37,874,884
Treasury Stock	0	0	0	0	0	0	0	0	0	0	0
Accumulated Other Comprehensive Income	(841,000)	(3,064,000)	(3,111,000)	(3,454,000)	(3,588,000)	(3,718,617)	(2,615,503)	(2,950,171)	(3,454,000)	(2,950,171)	(1,687,928)
Shareholders' Equity	\$140,199,000	\$126,878,000	\$114,949,000	\$107,147,000	\$117,892,000	\$122,183,710	\$85,938,360	\$96,934,655	\$107,147,000	\$96,934,655	\$55,460,761
Liabilities & Shareholders' Equity	\$406,794,000	\$367,502,000	\$349,197,000	\$365,725,000	\$373,719,000	\$358,173,710	\$314,322,631	\$337,451,577	\$365,725,000	\$337,451,577	\$295,378,479

Source: Jefferies Estimates, Company Reports

Table 6: AAPL Cash Flow Statement

	F2018				F2019				F2020		
	Q1 18A	Q2 18A	Q3 18A	Q4 18A	Q1 19A	Q2 19E	Q3 19E	Q4 19E	F2018A	F2019E	F2020E
Net Income	\$20,065,000	\$13,822,000	\$11,519,000	\$14,125,000	\$19,965,000	\$11,159,609	\$9,439,757	\$11,487,290	\$59,531,000	\$52,051,656	\$51,036,436
Depreciation	2,745,000	2,739,000	2,665,000	2,754,000	3,395,000	3,564,750	3,742,988	3,930,137	10,903,000	14,632,874	16,461,984
Share-based Compensation Expense	1,296,000	1,348,000	1,351,000	1,345,000	1,559,000	1,565,300	1,555,000	1,542,500	5,340,000	6,222,000	6,222,000
Provision for deferred income taxes	(33,737,000)	(498,000)	1,126,000	519,000	53,000	1,200,000	1,200,000	1,200,000	(32,590,000)	0	0
Other	(11,000)	(140,000)	(259,000)	(34,000)	(54,000)	(25,000)	(25,000)	(25,000)	(444,000)	300,000	300,000
(Inc.) Decl. in Accounts Receivable	(5,570,000)	9,093,000	233,000	(9,078,000)	5,130,000	5,800,915	1,426,921	(1,757,648)	(5,322,000)	10,600,187	(4,733,915)
(Inc.) Decl. in Inventories	434,000	(324,100)	1,693,000	1,942,000	(1,076,000)	1,573,063	418,007	(509,194)	828,000	405,875	(109,594)
(Inc.) Decl. in Vendor non-trade receivables	(9,660,000)	19,375,000	(4,179,000)	(13,546,000)	6,905,000	1,253,248	439,415	6,458,908	(8,010,000)	15,056,571	15,056,571
Inc. (Decl.) in Other Current Assets	0	0	0	0	0	0	0	0	0	0	1,157,292
Inc. (Decl.) in Other Assets	(197,000)	(856,000)	988,000	(358,000)	(886,000)	541,195	1,093,179	(2,051,818)	(423,000)	(1,305,444)	(272,143)
Inc. (Decl.) in Accounts Payable	14,588,000	(27,808,000)	2,081,000	20,314,000	(8,501,000)	(8,991,495)	(4,321,098)	5,263,736	9,175,000	(16,549,856)	(4,156,728)
Inc. (Decl.) in Deferred Revenue	791,000	(313,000)	(581,000)	59,000	(370,000)	1,782,627	(42,252)	1,180,449	(44,000)	2,550,824	(13,323)
Inc. (Decl.) in Other Liabilities	37,549,000	1,609,000	(2,149,000)	1,481,000	570,000	(4,151,238)	(1,871,044)	2,139,753	38,490,000	(3,312,529)	1,916,782
Change in Net Working Capital	\$37,935,000	(\$2,141,000)	(\$1,914,000)	\$81,000	\$1,772,000	(\$2,191,687)	(\$2,856,871)	\$10,722,186	\$34,694,000	\$7,445,428	\$7,854,995
Cash Flow from Operations	\$28,293,000	\$15,130,000	\$14,488,000	\$19,523,000	\$26,690,000	\$15,273,172	\$13,055,874	\$28,857,112	\$77,434,000	\$80,652,158	\$81,873,415
Purchase of Marketable Securities	(41,272,000)	(7,177,000)	(7,684,000)	(15,223,000)	(7,077,000)	0	0	0	(56,133,000)	(7,077,000)	0
Proceeds from Maturities of Marketable Securities	14,048,000	17,836,000	14,406,000	9,591,000	7,203,000	45,000,000	0	0	46,290,000	52,203,000	52,203,000
Proceeds from Sales of Marketable Securities	16,801,000	22,141,000	2,672,000	6,224,000	9,723,000	0	0	0	41,614,000	9,723,000	0
Payments Made in Connection with Business Acquisitions, Net of Cash Acquired	(173,000)	(132,000)	(126,000)	(290,000)	(167,000)	(100,000)	(100,000)	(100,000)	(72,000)	(46,000)	0
Payments for Acquisitions of Property, Plant and Equipment	(2,810,000)	(4,195,000)	(3,267,000)	(3,041,000)	(3,355,000)	(3,893,333)	(3,440,788)	(4,115,817)	(13,313,000)	(14,804,938)	(15,190,478)
Purchases of non-Marketable Securities	(154,000)	154,000	(1,788,000)	0	0	(150,000)	(150,000)	(150,000)	(1,788,000)	(450,000)	0
Proceeds from non-Marketable Securities	(94,000)	94,000	310,000	(310,000)	0	50,000	50,000	50,000	0	150,000	150,000
Other	64,000	(11,000)	(576,000)	48,000	(483,000)	50,000	50,000	50,000	117,000	(333,000)	(333,000)
Net Cash Used in Investing Activities	(\$13,590,000)	\$28,710,000	\$3,947,000	(\$3,001,000)	\$5,844,000	\$40,956,667	(\$3,590,788)	(\$4,265,817)	\$16,666,000	\$38,944,062	\$36,829,522
Proceeds from Issuance of Common Stock	0	327,000	1,000	341,000	0	325,000	0	350,000	669,000	675,000	675,000
Excess tax benefits from stock-based compensation	0	0	0	0	0	0	0	0	0	0	0
Cash dividends paid	(3,339,000)	(3,190,000)	(3,651,000)	(3,530,000)	(3,568,000)	(3,400,000)	(3,315,363)	(3,540,222)	(13,712,000)	(13,882,623)	(13,884,989)
Repurchase of common stock	(10,095,000)	(22,756,000)	(20,785,000)	(19,104,000)	(8,796,000)	(20,000,000)	(20,000,000)	(20,000,000)	(22,738,000)	(68,796,000)	(95,000,000)
Proceeds from issuance of term debt, net	6,969,000	0	0	0	0	0	0	0	6,969,000	0	0
Repayments of term debt	0	(500,000)	(6,000,000)	0	0	0	0	0	(6,500,000)	(7,000,000)	0
Change in commercial paper, net	2,000	(1,000)	(11,000)	(27,000)	6,000	0	0	0	(37,000)	6,000	15,000
Cash Used to Net Share Settle Equity Awards	(1,038,000)	(152,000)	(1,077,000)	(260,000)	(1,318,000)	(273,000)	(1,383,900)	(286,650)	(2,527,000)	(3,261,500)	0
Other	0	0	0	0	0	0	0	0	50	50	0
Net Cash Provided by Financing Activities	(\$7,501,000)	(\$26,272,000)	(\$31,523,000)	(\$32,580,000)	(\$13,676,000)	(\$23,348,037)	(\$31,699,265)	(\$23,476,872)	(\$87,876,000)	(\$92,200,173)	(\$107,994,989)
Effect of Exchange Rate Changes	0	0	0	0	0	0	0	0	0	0	0
Inc. (Decl.) in Cash and Cash Equivalents	\$7,202,000	\$17,568,000	(\$13,088,000)	(\$6,058,000)	\$18,858,000	\$32,881,802	(\$22,234,178)	\$1,114,423	\$5,624,000	\$27,396,047	\$10,709,948
Beginning Cash and Cash Equivalents	20,289,000	27,491,000	45,059,000	31,971,000	25,913,000	44,771,000	27,652,802	55,418,625	20,289,000	25,913,000	31,309,047
Ending Cash and Cash Equivalents	\$27,491,000	\$45,059,000	\$31,971,000	\$25,913,000	\$44,771,000	\$27,652,802	\$55,418,625	\$56,533,047	\$25,913,000	\$53,309,047	\$64,181,996

Source: Jefferies Estimates, Company Reports

Table 7: AAPL DCF

	2019													
	2018A	Q1 19E	Q2 19E	Q3 19E	Q4 19E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Revenue	\$265,595	\$88,293	\$60,597	\$52,938	\$62,017	\$257,072	\$256,895	\$261,309	\$265,322	\$267,971	\$268,821	\$262,160	\$261,263	\$259,764
% Y/Y Growth	16%	0%	(1%)	(1%)	(1%)	(3%)	(0%)	2%	2%	1%	0%	(2%)	(0%)	(1%)
EBITDA	\$81,801	\$29,019	\$18,770	\$15,944	\$19,177	\$80,985	\$84,266	\$89,251	\$93,964	\$97,671	\$100,531	\$98,308	\$99,794	\$101,137
% Margin	31%	33%	31%	30%	31%	32%	33%	34%	35%	36%	37%	38%	39%	39%
% Y/Y Growth	14	0	1	4	2	(2)	4	6	5	4	3	(2)	2	1
Implied Taxes on Operations	(\$15,004)	(\$7,478)	(\$4,837)	(\$4,108)	(\$4,941)	(\$13,767)	(\$14,325)	(\$15,173)	(\$15,974)	(\$16,604)	(\$17,090)	(\$16,712)	(\$16,965)	(\$17,193)
% Effective Tax Rate	18%	26%	26%	26%	26%	17%	17%	17%	17%	17%	17%	17%	17%	17%
Capital Expenditures	(\$13,313)	(\$2,810)	(\$4,121)	(\$3,176)	(\$3,721)	(\$13,882)	(\$14,900)	(\$15,679)	(\$16,185)	(\$16,346)	(\$16,398)	(\$15,992)	(\$15,937)	(\$15,846)
% Y/Y Growth	7%	0%	(2%)	(3%)	22%	0%	7%	5%	3%	1%	0%	(2%)	(0%)	(1%)
Change in NWC	\$34,694	\$32,935	(\$6,684)	(\$1,426)	\$11,716	(\$1,259)	\$7,635	\$5,445	\$8,454	\$6,855	\$7,768	\$6,795	\$7,532	\$6,817
Acquisitions Not Yet Reflected	(\$721)	(173)	(100)	(100)	(100)	0	0	0	0	0	0	0	0	0
Unlevered Free Cash Flow	\$87,457	\$56,493	\$3,028	\$7,133	\$22,131	\$52,077	\$62,675	\$63,845	\$70,259	\$71,576	\$74,811	\$72,399	\$74,424	\$74,916
NPV at 9/30/18 Valuation Date and 10% WACC	\$53,871	\$2,820	\$6,485	\$19,642	\$44,056	\$48,202	\$44,638	\$44,657	\$41,347	\$39,287	\$34,564	\$32,301	\$29,551	
Perpetuity Growth Rate / Terminal Value at 10% WACC							Implied Terminal Value / Terminal EBITDA Multiple							
(1.5%)	(1.0%)	(0.5%)	0.0%	0.5%			5.5x	5.8x	6.1x	6.4x	6.8x			
\$554,598	\$582,750	\$613,584	\$647,500	\$684,987			\$554,598.25	\$582,750.44	\$613,583.80	\$647,500.49	\$684,987.36			
Median DCF Valuation at 9/30/18 Valuation Date							WACC							
NPV of Cash Flows and Terminal Value					3710		8%	\$175	\$177	\$180	\$183	\$186		
Plus: Cash and Equivalents					122,617		9%	166	168	171	173	176		
Implied Equity Value					\$784,067		10%	158	160	162	165	167		
Implied Fully Diluted Shares Outstanding (MM)					4,899		11%	151	152	154	157	159		
Implied Equity Value per Share					\$160		12%	144	146	147	149	152		

Source: Jefferies Estimates, Company Reports

Table 8: AAPL SOTP

Segment	Multiple		2019E Revenue	Firm Value		Per Share	Revenue		EV/Rev to Growth
	Low	High		Low	High		CAGR ('18-21)		
Hardware	1.4x	2.4x	203,865,678	289,489,262	479,084,343	\$96	-5.9%	-0.32	
Services	4.0x	7.0x	47,096,430	186,030,899	327,320,189	\$64	18.8%	0.29	
Enterprise Value			250,962,108	475,520,161	806,404,531				
Net Cash				130,305,000	130,305,000				
Equity Value				605,825,161	936,709,531				
Implied Share Price				\$125	\$194	\$160			

Source: Jefferies, company data

Table 9: AAPL Comp Sheet

Company Hardware	Ticker	Rating	Price Target (\$)	Price (\$)	YTD (%)	Market Cap (\$MMs)	Revenue growth			EBITDA margin			EV/Sales		EV/EBITDA		Price / Earnings		EV/FCF		
							2017A	2018E	2019E	2020E	2018E	2019E	2020E	2019E	2020E	2019E	2020E	2019E	2020E		
Apple Inc.	AAPL	Hold	\$160	\$154.68	-2%	\$731,606	6%	16%	-3%	4%	27%	32%	28%	3.2x	3.1x	10.1x	10.8x	13.0x	11.6x	14.2x	13.9x
Microsoft Corporation	MSFT	Underperform	\$75	\$102.94	1%	\$790,323	5%	14%	13%	11%	34%	36%	39%	5.9x	5.3x	16.3x	13.8x	23.2x	20.5x	20.9x	18.9x
Sony Corporation Sponsored ADR	SNE	Buy	\$78	\$48.78	1%	\$61,985	15%	0%	2%	4%	13%	14%	13%	0.6x	0.6x	4.4x	4.4x	11.9x	11.0x	10.5x	9.8x
HP Inc.	HPQ	NC	-	\$21.88	7%	\$33,990	8%	12%	2%	1%	7%	8%	8%	0.6x	0.6x	7.6x	7.5x	10.0x	9.5x	9.4x	10.0x
Dell Technologies Inc Class C	DELL	NC	-	\$46.85	-4%	\$8,054	3%	16%	4%	4%	3%	11%	11%	0.4x	0.4x	3.9x	3.6x	7.3x	7.0x	6.0x	5.2x
Sonos, Inc.	SONO	Hold	\$12	\$11.20	14%	\$1,333	10%	15%	11%	9%	5%	5%	6%	0.9x	0.8x	16.4x	13.4x	103.4x	28.1x	N/A	N/A
Average Median														1.9x	1.8x	9.8x	8.9x	28.1x	14.6x	12.2x	11.5x
Services														0.8x	0.7x	8.9x	9.1x	12.4x	11.3x	10.5x	10.0x
Apple Inc.	AAPL	Hold	\$160	\$154.68	-2%	\$731,606	6%	16%	-3%	28%	27%	32%	23%	3.2x	2.5x	10.1x	10.8x	13.0x	11.6x	14.2x	13.9x
Amazon.com, Inc.	AMZN	Buy	\$2,300	\$1,593.88	6%	\$777,401	31%	31%	20%	19%	8%	12%	13%	2.8x	2.3x	23.5x	18.3x	58.4x	40.1x	28.3x	20.6x
Alphabet Inc. Class A	GOOGL	Buy	\$1,450	\$1,070.06	2%	\$754,536	21%	53%	19%	18%	32%	31%	31%	4.0x	3.4x	12.7x	10.8x	22.6x	19.6x	19.6x	15.8x
Facebook, Inc. Class A	FB	Buy	\$180	\$144.19	10%	\$431,705	47%	36%	24%	21%	49%	48%	42%	5.7x	4.7x	11.8x	11.1x	19.5x	17.2x	27.1x	22.0x
Netflix, Inc.	NFLX	NC	-	\$328.90	23%	\$143,428	32%	35%	28%	24%	7%	10%	12%	7.8x	6.3x	78.7x	52.8x	80.6x	50.7x	N/A	N/A
Adobe Inc.	ADBE	Buy	\$315	\$238.27	5%	\$118,396	25%	24%	23%	18%	34%	35%	37%	10.4x	8.8x	29.5x	23.8x	30.6x	24.7x	26.2x	21.9x
PayPal Holdings, Inc.	PYPL	Buy	\$110	\$91.12	8%	\$107,372	21%	18%	17%	17%	22%	22%	22%	5.7x	4.9x	25.6x	21.6x	31.5x	26.0x	25.4x	21.7x
Activision Blizzard, Inc.	ATVI	Buy	\$60	\$45.73	-2%	\$36,310	8%	4%	-3%	8%	34%	36%	34%	4.9x	4.6x	13.5x	13.2x	18.1x	15.6x	17.5x	15.6x
Electronic Arts, Inc.	EA	Hold	\$95	\$87.24	11%	\$28,091	5%	0%	7%	5%	35%	32%	34%	4.4x	4.2x	13.6x	12.2x	320.3x	15.7x	15.8x	14.0x
Spotify Technology SA	SPOT	NC	-	\$132.46	17%	\$23,994	N/A	21%	27%	24%	-6%	-2%	-1%	3.0x	2.4x	N/A	N/A	N/A	N/A	76.0x	40.8x
Sirius XM Holdings, Inc.	SIRI	NC	-	\$5.74	1%	\$25,123	N/A	6%	6%	5%	37%	36%	37%	5.4x	5.2x	15.1x	14.1x	21.1x	18.6x	19.2x	18.4x
Snap, Inc.	SNAP	Hold	\$7	\$6.43	17%	\$8,173	104%	41%	30%	26%	-62%	-41%	-22%	3.7x	2.9x	N/A	N/A	N/A	N/A	N/A	N/A
Box, Inc.	BOX	NC	-	\$19.75	17%	\$2,832	27%	20%	20%	19%	-3%	3%	6%	31.4x	26.4x	910.1x	451.1x	763.3x	N/A	N/A	241.6x
Dropbox, Inc.	DBX	Buy	\$37	\$23.24	14%	\$3,904	N/A	25%	16%	14%	17%	20%	21%	14.4x	12.6x	70.4x	58.5x	50.4x	39.2x	56.7x	41.6x
Zynga, Inc.	ZNGA	Buy	\$5.25	\$4.42	12%	\$3,881	13%	12%	27%	12%	14%	15%	16%	2.7x	2.4x	17.5x	14.8x	24.8x	19.1x	15.6x	14.6x
Pandora Media, Inc.	P	NC	-	\$8.31	3%	\$2,255	6%	7%	14%	12%	-8%	-6%	0%	1.5x	1.3x	N/A	N/A	N/A	N/A	50.9x	21.2x
Average Median														6.9x	5.9x	94.8x	54.9x	111.9x	24.9x	28.5x	39.5x
Consumer														4.6x	4.4x	17.5x	14.8x	30.6x	19.4x	22.5x	21.1x
Apple Inc.	AAPL	Hold	\$160	\$154.68	-2%	\$731,606	6%	16%	-3%	4%	27%	32%	28%	3.2x	3.1x	10.1x	10.8x	13.0x	11.6x	14.2x	13.9x
Procter & Gamble Company	PG	Hold	\$98	\$93.54	2%	\$233,998	0%	3%	0%	3%	26%	26%	25%	4.0x	3.9x	15.5x	15.6x	21.0x	19.6x	25.6x	23.1x
Coca-Cola Company	KO	Hold	\$49	\$47.40	0%	\$201,759	-15%	-10%	5%	5%	34%	33%	35%	6.9x	6.6x	20.8x	19.1x	21.4x	19.8x	30.2x	25.2x
PepsiCo, Inc.	PEP	Hold	\$105	\$109.00	-1%	\$153,861	1%	2%	3%	3%	20%	20%	20%	2.6x	2.6x	13.5x	13.1x	18.6x	17.3x	22.9x	21.3x
Kraft Heinz Company	KHC	Buy	\$75	\$46.88	9%	\$57,167	-1%	0%	0%	1%	30%	28%	28%	3.4x	3.3x	12.1x	11.9x	12.7x	12.3x	18.7x	20.9x
Average Median														4.0x	3.9x	14.4x	14.1x	17.3x	16.1x	22.3x	20.9x

Source: Jefferies Estimates, Company Reports

Company Description

Apple Inc.

Apple, Inc. engages in the design, manufacture, and marketing of mobile communication, media devices, personal computers, and portable digital music players. It operates through the following geographical segments: Americas, Europe, Greater China, Japan, and Rest of Asia Pacific. The Americas segment includes both North and South America. The Europe segment consists of European countries, as well as India, the Middle East, and Africa. The Greater China segment comprises of China, Hong Kong, and Taiwan. The Rest of Asia Pacific segment includes Australia and Asian countries not included in the reportable operating segments of the company. The company was founded by Steven Paul Jobs, Ronald Gerald Wayne, and Stephen G. Wozniak on April 1, 1976 and is headquartered in Cupertino, CA.

Company Valuation/Risks

Apple Inc.

Our PT of \$160 is derived by a DCF (11% WACC) and implies 14x our 2019 EPS, supported by a SOTP and multiples. Risks to our call include a rebound in China and iPhone revenue, or shares re-rating around Services or trade war news. Risks to AAPL's business include a trade war with China, consumer pushback against higher ASP, competitive services diluting the value of Apple's ecosystem, and a strengthening dollar.

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(Article 3(1)e and Article 7 of MAR)

Recommendation Published January 30, 2019 , 01:34 ET.
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Steven DeSanctis owns shares of Apple Inc. common shares. Tim O'Shea owns shares of Apple Inc. common stock.
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Other Companies Mentioned in This Report

- Apple Inc. (AAPL: \$154.68, HOLD)



Steven DeSanctis owns shares of Apple Inc. common shares. Tim O'Shea owns shares of Apple Inc. common stock.

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Legend:

I: Initiating Coverage

D: Dropped Coverage

B: Buy

H: Hold

UP: Underperform

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			Count	Percent	Count	Percent
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29 January 2019

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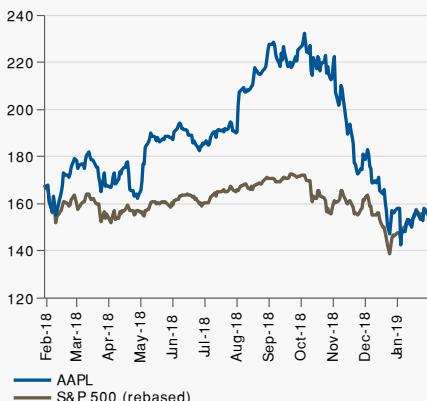
Price (29-Jan) US\$154.68
Ticker AAPL-NASDAQ

52-Week Range (US\$): 142.00 - 233.47
Avg Daily Vol (M) : 42.7
Market Cap (US\$M): 731,606
Shares Out. (M) : 4,729.8

FYE Sep	2018A	2019E	2020E
Sales (US\$M)	265,595	253,715↑	266,218↓
Previous	-	252,199	266,580
EPS GAAP (US\$)	11.87	11.35↓	12.88↓
Previous	-	11.84	13.27

Quarterly Sales	Q1	Q2	Q3	Q4
2018A	88,293	61,137	53,265	62,900
2019E	84,310A	56,848	52,735	59,823
2020E	86,774	61,891	56,433	61,120

Quarterly EPS GAAP	Q1	Q2	Q3	Q4
2018A	3.89	2.73	2.34	2.91
2019E	4.18A	2.31	2.18	2.68
2020E	4.69	2.90	2.50	2.79



Source: FactSet

Priced as of close of business 29 January 2019

Apple designs, manufactures, and sells smartphones, tablets, PCs, and other hardware along with related software, services, and networking solutions.

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Lowering Target Price

Results and guidance consistent with expectations; slightly lowering estimates

Investment recommendation: Apple reported Q1/F'19 results in line with its preannouncement with revenue of \$84B and EPS of \$4.18, in line with our and consensus' estimates. As detailed in Tim Cook's letter to shareholders on January 2, weak China iPhone revenue led to the 5% decline in topline. Services were a highlight driving revenue outside of iPhone to grow 19%, and in line with guidance at \$10.9B of revenue, an all-time high and on track towards achieving Apple's target of doubling the size of the business from 2016 to 2020. While Services revenue came in lower than our estimate of \$11.5B, this was offset by higher than estimated iPad revenue of \$6.7B versus our estimate of \$5.5B. Guidance for the March quarter at the mid-point of \$57B in revenue was above our estimate of \$56B while gross margin guidance at the mid-point of 37.5% was lower than our estimate of 38.2%, and operating expenses guidance of \$8.6M was higher than our estimate of \$8.3M. We believe Apple's ecosystem approach including an install base which now exceeds 1.4B devices globally is leading to record services revenue, and we expect the higher-margin services revenue growth to continue outpacing total company growth. Given the continued soft sales trends for the latest lineup of iPhones, we forecast a 12% year-over-year unit decline in C'19 iPhone sales and anticipate modest unit growth in C'20 based on an increasing installed base driving stable to slightly higher iPhone sales. We maintain our belief Apple can expand its leading market share of the premium-tier smartphone market and the more than 700M iPhone installed base (excluding refurbished iPhones, over 900M including refurbished iPhones) at the end of 2018 will grow to ~750M (excluding refurbished iPhones) exiting C2019. This impressive installed base should drive strong iPhone replacement sales and earnings, as well as cash flow generation to fund strong long-term capital returns. We maintain our BUY rating but decrease our \$190 price target to \$185 driven by our C'19/C'20 EPS estimates decreasing from \$12.44/\$13.46 to \$11.85/\$13.21.

Services revenue growth continues to impress driven by product ecosystem: Services reported another strong quarter growing 19% YoY. Services margin, which the company reported for the first time, was 63% and up strongly both sequentially and year-over-year. We believe Apple can sustain double digit Services revenue growth towards its target of doubling revenue from 2016 to 2020 and achieving over 500M subscribers by 2020, driven by growth from the App Store, strong subscriber growth in Apple Music, Apple Care, iTunes/iCloud and Apple Pay. In addition, we believe Apple is developing additional services around video including a streaming product that could lead to new areas of growth for this strong mix of recurring revenue products.

Slightly adjusting iPhone unit sales estimates: Based on the Q2/F'19 revenue guidance above our estimates, we are raising our iPhone estimates slightly for C'19. In addition to headwinds management mentioned around the US dollar strength, lower subsidy levels and the battery replacement program elongating the iPhone replacement cycle, our surveys also indicate muted demand for the iPhone XR. We adjust our C'19/C'20 iPhone unit sales estimates from 177M/191M units to 178M/190M units.

Updating estimates: Apple returned over \$13B in cash to investors in the quarter through dividends and share repurchases as it continues to execute on its plan towards a net cash neutral position. Based on the reported December quarter results and March quarter guidance, we are modestly adjusting our C'19/C'20 iPhone shipment estimates from 177M/191M to 178M/190M units and given the lower than expected gross margin and higher than expected operating expenses guidance, our C'19/C'20 EPS estimates decrease from \$12.44/\$13.46 to \$11.85/\$13.21.

Summary of Apple results versus our and consensus expectations: As shown in Figure 1 below, iPhone revenue of \$52M was in line with our and consensus estimates. Based on Q2/F'19 guidance, we anticipate Apple will sell 37M iPhones during the March quarter, slightly above our previous estimate of 35M units, and accordingly, we are adjusting our C'19/C'20 iPhone shipment estimates from 177M/191M to 178M/190M units. Services revenue came in below our estimate but was offset by higher than expected iPad revenue. Gross margin, operating margin and EPS were in line with our estimates.

Figure 1: Results versus StreetAccounts consensus

Q1/F2019	Apple Results	Canaccord Estimates	Beat/Miss VS. CGI	StreetAccounts Consensus	Beat / (Miss) VS. Consensus
iPhone Revenue	\$ 52.0	\$ 52.1	0%	\$ 52.4	-1%
iPad Revenue	\$ 6.7	\$ 5.5	18%	\$ 6.2	9%
Mac Revenue	\$ 7.4	\$ 7.3	1%	\$ 7.4	0%
Services Revenue	\$ 10.9	\$ 11.5	-6%	\$ 10.8	1%
Other Revenue	\$ 7.3	\$ 7.6	-4%	\$ 7.0	4%
GM	38.0%	38.0%	0%	38.0%	0%
OM	27.7%	27.6%	0%	28.4%	-2%
Revenue	\$ 84.3	\$ 84.0	0%	\$ 84.0	0%
EPS	\$ 4.18	\$ 4.16	1%	\$ 4.17	0%

Source: Company reports, Canaccord Genuity estimates, StreetAccounts consensus

Large installed iPhone base positions Apple for a strong upgrade cycle through C2020

Figure 2 provides our detailed analysis of the installed iPhone base, annual iPhone net additions, replacement iPhone sales, and replacement rates by different regions of the world. We estimate our 701M iPhone installed base of new iPhone users exiting C2018 represents only 44% of the 1.6B global premium market smartphone subscribers estimated by the end of C2018, according to Gartner. Based on our potentially conservative replacement rate and installed base growth assumptions, we estimate Apple could sell roughly 175M to 200M iPhone units annually based on its growing and loyal installed base of new iPhone consumers.

While we had anticipated a stronger upgrade cycle heading into 2019 from the new XS, XS Max and XR models, we believe the installed iPhone user base remains loyal and anticipate lower but stable replacements rates going forward to drive steady iPhone sales through C2020. Given the higher priced

iPhones and battery replacement program, we believe consumers are holding on to their iPhones longer, and model roughly 19-20% of the new iPhone user base (excludes refurbished sales) will upgrade to a new iPhone in 2019 and 2020.

While we anticipate product introductions could generate stronger sales in one year versus another, we believe Apple's growing share of the high-end smartphone market positions the company with a strong, loyal customer base that could enable Apple to maintain the high levels of annual iPhone sales despite the higher ASPs for the iPhone XS and XS Max. While we believe some investors will point to management's decision to stop disclosing iPhone, iPad, and Mac unit sales as evidence iPhone unit sales have peaked and the weak Q1/F'19 sales certainly support this view, we maintain our belief iPhone unit sales will fluctuate around 200M units annually based on the loyal installed base.

We believe Apple has a very loyal consumer base and anticipate steadily rising iPhone sales over time even with consumers waiting longer to upgrade iPhones. With Apple's ability to still generate over 175M iPhone sales per year with ASPs around \$800, we believe this will still drive a strong earnings base for Apple to monetize with additional hardware and services sales to its loyal ecosystem of customers. With a mature smartphone market, we believe Apple has locked up strong share of the premium tier market and will continue to dominate high-end smartphones sales and capture the vast majority of smartphone profits for the next several years. While the smartphone market is slowing to low single digits annual growth, Apple's dominant profits of the world's largest consumer electronics market is likely to continue. This combined with strong cash returns and a growing share of higher margin businesses in Services and Other Products lead us to reiterate our BUY rating. Based on our decreased EPS estimates driven by slightly lower margin assumptions however, we have decreased our target price from \$190 to \$185 accordingly.

Figure 2: iPhone installed base, net adds, replacement sales and replacement rates by region

	2013	2014	2015	2016	2017	2018 E	2019 E	2020 E
iPhone Sell-in unit estimates								
iPhone Units (sell-in)	153.5	192.7	231.5	215.4	215.8	203.4	177.8	190.3
iPhone sell-through estimates by region (millions)								
North America	50.9	65.9	71.7	72.1	73.3	75.2	64.5	68.9
Latin America	6.1	7.2	6.8	7.2	7.5	7.1	6.1	6.6
Europe	31.0	35.5	38.3	41.0	45.8	41.8	33.8	36.2
Greater China	25.6	50.1	72.4	54.2	47.9	43.9	41.7	44.7
Japan	12.0	14.8	14.4	14.9	15.0	15.7	12.8	13.8
Rest of Asia Pacific	20.9	10.0	16.0	16.0	16.4	13.9	12.5	13.3
Middle East & Africa	4.3	5.2	6.2	8.3	9.1	9.4	7.1	7.6
Total iPhone sell-through	150.8	188.6	225.9	213.7	214.9	207.0	178.5	191.0
iPhone Channel inventory change	2.7	4.1	4.8	0.8	-2.8	2.2	-0.3	-0.3
Total iPhone channel inventory	15.3	19.4	24.2	25.0	22.2	24.4	24.1	23.8
	2013	2014	2015	2016	2017	2018 E	2019 E	2020 E
iPhone installed base estimates (millions)								
North America	92.2	114.4	131.5	142.0	152.0	164.1	174.0	180.1
Latin America	9.8	13.9	18.4	21.2	24.2	27.1	29.1	31.3
Europe	78.9	96.3	113.6	123.9	132.5	141.8	147.5	153.4
Greater China	68.8	96.3	134.8	159.1	181.4	204.9	219.3	234.6
Japan	21.8	27.4	32.2	34.6	36.7	38.5	40.2	42.1
Rest of Asia Pacific	27.7	38.8	53.8	65.6	75.7	87.1	95.8	104.4
Middle East & Africa	10.1	15.0	21.4	27.7	32.7	37.6	41.4	45.5
Total	309.3	402.1	505.7	574.1	635.1	701.2	747.2	791.3
iPhone installed base Y/Y growth								
North America	33%	24%	15%	8%	7%	8%	6%	4%
Latin America	70%	42%	32%	16%	14%	12%	8%	8%
Europe	42%	22%	18%	9%	7%	7%	4%	4%
Greater China	100%	40%	40%	18%	14%	13%	7%	7%
Japan	57%	26%	17%	8%	6%	5%	5%	5%
Rest of Asia Pacific	39%	40%	39%	22%	15%	15%	10%	9%
Middle East & Africa	85%	48%	43%	29%	18%	15%	10%	10%
YoY % change	51%	30%	26%	14%	11%	10%	7%	6%
	2013	2014	2015	2016	2017	2018 E	2019 E	2020 E
iPhone net adds & replacement sales estimates (in millions):								
North America - net adds	22.9	22.2	17.2	10.5	9.9	12.2	9.8	6.1
North America - annual replacement sales	28.0	43.7	53.2	57.9	55.4	45.6	42.7	45.2
Latin America - net adds	4.0	4.1	4.4	2.8	3.0	2.9	2.0	2.2
Latin America -annual replacement sales	2.0	3.0	4.0	4.9	4.5	4.8	5.4	5.8
Europe - net adds	23.4	17.4	17.3	10.2	8.7	9.3	5.7	5.9
Europe - annual replacement sales	7.6	18.1	22.2	25.0	26.0	25.2	28.4	29.5
Japan - net adds	7.9	5.7	4.8	2.4	2.1	1.8	1.7	1.8
Japan - annual replacement sales	4.1	9.1	9.6	11.3	10.4	9.9	7.7	8.0
Asia Pacific - net adds	42.1	38.6	53.5	36.1	32.4	34.9	23.1	24.0
Asia Pacific - annual replacement sales	4.4	24.3	36.5	43.4	56.2	48.8	49.6	56.7
Middle East & Africa - net adds	4.7	4.9	6.4	6.3	5.0	4.9	3.8	4.1
Middle East & Africa - annual replacement	-0.3	0.3	0.8	1.1	1.5	1.3	1.9	2.1
Total iPhone Net adds	104.9	92.8	103.6	68.4	61.0	66.0	46.1	44.1
Total iPhone annual replacement	45.9	98.6	126.2	143.4	153.9	135.7	135.7	147.4
Total iPhone annual unit sell-thru	150.8	191.4	229.8	211.9	214.9	201.7	181.8	191.5
Change in inventory	2.7	1.3	1.7	3.5	0.8	1.7	-3.9	-1.1
Total iPhone unit sales	153.5	192.7	231.5	215.4	215.8	203.4	177.8	190.3
	2013	2014	2015	2016	2017	2018 E	2019 E	2020 E
Replacement rate (%)								
North America	40%	47%	47%	44%	39%	30%	26%	26%
Latin America	35%	31%	29%	27%	21%	20%	20%	20%
Europe	14%	23%	23%	22%	21%	19%	20%	20%
Japan	30%	42%	35%	35%	30%	27%	20%	20%
Asia Pacific	8%	25%	27%	23%	25%	19%	17%	18%
Middle East & Africa	-6%	3%	6%	5%	5%	4%	5%	5%
Global iPhone replacement rate	22.4%	31.9%	31.4%	28.4%	26.8%	21.4%	19.4%	19.7%

Source: Company reports, Canaccord Genuity estimates

Figure 3: Apple Income Statement

Apple Inc. - AAPL Consolidated Income Statement (in millions, except per share information)																			
Period Date	Q1-18 A 12/31/2017	Q2-18 A 3/31/2018	Q3-18 A 6/30/2018	Q4-18 A 9/30/2018	Q1-19 A 12/31/2018	Q2-19 E 3/31/2019	Q3-19 E 6/30/2019	Q4-19 E 9/30/2019	Q1-20 E 12/31/2019	Q2-20 E 3/31/2020	Q3-20 E 6/30/2020	Q4-20 E 9/30/2020	Q1-21 E 12/31/2020	FY-18 A 9/30/2018	FY-19 E 9/30/2019	FY-20 E 9/30/2020	CY-18 E 12/31/2018	CY-19 E 12/31/2019	CY-20 E 12/31/2020
Notes to Income Statement																			
Net Sales	88,293	61,137	53,265	62,900	84,310	56,848	52,735	59,823	86,774	61,891	56,433	61,120	89,109	265,595	253,715	266,218	261,611	256,180	268,552
Cost of Sales	54,381	37,715	32,844	38,816	52,279	35,530	32,696	37,090	53,106	38,088	34,410	37,257	53,643	163,756	157,595	162,861	161,654	158,422	163,398
Gross Profit	33,912	23,422	20,421	24,084	32,031	21,318	20,039	22,733	33,668	23,803	22,023	23,863	35,465	101,839	96,120	103,357	99,957	97,758	105,155
Research & Development	3,407	3,378	3,701	3,750	3,902	3,980	4,060	4,141	4,224	4,350	4,437	4,526	4,617	14,236	16,083	17,537	14,731	16,404	17,930
Selling, General and Administrative	4,231	4,150	4,108	4,216	4,783	4,568	4,431	4,564	4,929	4,584	4,950	5,346	5,774	16,705	18,345	19,809	17,257	18,491	20,655
Operating Expenses	7,638	7,528	7,809	7,966	8,685	8,548	8,490	8,704	9,152	8,934	9,388	9,873	10,391	30,941	34,428	37,347	31,988	34,895	38,585
Operating Income	26,274	15,894	12,612	16,118	23,346	12,770	11,549	14,028	24,515	14,869	12,635	13,991	25,074	70,898	61,693	66,010	67,969	62,863	66,569
Other income and expense	756	274	672	303	560	300	300	300	300	300	300	300	300	2,005	1,460	1,200	1,809	1,200	1,200
Pre-tax Income	27,030	16,168	13,284	16,421	23,906	13,070	11,849	14,328	24,815	15,169	12,935	14,291	25,374	72,903	63,153	67,210	68,423	64,063	67,769
Provision for income taxes	6,965	2,346	1,765	2,296	3,941	2,222	1,777	2,149	3,722	2,275	1,940	2,144	3,806	13,372	10,089	10,082	10,348	9,871	10,165
Net Income	20,065	13,822	11,519	14,125	19,965	10,848	10,072	12,179	21,093	12,894	10,995	12,147	21,568	59,531	53,063	57,129	59,430	54,192	57,604
GAAP EPS	3.89	2.73	2.34	2.91	4.18	2.31	2.18	2.68	4.69	2.90	2.50	2.79	5.02	11.87	11.35	12.88	12.16	11.85	13.21
Basic	5,113	5,025	4,882	4,802	4,736	4,661	4,586	4,511	4,461	4,411	4,361	4,311	4,261	4,955	4,623	4,386	4,861	4,555	4,336
Fully Diluted Shares	5,158	5,068	4,927	4,848	4,773	4,698	4,623	4,548	4,498	4,448	4,398	4,348	4,298	5,000	4,661	4,423	4,904	4,592	4,373
Costs as % Revenue:																			
Cost of Sales	61.6	61.7	61.7	61.7	62.0	62.5	62.0	62.0	61.2	61.5	61.0	61.0	60.2	61.7	62.1	61.2	61.8	61.8	60.8
Gross Profit	38.4	38.3	38.3	38.3	38.0	37.5	38.0	38.0	38.8	38.5	39.0	39.0	39.8	38.3	37.9	38.8	38.2	38.2	39.2
Research & Development	3.9	5.5	6.9	6.0	4.6	7.0	7.7	6.9	4.9	7.0	7.9	7.4	5.2	5.4	6.3	6.6	5.6	6.4	6.7
Selling, General and Administrative	4.8	6.8	7.7	6.7	5.7	8.0	8.4	7.6	5.7	7.4	8.8	8.7	6.5	6.3	7.2	7.4	6.6	7.2	7.7
Pro-forma operating margin	29.8	26.0	23.7	25.6	27.7	22.5	21.9	23.4	28.3	24.0	22.4	22.9	28.1	26.7	24.3	24.8	26.0	24.5	24.8
Provision for income taxes	7.9	3.8	3.3	3.7	4.7	3.9	3.4	3.6	4.3	3.7	3.4	3.5	4.3	5.0	4.0	3.8	4.0	3.9	3.8
Tax Rate	25.8	14.5	13.3	14.0	16.5	17.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	18.3	16.0	15.0	15.1	15.4	15.0
Net Income	22.7	22.6	21.6	22.5	23.7	19.1	19.1	20.4	24.3	20.8	19.5	19.9	24.2	22.4	20.9	21.5	22.7	21.2	21.4
Quarter/Quarter % change:																			
Sales	67.9%	-30.8%	-12.9%	18.1%	34.0%	-32.6%	-7.2%	13.4%	45.1%	-28.7%	-8.8%	8.3%	45.8%						
Operating Income	94.2%	-40.2%	-17.8%	23.6%	45.6%	-45.3%	-9.3%	20.9%	73.2%	-38.9%	-14.7%	10.5%	77.6%						
Year/Year % change:																			
Sales	12.7%	15.6%	17.3%	19.6%	-4.5%	-7.0%	-1.0%	-4.9%	2.9%	8.9%	7.0%	2.2%	2.7%	15.9%	-4.5%	4.9%	9.4%	-2.1%	4.8%
Pro-forma Operating Income	12.5%	12.7%	17.1%	22.9%	-11.1%	-19.7%	-8.4%	-13.0%	5.0%	16.4%	9.4%	-0.3%	2.3%	15.6%	-13.0%	7.0%	5.8%	-7.5%	5.9%
Pro-forma Net Income	12.2%	25.3%	32.1%	31.8%	-0.5%	-21.5%	-12.6%	-13.8%	5.7%	18.9%	9.2%	-0.3%	2.3%	23.1%	-10.9%	7.7%	17.6%	-8.8%	6.3%

For important information, please visit Canaccord Genuity's Online Disclosure Database: <https://canaccordgenuity.bluematrix.com/sellside/Disclosures.action>

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Source: Company reports and Canaccord Genuity estimates

Source: Company reports, Canaccord Genuity estimates. A more detailed financial model, including balance sheet, income statement, and cash flow projections, if available, may be obtained by contacting your Canaccord Genuity Sales Person or the Authoring Analyst, whose contact information appears on the front page of this report.

Figure 4: Apple sales by product category

	Apple Quarterly Sales by Product Category (in million USD)												Annual Sales By Product (in million USD)																			
	FY2018 A				FY2019 E				FY2020 E				FY2021E				FY18A	FY19E	FY20E	CY18E	CY19E	CY20E										
	12/31/2017	3/31/2018	6/30/2018	9/30/2018	12/31/2018	3/31/2019	6/30/2019	9/30/2019	12/31/2019	3/31/2020	6/30/2020	9/30/2020	12/31/2020	Q1-18 A	Q2-18 A	Q3-18 A	Q4-18 A	Q1-19 A	Q2-19 E	Q3-19 E	Q4-19 E	Q1-20 E	Q2-20 E	Q3-20 E	Q4-20 E	Q1-21 E	9/30/2018	9/30/2019	9/30/2020	12/31/2018	12/31/2019	12/31/2020
iPhone Units	77.32	52.22	41.30	46.89	63.00	37.00	33.50	40.20	67.13	43.64	37.96	42.14	66.58													217.72	173.70	190.88	203.41	177.83	190.32	
iPhone ASP (adjusting for deferral)	\$796	\$719	\$707	\$781	\$828	\$786	\$763	\$748	\$763	\$724	\$703	\$689	\$771													\$738	\$768	\$706	\$745	\$744	\$709	
iPhone ASP reported	\$790	\$719	\$714	\$784	\$825	\$795	\$773	\$752	\$757	\$726	\$707	\$691	\$765													\$757	\$792	\$725	#	\$766	\$767	\$728
Current Quarter iPhone Revenue	\$60,032	\$36,481	\$28,389	\$35,672	\$50,895	\$28,359	\$24,886	\$29,250	\$49,852	\$30,740	\$25,919	\$28,177	\$50,022													\$160,575	\$133,391	\$134,687	\$151,438	\$132,348	\$134,858	
Total iPhone Reported Revenue	\$61,104	\$37,559	\$29,470	\$36,755	\$51,982	\$29,407	\$25,900	\$30,245	\$50,830	\$31,693	\$26,850	\$29,101	\$50,934													\$4,313	\$4,142	\$3,787	\$4,327	\$4,035	\$3,720	
Q/Q Growth	112%	-39%	-22%	25%	41%	-43%	-12%	17%	68%	-38%	-15%	8%	75%													\$164,888	\$137,534	\$138,474	\$155,766	\$136,382	\$138,577	
Y/Y Growth	12%	13%	19%	27%	-15%	-22%	-12%	-18%	-2%	8%	4%	-4%	0%													17%	-17%	1%	5%	-12%	2%	
%age of Apple Revenue	69%	61%	55%	58%	62%	52%	49%	51%	59%	51%	48%	48%	57%													62%	54%	52%	60%	53%	52%	
iPad Units	13.17	9.11	11.55	9.70	15.00	10.05	10.35	10.77	16.15	10.82	11.14	11.14	16.72													43.54	46.17	49.26	45.37	47.32	49.82	
iPad ASP	\$437	\$440	\$401	\$411	\$454	\$431	\$431	\$431	\$410	\$410	\$410	\$410	\$410													\$422.19	\$438.01	\$415.67	\$426.63	\$430.29	\$408.67	
Current Quarter iPad Revenue	\$5,492	\$3,826	\$4,403	\$3,789	\$6,511	\$4,134	\$4,258	\$4,428	\$6,643	\$4,217	\$4,344	\$4,344	\$6,516													\$17,509	\$19,331	\$19,547	\$18,528	\$19,463	\$19,420	
Total iPad Reported Revenue	\$5,755	\$4,008	\$4,634	\$3,983	\$6,729	\$4,357	\$4,484	\$4,652	\$6,867	\$4,449	\$4,580	\$4,579	\$6,754													\$870	\$890	\$927	\$864	\$896	\$941	
Q/Q Growth	19%	-30%	16%	-14%	69%	-35%	3%	4%	48%	-35%	3%	0%	48%													\$18,380	\$20,221	\$20,474	\$19,354	\$20,359	\$20,361	
Y/Y Growth	4%	3%	-7%	-18%	17%	9%	-3%	17%	2%	2%	2%	-2%	-2%													-4%	10%	1%	0%	5%	0%	
%age of Apple Revenue	7%	7%	9%	6%	8%	8%	9%	8%	8%	7%	8%	7%	8%													7%	8%	8%	7%	8%	8%	
Mac Units	5.11	4.08	3.72	5.30	5.38	4.62	4.39	5.27	5.32	4.47	4.25	5.10	5.15													18.21	19.67	19.14	18.47	19.61	18.97	
Mac ASP	\$1,335	\$1,416	\$1,413	\$1,385	\$1,344	\$1,344	\$1,303	\$1,395	\$1,353	\$1,400	\$1,358	\$1,453	\$1,409													\$1,355	\$1,348	\$1,392	\$1,390	\$1,349	\$1,405	
Current Quarter Mac Revenue	\$6,619.52	\$5,613	\$5,109	\$7,340	\$7,224	\$6,213	\$5,725	\$7,351	\$7,202	\$6,261	\$5,770	\$7,408	\$7,258													\$24,682	\$26,514	\$26,642	\$25,287	\$26,492	\$26,697	
Total Mac Reported Revenue	\$6,824	\$5,776	\$5,258	\$7,340	\$7,416	\$6,404	\$5,916	\$7,541	\$7,391	\$6,450	\$5,960	\$7,599	\$7,449													\$738	\$764	\$758	\$771	\$761	\$760	
Q/Q Growth	-5%	-15%	-9%	40%	1%	-14%	-8%	27%	-2%	-13%	-8%	27%	-2%													\$25,198	\$27,278	\$27,400	\$25,790	\$27,253	\$27,457	
Y/Y Growth	-6%	-1%	-6%	2%	9%	11%	13%	3%	0%	1%	1%	1%	1%												-3%	8%	0%	1%	6%	1%		
%age of Apple Revenue	8%	9%	10%	12%	9%	11%	11%	13%	9%	10%	11%	12%	8%												9%	11%	10%	10%	11%	10%		
iPod Revenue	\$42	\$5	\$5	\$4	\$3	\$2	\$0												\$56	\$5	\$0	\$17	\$2	\$0								
Apple watch units	8.00	5.50	5.64	5.70	11.40	8.55	8.81	9.16	15.57	10.90	11.23	11.67	19.85													24.84	37.92	49.37	28.24	42.09	53.65	
Apple watch ASPs	\$444	\$435	\$427	\$450	\$460	\$437	\$405	\$405	\$415	\$394	\$364	\$364	\$373													\$419	\$409	\$367	\$427	\$395	\$354	
Current Quarter Watch Revenue	\$3,391	\$2,282	\$2,293	\$2,451	\$5,020	\$3,568	\$3,386	\$3,522	\$6,145	\$4,075	\$3,866	\$4,020	\$7,016												\$10,416	\$15,496	\$18,106	\$12,046	\$16,621	\$18,977		
Prior Period Watch Deferred Revenue																									\$298	\$490	\$725	\$335	\$548	\$607		
Total Watch Reported Revenue	\$3,452	\$2,351	\$2,371	\$2,540	\$5,119	\$3,685	\$3,517	\$3,666	\$6,301	\$4,251	\$4,055	\$4,224	\$7,234												\$10,714	\$15,986	\$18,831	\$12,381	\$17,169	\$19,764		
Q/Q Growth	111%	-32%	1%	7%	102%	-28%	-5%	4%	72%	-33%	-5%	4%	71%													73%	49%	18%	61%	39%	15%	
Y/Y Growth	77%	76%	86%	55%	48%	57%	48%	44%	23%	15%	15%	15%	15%													4%	6%	7%	5%	7%	7%	
%age of Apple Revenue	4%	4%	4%	4%	6%	6%	7%	6%	7%	7%	7%	7%	8%																			
Accessories	\$1,987	\$1,587	\$1,357	\$1,679	\$2,186	\$1,683	\$1,438	\$1,780	\$2,252	\$1,784	\$1,525	\$1,887	\$2,319													\$6,611	\$7,087	\$7,447	\$6,810	\$7,153	\$7,514	
Total Other Products	\$5,481	\$3,944	\$3,733	\$4,223	\$7,308	\$5,370	\$4,955	\$5,446	\$8,553	\$6,035	\$5,580	\$6,110	\$9,553													\$17,381	\$23,079	\$26,278	\$19,208	\$24,324	\$27,278	
Services	\$9,129	\$9,850	\$10,170	\$10,599	\$10,875	\$11,310	\$11,480	\$11,939	\$13,133	\$13,264	\$13,463	\$13,732	\$14,419													\$39,748	\$45,603	\$53,592	\$41,494	\$47,861	\$54,878	
Deferred Revenue	\$1,519	\$1,562	\$1,571	\$1,584	\$1,598	\$1,581	\$1,561	\$1,552	\$1,549	\$1,550	\$1,547	\$1,552	\$1,559													\$6,237	\$6,292	\$6,197	\$6,315	\$6,242	\$6,207	
Total Apple Revenue	\$88,293	\$61,137	\$53,265	\$62,900	\$84,310	\$56,848	\$52,735	\$59,823	\$86,774	\$61,891	\$56,433	\$61,120	\$89,109													\$265,595	\$253,715	\$266,218	\$261,611	\$256,180	\$268,552	

Source: Company reports, Canaccord Genuity estimates

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Investment Recommendation

Date and time of first dissemination: January 29, 2019, 23:06 ET

Date and time of production: January 29, 2019, 22:36 ET

Target Price / Valuation Methodology:

Apple - AAPL

Our \$185 price target is based on shares trading at roughly 14x our C2020 EPS estimate.

Risks to achieving Target Price / Valuation:

Apple - AAPL

Risks to our investment thesis include: 1. Gross margin for key products such as the iPhone decline below our expectations. 2. Ability to innovate slows or competition catches up versus Apple's next iteration of its products. 3. Macro uncertainty leads to slower than expected sales of Apple products.

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Global Stock Ratings (as of 01/29/19)

Rating	Coverage Universe		IB Clients %
	#	%	
Buy	560	62.71%	47.50%
Hold	200	22.40%	30.00%
Sell	12	1.34%	25.00%
Speculative Buy	121	13.55%	68.60%
	893*	100.0%	

*Total includes stocks that are Under Review

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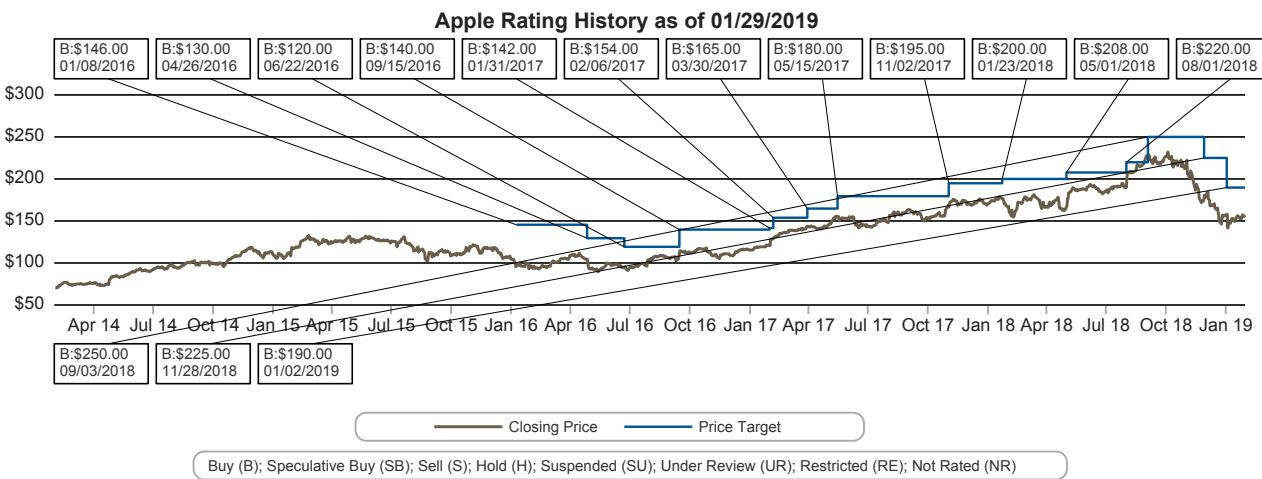
12-Month Recommendation History (as of date same as the Global Stock Ratings table)

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Apple (AAPL US)

Hold: First bite after the Q1 results call

EQUITIES
COMPUTERS &
PERIPHERALS

United States

- Q1 uneventful post warning, Q2 guidance below consensus
- Company details gross margin split and iPhone installed base
- Relief reaction after the close, but doubts about growth drivers could continue to weigh; maintain Hold rating and USD160 TP

Q1 uneventful, Q2 guidance low: With Apple warning on 2 January, Q1 results were not going to be a big surprise, with sales and results as guided. All in, Apple delivered EPS of USD4.18 (consensus USD4.17). All product lines were up year-on-year in Q1, except for iPhone (down 15%, and still 62% of group sales), and apart from the Americas and "Rest of Asia Pacific" regions, all other regions were also down year-on-year in reported terms, with China's slowdown (-27%) well flagged in the January warning. As headwinds remain, Apple's Q2 guidance looks muted. The company guides for revenues of USD55bn-USD59bn (versus HSBC USD60.4bn and consensus USD58.9bn), gross margin of 37% to 38% (versus HSBC and consensus 38.2%) and operating expenses of USD8.5bn to USD8.6bn (versus HSBC USD7.5bn and consensus USD8.0bn).

Will the company manage to shift attention to services? As expected and announced last quarter, Apple has stopped disclosing units for its hardware businesses. However, the company now discloses the gross margins for products and services respectively. As expected, the services gross margin was significantly higher than that of products (62.8% vs 34.3% for products in Q1), but also higher than we have in mind for the year (57.6%), implying that while services only accounted for c13% of Q1 sales, they made up c21% of Q1 gross profit. Of course, this is relevant as services are meant to sustainably outperform products in terms of top-line contribution. The services gross margin was up 450bps yoy and 170bps from the previous quarter as growth (operating leverage) and mix (accretive App Store) helped.

From the call: Apple is willing to take into account issues of positioning in emerging markets by no longer referencing USD prices, acknowledging that, with subsidies less common and battery replacement extending iPhone life, there are fewer upgrades. Apple also now discloses the installed base (900m iPhones, up 75m in 12 months, and total active devices at 1.4bn, up 100m in 12 months). This is above our 700m estimate, which is positive, but also points to a much lengthier renewal cycle, which is negative. Also, the company is targeting to exceed 500m paid subscriptions during 2020, from 360m today.

Shares are up 5%+ after market as we believe: a) short covering may be occurring; b) some in the market may look through current China issues; and/or c) the disclosure of services margin and of the iPhone installed base may have reassured. As we pointed out in our December 2018 downgrade ([Brave New World](#), 3 December 2018) and subsequent TP cut ([China bites even more](#), 8 January 2019), Apple does not look particularly expensive here, but current trading, especially in emerging markets, looks bound to continue being tough.



TARGET PRICE (USD)

160.00

PREVIOUS TARGET (USD)

160.00

SHARE PRICE (USD)

154.68

UPSIDE/DOWNSIDE

+3.4%

(as of 29 Jan 2019)

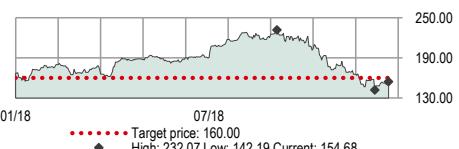
MARKET DATA

Market cap (USDm)	734,018	Free float	91%
Market cap (USDm)	734,018	BBG	AAPL US
3m ADTV (USDm)	15,101	RIC	AAPL.O

FINANCIALS AND RATIOS (USD)

Year to	09/2018a	09/2019e	09/2020e	09/2021e
HSBC EPS	11.91	12.67	14.48	16.52
HSBC EPS (prev)	-	-	-	-
Change (%)	-	-	-	-
Consensus EPS	11.79	11.94	13.34	14.85
PE (x)	13.0	12.2	10.7	9.4
Dividend yield (%)	1.8	2.0	2.4	2.7
EV/EBITDA (x)	5.2	5.5	5.3	5.3
ROE (%)	49.4	56.9	68.2	90.6

52-WEEK PRICE (USD)



Source: Refinitiv IBES, HSBC estimates

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Financials & valuation: Apple**Hold****Financial statements**

Year to	09/2018a	09/2019e	09/2020e	09/2021e
Profit & loss summary (USDm)				
Revenue	265,595	264,564	276,243	285,926
EBITDA	81,801	80,268	86,606	89,981
Depreciation & amortisation	-10,903	-11,860	-14,682	-14,646
Operating profit/EBIT	70,898	68,409	71,925	75,335
Net interest	2,005	2,200	2,200	2,200
PBT	72,903	70,609	74,125	77,535
HSBC PBT	72,903	70,609	74,125	77,535
Taxation	-13,372	-11,650	-12,231	-12,793
Net profit	59,531	58,958	61,894	64,742
HSBC net profit	59,531	58,958	61,894	64,742
Cash flow summary (USDm)				
Cash flow from operations	77,434	72,111	80,747	85,046
Capex	-13,313	-13,345	-13,953	-14,437
Cash flow from investment	16,066	-5,629	3,554	5,620
Dividends	-13,712	-14,698	-15,589	-16,443
Change in net debt	30,598	12,681	19,229	19,888
FCF equity	91,815	53,412	61,215	64,835
Balance sheet summary (USDm)				
Intangible fixed assets	8,038	8,038	8,038	8,038
Tangible fixed assets	41,304	42,789	42,061	41,851
Current assets	131,339	116,075	95,801	76,508
Cash & others	66,301	53,620	34,391	14,503
Total assets	365,725	351,945	330,944	311,441
Operating liabilities	144,095	137,451	134,999	135,478
Gross debt	114,483	114,483	114,483	114,483
Net debt	-122,617	-109,936	-90,707	-70,819
Shareholders' funds	107,147	100,012	81,462	61,481
Invested capital	155,329	160,875	161,554	161,461

Ratio, growth and per share analysis

Year to	09/2018a	09/2019e	09/2020e	09/2021e
Y-o-y % change				
Revenue	15.9	-0.4	4.4	3.5
EBITDA	14.4	-1.9	7.9	3.9
Operating profit	15.6	-3.5	5.1	4.7
PBT	13.8	-3.1	5.0	4.6
HSBC EPS	29.3	6.5	14.2	14.1
Ratios (%)				
Revenue/IC (x)	1.6	1.7	1.7	1.8
ROIC	35.0	36.1	37.3	38.9
ROE	49.4	56.9	68.2	90.6
ROA	15.6	15.9	17.6	19.6
EBITDA margin	30.8	30.3	31.4	31.5
Operating profit margin	26.7	25.9	26.0	26.3
EBITDA/net interest (x)				
Net debt/equity	-114.4	-109.9	-111.3	-115.2
Net debt/EBITDA (x)	-1.5	-1.4	-1.0	-0.8
CF from operations/net debt				
Per share data (USD)				
EPS Rep (diluted)	11.91	12.67	14.48	16.52
HSBC EPS (diluted)	11.91	12.67	14.48	16.52
DPS	2.72	3.16	3.65	4.20
Book value	21.62	21.71	19.24	15.84

Key forecast drivers

Year to	09/2018a	09/2019e	09/2020e	09/2021e
Products revenues (USDm)	228,405	220,015	224,960	228,896
Services revenues (USDm)	37,190	44,549	51,283	57,030
Group revenue	265,595	264,564	276,243	285,926
Gross margins (%)	38	38	38	39
Net cash (including LT marketable securities)	122,617	109,936	90,707	70,819

Valuation data

Year to	09/2018a	09/2019e	09/2020e	09/2021e
EV/sales	1.6	1.7	1.7	1.7
EV/EBITDA	5.2	5.5	5.3	5.3
EV/IC	2.7	2.7	2.8	3.0
PE*	13.0	12.2	10.7	9.4
PB	7.2	7.1	8.0	9.8
FCF yield (%)	16.7	9.7	11.2	11.8
Dividend yield (%)	1.8	2.0	2.4	2.7

* Based on HSBC EPS (diluted)

ESG metrics

Environmental Indicators	09/2017a	Governance Indicators	09/2018a
GHG emission intensity*	4.0	No. of board members	8
Energy intensity*	1.6	Average board tenure (years)	8.0
CO ₂ reduction policy	Yes	Female board members (%)	12.5
Social Indicators	09/2017a	Board members independence (%)	75
Employee costs as % of revenues	n/a		
Employee turnover (%)	n/a		
Diversity policy	Yes		

Source: Company data, HSBC

* GHG intensity and energy intensity are measured in kg and kWh respectively against revenue in USD '000s

Issuer information

Share price (USD)	154.68	Free float	91%
Target price (USD)	160.00	Sector	Computers & Peripherals
RIC (Equity)	AAPL.O	Country	United States
Bloomberg (Equity)	AAPL US	Analyst	Erwan Rambourg
Market cap (USDm)	734,018	Contact	+1 212 525 8393

Price relative

Source: HSBC

Note: Priced at close of 29 Jan 2019

Valuation and risks

	Valuation	Risks to our view
Apple AAPL US	<p>Current price: USD154.68</p> <p>Target price: USD160.00</p>	<p>We value Apple on a DCF basis. We continue to assume a risk-free rate of 3.0%, equity risk premium of 3.0%, and sector beta of 2.0 (unlevered sector beta of 1.58 and a specific beta of c1.7; both unchanged). All in, we use a WACC of 10.9% in our DCF model.</p> <p>Our DCF-derived target price of USD160 implies c3% upside and we retain our Hold rating given the limited upside coupled with our cautious view on overall growth, lack of immediate catalysts, the overhang from trade/tariff-related issues, and slowdown in the Chinese economy.</p>
Hold	<p>Up/downside: 3%</p>	<p>Upside risks include: 1) FX tailwinds and notably a weakening of the USD relative to EUR and RMB; 2) a comprehensive and positive resolution to the current US-China trade tensions that removes the overhang stemming from the possibility of import tariffs on Apple goods produced in China; 3) a significant development (organic or via M&A) in the services business, which would imply much greater margin expansion potential than what we have embedded so far; 4) much greater inelasticity to iPhone prices, implying a short-term strong sales beat for the current fiscal year; 5) the announcement of agreements for better production and distribution in India.</p> <p>Downside risks include: 1) FX: a further strengthening of the USD, notably against the EUR and RMB; 2) potential manufacturing hiccups and weaker product mix impacting ASP/margins; 3) intense competition in China and emerging markets leading to Apple losing relevance and market share in growth markets; 4) IP protection and legal resolutions regarding patent infringement cases (e.g. with Qualcomm); 5) changes in tax legislation around the globe; 6) material lengthening of replacement cycles or loss of market share to competition in developed markets.</p>

Priced at 28 Jan 2019

Source: Bloomberg, HSBC estimates

Disclosure appendix

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The target price is based on the analyst's assessment of the stock's actual current value, although we expect it to take six to 12 months for the market price to reflect this. When the target price is more than 20% above the current share price, the stock will be classified as a Buy; when it is between 5% and 20% above the current share price, the stock may be classified as a Buy or a Hold; when it is between 5% below and 5% above the current share price, the stock will be classified as a Hold; when it is between 5% and 20% below the current share price, the stock may be classified as a Hold or a Reduce; and when it is more than 20% below the current share price, the stock will be classified as a Reduce.

Our ratings are re-calibrated against these bands at the time of any 'material change' (initiation or resumption of coverage, change in target price or estimates).

Upside/Downside is the percentage difference between the target price and the share price.

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For each stock we set a required rate of return calculated from the cost of equity for that stock's domestic or, as appropriate, regional market established by our strategy team. The target price for a stock represented the value the analyst expected the stock to reach over our performance horizon. The performance horizon was 12 months. For a stock to be classified as Overweight, the potential return, which equals the percentage difference between the current share price and the target price, including the forecast dividend yield when indicated, had to exceed the required return by at least 5 percentage points over the succeeding 12 months (or 10 percentage points for a stock classified as Volatile*). For a stock to be classified as Underweight, the stock was expected to underperform its required return by at least 5 percentage points over the succeeding 12 months (or 10 percentage points for a stock classified as Volatile*). Stocks between these bands were classified as Neutral.

*A stock was classified as volatile if its historical volatility had exceeded 40%, if the stock had been listed for less than 12 months (unless it was in an industry or sector where volatility is low) or if the analyst expected significant volatility. However, stocks which we did not consider volatile may in fact also have behaved in such a way. Historical volatility was defined as the past month's average of the daily 365-day moving average volatilities. In order to avoid misleadingly frequent changes in rating, however, volatility had to move 2.5 percentage points past the 40% benchmark in either direction for a stock's status to change.

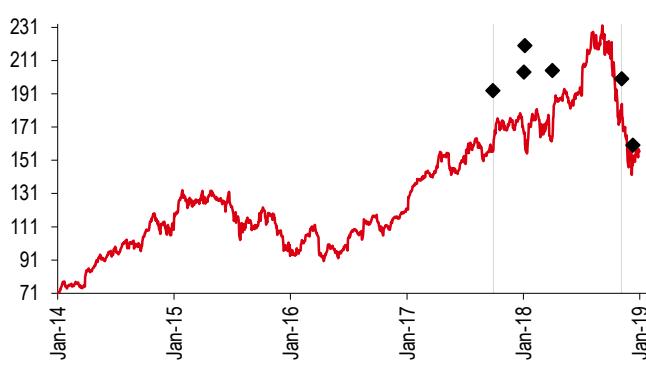
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Hold	34%	(31% of these provided with Investment Banking Services)
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For the purposes of the distribution above the following mapping structure is used during the transition from the previous to current rating models: under our previous model, Overweight = Buy, Neutral = Hold and Underweight = Sell; under our current model Buy = Buy, Hold = Hold and Reduce = Sell. For rating definitions under both models, please see "Stock ratings and basis for financial analysis" above.

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Share price and rating changes for long-term investment opportunities**Apple (AAPL.O) share price performance USD Vs HSBC rating history****Rating & target price history**

From	To	Date	Analyst
N/A	Buy	25 Oct 2017	Steven Pelayo
Buy	Hold	03 Dec 2018	Erwan Rambourg
Target price	Value	Date	Analyst
Price 1	193.00	25 Oct 2017	Steven Pelayo
Price 2	204.00	30 Jan 2018	Steven Pelayo
Price 3	220.00	02 Feb 2018	Steven Pelayo
Price 4	205.00	30 Apr 2018	Steven Pelayo
Price 5	200.00	03 Dec 2018	Erwan Rambourg
Price 6	160.00	08 Jan 2019	Erwan Rambourg

Source: HSBC

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Company	Ticker	Recent price	Price date	Disclosure
APPLE	AAPL.O	156.30	28 Jan 2019	5, 6, 7

- Source: HSBC
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