

What's the playbook for 2018? A bull and bear perspective; Raising PO to \$220

Reiterate Rating: BUY | PO: 220.00 USD | Price: 176.19 USD

Equity | 17 January 2018

After a strong 2017, will 2018 be as attractive?

Apple shares rallied 46% in 2017 vs SPX of 19%. In 2018, we remain bullish on potential for cash repatriation, lower tax rates, and the potential for positive estimate revisions heading into 2019 (ASP/Gross Margins/mix tailwinds). A smoother iPhone cycle (no boom-bust) should drive increased stability in earnings, commanding a higher multiple. We raise our PO to \$220 on higher services mix offset by some shifts in iPhone timing.

Biggest cash repatriation benefit; Bull view

We view 2018 as a year that could witness the largest cash repatriation with Apple potentially repatriating \$240bn. Bulls focus on (1) Using cash for M&A, buybacks or dividend increases; (2) A smoother iPhone cycle with two years of unit and ASP growth; (3) Upside to gross margins as iPhone ASP, Services mix, commodity pricing are tailwinds; (4) Continued strong growth in Services; (5) A larger OLED (organic light-emitting diode) phone in 2018 with rear 3-D sensing that broadens the product line further; (6) increased adoption of AR/VR driving Apple's lead further; and (7) HomePod, increased content, innovation around autonomous and AI.

Cycle peak is the crux of bear argument

Bears expect pressure on shares driven by (1) Decelerating mix of iPhone X as higher ASP creates demand headwinds post initial launch uptake; (2) gains at the lower end of the portfolio create less mix-adjusted ASP uplift than prior assumptions; (3) Demand for iPhone X likely to roll over earlier relative to iPhone 6 cycle; (4) China demand for iPhone X likely weaker beyond initial ramp given higher ASP; (5) Significant positive revisions in the last 12 months reflect run-up in shares and there is higher risk to negative revisions as 2018 iPhone is likely incremental; (6) A potential flexible OLED phone from Samsung in 2018 can create share headwinds; and (7) potential backlash on iPhone slowdowns.

PO moves to \$220; cyclical risk offset by many positives

Our PO of \$220 (prior \$180) is based on 16x (prior 15x) C19E EPS of \$13.49 (vs prior C18E EPS of \$11.91). We take a longer-term look at earnings potential and move to a C19 based valuation. Ex cash, the stock trades at just 10x, which we view as an attractive valuation given optionality to enter new markets and a strong cash return program.

Estimates (Sep)

(US\$)	2016A	2017A	2018E	2019E	2020E
EPS	8.31	9.21	11.25	13.34	13.79
GAAP EPS	8.36	9.21	11.25	13.34	13.79
EPS Change (YoY)	-9.9%	10.8%	22.1%	18.6%	3.4%
Consensus EPS (Bloomberg)			11.48	12.21	12.55
DPS	2.19	2.39	2.64	2.90	3.19

Valuation (Sep)

	2016A	2017A	2018E	2019E	2020E
P/E	21.2x	19.1x	15.7x	13.2x	12.8x
GAAP P/E	21.1x	19.1x	15.7x	13.2x	12.8x
Dividend Yield	1.2%	1.4%	1.5%	1.6%	1.8%
EV / EBITDA*	14.9x	14.6x	12.1x	10.9x	10.6x
Free Cash Flow Yield*	5.2%	5.0%	5.3%	6.6%	6.7%

* For full definitions of *IQmethod*SM measures, see page 25.

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Refer to important disclosures on page 26 to 28. Analyst Certification on page 24. Price Objective Basis/Risk on page 24.

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Timestamp: 17 January 2018 06:00AM EST

Key Changes

(US\$)	Previous	Current
Price Obj.	180.00	220.00
2018E Rev (m)	288,068.3	279,030.6
2019E Rev (m)	332,042.0	323,011.6
2020E Rev (m)	335,096.6	333,964.7
2018E EPS	11.60	11.25
2019E EPS	13.26	13.34
2020E EPS	13.53	13.79

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Stock Data

Price	176.19 USD
Price Objective	220.00 USD
Date Established	17-Jan-2018
Investment Opinion	B-1-7
52-Week Range	118.22 USD - 179.39 USD
Mkt Val (mn) / Shares Out (mn)	1,020,681 USD / 5,793.1
Average Daily Value (mn)	4604.89 USD
BofAML Ticker / Exchange	AAPL / NAS
Bloomberg / Reuters	AAPL US / AAPL.OQ
ROE (2018E)	34.7%
Net Dbt to Eqty (Sep-2017A)	71.2%

iQmethodSM – Bus Performance*

(US\$ Millions)	2016A	2017A	2018E	2019E	2020E
Return on Capital Employed	20.9%	19.1%	19.2%	18.7%	16.1%
Return on Equity	36.9%	36.9%	34.7%	29.2%	23.1%
Operating Margin	29.8%	28.9%	28.5%	28.0%	26.9%
Free Cash Flow	53,090	51,147	53,742	67,119	68,172

iQmethodSM – Quality of Earnings*

(US\$ Millions)	2016A	2017A	2018E	2019E	2020E
Cash Realization Ratio	1.4x	1.3x	1.2x	1.3x	1.3x
Asset Replacement Ratio	1.2x	1.2x	1.3x	1.5x	1.2x
Tax Rate	25.6%	24.5%	25.5%	25.5%	25.5%
Net Debt-to-Equity Ratio	51.9%	71.2%	25.2%	0%	-16.0%
Interest Cover	NM	NM	NM	NM	NM

Income Statement Data (Sep)

(US\$ Millions)	2016A	2017A	2018E	2019E	2020E
Sales	215,639	229,234	279,031	323,012	333,965
% Change	-7.7%	6.3%	21.7%	15.8%	3.4%
Gross Profit	85,032	89,063	108,931	125,322	127,052
% Change	-9.7%	4.7%	22.3%	15.0%	1.4%
EBITDA	74,739	76,341	91,767	102,502	105,006
% Change	-13.2%	2.1%	20.2%	11.7%	2.4%
Net Interest & Other Income	1,348	2,745	1,850	2,103	2,378
Net Income (Adjusted)	45,687	48,351	56,906	64,799	64,241
% Change	-14.4%	5.8%	17.7%	13.9%	-0.9%

Free Cash Flow Data (Sep)

(US\$ Millions)	2016A	2017A	2018E	2019E	2020E
Net Income from Cont Operations (GAAP)	49,114	52,018	60,717	68,923	68,678
Depreciation & Amortization	10,505	10,157	12,118	12,091	15,199
Change in Working Capital	484	(5,550)	(9,910)	(2,320)	(3,613)
Deferred Taxation Charge	4,938	5,966	4,808	4,808	4,808
Other Adjustments, Net	783	1,007	1,305	1,412	1,519
Capital Expenditure	(12,734)	(12,451)	(15,296)	(17,795)	(18,419)
Free Cash Flow	53,090	51,147	53,742	67,119	68,172
% Change	-24.2%	-3.7%	5.1%	24.9%	1.6%

Balance Sheet Data (Sep)

(US\$ Millions)	2016A	2017A	2018E	2019E	2020E
Cash & Equivalents	20,484	20,289	58,434	107,202	156,252
Trade Receivables	15,754	17,874	22,913	29,658	32,956
Other Current Assets	70,631	90,482	92,072	93,499	94,253
Property, Plant & Equipment	27,010	33,783	52,565	75,579	101,286
Other Non-Current Assets	187,807	212,891	197,385	180,175	157,788
Total Assets	321,686	375,319	423,369	486,112	542,535
Short-Term Debt	11,605	18,473	10,000	10,000	10,000
Other Current Liabilities	67,401	82,341	79,115	84,999	85,507
Long-Term Debt	75,427	97,207	97,207	97,207	97,207
Other Non-Current Liabilities	39,004	43,251	43,294	43,361	43,393
Total Liabilities	193,437	241,272	229,616	235,568	236,107
Total Equity	128,249	134,047	193,753	250,545	306,428
Total Equity & Liabilities	321,686	375,319	423,369	486,112	542,535

* For full definitions of iQmethodSM measures, see page 25.

Company Sector

IT Hardware

Company Description

Apple Inc. (AAPL) designs, manufactures, and markets consumer electronics and computers, and has developed its own proprietary iOS and Mac OS X operating systems and related software platform/ecosystem. Revenues are principally derived from the iPhone line of smartphones, hardware sales of the Macintosh family of notebook and desktop computers, iPad tablets, and iPod portable digital music players. The company also realizes revenue from software, peripherals, digital media, and services.

Investment Rationale

We rate Apple a Buy on potential upside from 1) Continued long-term opportunity in China, 2) potential share gains from the release of a lower-end iPhone, 3) strength of the iPhone 8/X cycle, 4) optionality in cash balance, revenue sources like Apple Pay, Apple Watch, home/health kit, etc., that will take time to mature.

Stock Data

Average Daily Volume	26,135,906
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Quarterly Earnings Estimates

	2017	2018
Q1	3.36A	3.88E
Q2	2.10A	2.64E
Q3	1.67A	2.05E
Q4	2.07A	2.67E

The playbook for 2018

We view 2018 as a year that could witness the largest cash repatriation with Apple alone potentially repatriating \$240bn. Bulls are looking for: (1) Using cash for M&A, buybacks or dividend increases; (2) A smoother iPhone cycle with two years of unit and ASP increases; (3) Upside to gross margins as iPhone ASP, Services mix, commodity pricing provide tailwinds; (4) Continued strong growth in Services; (5) A larger OLED phone in 2018 with rear 3-D sensing that broadens the product line further; (6) An increased adoption of AR/VR driving Apple's lead further; and (7) Introduction of HomePod, increased content, innovation around autonomous and AI.

In our opinion, these will outweigh the bear case risks of: (1) Decelerating mix of iPhone X as higher ASP creates demand headwinds post initial launch uptake; (2) gains at the lower end of the portfolio (iPhone 7, 6S) create less mix-adjusted ASP uplift than prior assumptions; (3) Demand for iPhone X likely to roll over earlier relative to iPhone 6 cycle; (4) China demand for iPhone X likely weaker beyond initial ramp given ASP materially higher; (5) Significant positive revisions in the last 12 months reflect run up in shares and there is higher risk to negative revisions as 2018 iPhone likely incremental; (6) A potential flexible OLED phone from Samsung in 2018 can create share headwinds; and (7) potential backlash on iPhone slowdowns.

Summary of estimate changes

Figure 1 and Figure 2 show our unit estimate changes by year and quarter, respectively.

Figure 1: BofAML unit, revenue and EPS estimate change (Before vs. After)

Units (K)	Old Estimates				New Estimates			
	F16	F17	F18	F19	F16	F17	F18	F19
iPhone	211,884	216,756	230,000	256,000	211,884	216,756	228,000	257,000
iPad	45,590	43,753	42,440	42,440	45,590	43,753	42,440	42,440
Mac	18,484	19,251	19,829	20,423	18,484	19,251	19,829	20,423
iPod	6,372	5,098	4,078	3,263	6,372	5,098	4,078	3,263
Apple Watch	10,500	14,000	26,200	36,680	10,500	14,000	26,200	36,680

ASP (\$)	Old Estimates				New Estimates			
	F16	F17	F18	F19	F16	F17	F18	F19
iPhone	\$645	\$652	\$828	\$874	\$645	\$652	\$795	\$832
iPad	\$452	\$439	\$431	\$422	\$452	\$439	\$431	\$422
Mac	\$1,235	\$1,343	\$1,329	\$1,316	\$1,235	\$1,343	\$1,329	\$1,316
iPod	\$155	\$151	\$148	\$145	\$155	\$151	\$148	\$145
Apple Watch	\$451	\$446	\$401	\$401	\$451	\$446	\$401	\$401

Revenue (\$)	Old Estimates				New Estimates			
	F16	F17	F18	F19	F16	F17	F18	F19
iPhone rev (\$mn)	\$136,700	\$141,319	\$190,420	\$223,717	\$136,700	\$141,319	\$181,247	\$213,826
iPad rev (\$mn)	\$20,628	\$19,222	\$18,275	\$17,930	\$20,628	\$19,222	\$18,275	\$17,930
Mac rev (\$mn)	\$22,831	\$25,850	\$26,361	\$26,872	\$22,831	\$25,850	\$26,361	\$26,872
Watch (\$mn)	\$4,733	\$6,250	\$10,499	\$14,699	\$4,733	\$6,250	\$10,499	\$14,699
Services rev (\$mn)	\$24,348	\$29,980	\$35,719	\$41,791	\$24,348	\$29,980	\$35,719	\$42,506
Other rev, ex-Watch (\$mn)	\$6,399	\$6,613	\$6,794	\$7,032	\$6,399	\$6,613	\$6,929	\$7,179
Total Apple Revenue (\$mn)	\$215,639	\$229,234	\$288,068	\$332,042	\$215,639	\$229,234	\$279,031	\$323,012
Total Apple EPS	\$8.31	\$9.21	\$11.60	\$13.26	\$8.31	\$9.21	\$11.25	\$13.34

	Old Estimates				New Estimates			
	F16	F17	F18	F19	F16	F17	F18	F19
Revenue (\$bn)	\$215.6	\$229.2	\$288.1	\$332.0	\$215.6	\$229.2	\$279.0	\$323.0
Gross Margin (%)	39.1%	38.5%	38.7%	37.9%	39.1%	38.5%	38.7%	38.5%
EPS	\$8.31	\$9.21	\$11.60	\$13.26	\$8.31	\$9.21	\$11.25	\$13.34

Source: Company reports, BofA Merrill Lynch Global Research estimates

Our iPhone unit forecast for F18 reduces by modest 2mn units from 230mn to 228mn, and F19 units decline 1mn units from 256mn to 257mn. The more near-term change is a stronger Dec quarter and a weaker Mar quarter. For F1Q18 (Dec 2017 quarter) we increase our iPhone estimates to 77mn units (from prior 74mn), wherein our iPhone X forecast moves to 33mn from prior 30mn. A more significant change occurs in the Mar quarter (F2Q18) for which our total iPhone units decline 2mn overall (from 59mn to 57mn). However, within this, we reduce our iPhone X forecast by 10mn units (from

35mn to 25mn) and increase our estimate for older iPhone models by 8mn (for a net decline of 2mn units).

The change in iPhone mix causes our blended iPhone ASP estimates for the Dec/Mar quarters to move to \$790/\$791 from prior \$779/\$869.

Figure 2: BofAML unit estimate changes by quarter and year

Units (K)	Dec F1Q17	Mar F2Q17	Jun F3Q17	Sep F4Q17	Dec F1Q18	Mar F2Q18	Jun F3Q18	Sep F4Q18	Dec F1Q19	Mar F2Q19	Jun F3Q19	Sep F4Q19	F16	F17	F18	F19
iPhone (old)	78,290	50,763	41,026	46,677	74,000	59,000	44,000	53,000	78,000	60,000	60,000	58,000	211,884	216,756	230,000	256,000
iPhone (new)	78,290	50,763	41,026	46,677	77,000	57,000	41,000	53,000	78,000	60,000	55,000	64,000	211,884	216,756	228,000	257,000
iPad (old)	13,081	8,922	11,424	10,326	12,689	8,654	11,081	10,016	12,689	8,654	11,081	10,016	45,590	43,753	42,440	42,440
iPad (new)	13,081	8,922	11,424	10,326	12,689	8,654	11,081	10,016	12,689	8,654	11,081	10,016	45,590	43,753	42,440	42,440
Mac (old)	5,374	4,199	4,292	5,386	5,535	4,325	4,421	5,548	5,701	4,455	4,553	5,714	18,484	19,251	19,829	20,423
Mac (new)	5,374	4,199	4,292	5,386	5,535	4,325	4,421	5,548	5,701	4,455	4,553	5,714	18,484	19,251	19,829	20,423
iPod (old)	2,032	928	1,124	1,014	1,626	742	899	811	1,301	594	719	649	6,372	5,098	4,078	3,263
iPod (new)	2,032	928	1,124	1,014	1,626	742	899	811	1,301	594	719	649	6,372	5,098	4,078	3,263
Apple Watch (old)	5,000	2,000	3,000	4,000	12,500	3,200	4,500	6,000	17,500	4,480	6,300	8,400	10,500	14,000	26,200	36,680
Apple Watch (new)	5,000	2,000	3,000	4,000	12,500	3,200	4,500	6,000	17,500	4,480	6,300	8,400	10,500	14,000	26,200	36,680

Source: Company reports, BofA Merrill Lynch Global Research estimates

Bull case explored further

Cash repatriation potential

Apple has \$253bn of cash outside the U.S., of which we view \$236bn as un-trapped and available to be repatriated to the US. Recall that as per the European Union ruling, Apple needs to keep €13bn (~\$15.8bn @1.22 conversion rate) in an Escrow account until the litigation in Europe is resolved. Approximately 70% of Apple's annual global earnings are foreign. Also, Apple has been provisioning for U.S. taxes on about 70% of its global earnings (at current tax rates), and has been declaring the rest, which is a portion of its foreign earnings indefinitely reinvested outside the US (on which US taxes are not provisioned). If instead a lower repatriation rate of 15.5% is applied on global earnings, Apple could substantially repatriate all of its offshore un-trapped cash (\$236bn) by paying the taxes already provisioned, which are sitting on its balance sheet as deferred tax liability (\$36bn).

In Figure 3, we show historical pre-tax earnings for Apple split into foreign pre-tax earnings and U.S. domestic pre-tax earnings (federal and state). In F17, about 70% of Apple's pre-tax earnings were foreign (\$44.7bn out of total \$64.1bn).

Taxes that Apple provisions in any given year, and which do not actually get paid out, appear on Apple's balance sheet as a deferred tax liability. Figure 4 shows that, as of F17, the majority of the deferred tax liability on Apple's balance sheet was due to unremitted earnings for foreign subsidiaries (\$36.4bn out of \$36.6bn, or about 99%).

The new tax provision under the Trump administration lowers the repatriation tax rate from 35% to 15.5% for liquid earnings held in cash. As Figure 4 shows, the \$36.4bn of deferred tax liability on Apple's balance sheet would have been accrued at the prior 35% rate and so corresponds to about \$104bn of foreign earnings. Apple also has not provisioned taxes for \$128bn of foreign earnings, which it has identified so far as indefinitely reinvested outside the U.S. If a 15.5% repatriation rate is applied to this total foreign earnings of \$233bn (\$104bn on which taxes have already been provisioned, and \$129bn on which taxes have not been provisioned), then Apple's total bill for repatriating its cash comes to ~\$36bn, which is the amount the company already has on its balance sheet as deferred tax liability,

If the repatriation tax rate is reduced to 15.5% from the current 35%, then Apple should be able to repatriate substantially all of its foreign cash, without provisioning for additional taxes, by paying out the deferred tax liability already on its balance sheet. After paying out the taxes, Apple would have \$200mn of cash back on-shore in the U.S. (which it could potentially use for buybacks, dividends, or M&A).

Figure 3: Apple – historical provision of income tax split into federal, state and foreign

	F17	F16	F15	F14	F13
Foreign pretax earnings	\$44,700	\$41,100	\$47,600	\$33,600	\$30,500
Domestic pretax earnings	\$19,389	\$20,272	\$24,915	\$19,883	\$19,655
Total Pretax earnings	\$64,089	\$61,372	\$72,515	\$53,483	\$50,155
Provision for income tax	\$15,738	\$15,685	\$19,121	\$13,973	\$13,118
Federal					
Current	\$7,842	\$7,652	11730	8624	9334
Deferred	\$5,980	\$5,043	3408	3183	1878
Total	\$13,822	\$12,695	\$15,138	\$11,807	\$11,212
State					
Current	\$259	\$990	1265	855	1084
Deferred	\$2	(\$138)	(\$220)	(\$178)	(\$311)
Total	\$261	\$852	\$1,045	\$677	\$773
Foreign					
Current	\$1,671	\$2,105	\$4,744	\$2,147	\$1,559
Deferred	(\$16)	\$33	(\$1,806)	(\$658)	(\$426)
Total	\$1,655	\$2,138	\$2,938	\$1,489	\$1,133
Foreign tax rate	3.7%	5.2%	6.2%	4.4%	3.7%
Effective Tax rate	24.6%	25.6%	26.4%	26.1%	26.2%
Cash outside US	\$252,300	\$216,000	\$186,900	\$137,100	\$111,300
Total Cash	\$268,895	\$237,585	\$205,666	\$155,239	\$146,761
% Cash outside US	93.8%	90.9%	90.9%	88.3%	75.8%
Reconciliation with 35% U.S. Statutory Fed Tax rate:					
Total tax @35% Fed rate applied on GLOBAL pretax earnings	\$22,431	\$21,480	\$25,380	\$18,719	\$17,554
indefinitely invested earnings of foreign subsidiaries	-6135	-5582	-6470	-4744	-4614
state taxes, net of federal effect	185	553	680	469	508
domestic production activities deduction	-209	-382	-426	-495	-308
R&D credit, net	-678	-371	-171	-88	-287
Other	144	-13	128	112	265
Provision for income tax	\$15,738	\$15,685	\$19,121	\$13,973	\$13,118
Cumulative earnings indefinitely reinvested outside U.S. (U.S. taxes NOT provisioned for)	\$128,700	\$109,800	\$91,500	\$69,700	\$54,400
increase	\$18,900	\$18,300	\$21,800	\$15,300	\$14,000
associated def tax liab @35% tax rate - (not recognized)	\$42,200	\$35,900	\$30,000	\$23,300	\$18,400
increase	\$6,300	\$5,900	\$6,700	\$4,900	\$4,600

Source: Company reports, BofA Merrill Lynch Global Research estimates

Figure 4: Apple already has deferred tax liability on its balance sheet which would be used for cash repatriation

	F17	F16	F15	F14	F13
Def tax liability on Balance Sheet:					
unremitted earnings of foreign subs (\$mn)	\$36,355	\$31,436	\$26,868	\$21,544	\$18,044
Other (\$mn)	\$207	\$485	\$303	\$398	\$112
Total Def tax liab on BS	\$36,562	\$31,921	\$27,171	\$21,942	\$18,156
increase in unremitted earnings of foreign subs			\$4,568	\$5,324	\$3,500
How much tax would Apple pay to repatriate its off-shore cash:					
def tax on BS related to unremitted earnings of foreign subs (\$mn)	\$36,355				
tax rate at which accrued:	35%				
Associated Foreign earnings on which taxes accrued @35% rate:	\$103,871				
Cummulative earnings indefinitely reinvested outside U.S. (U.S. taxes not provisioned)	\$128,700				
Total foreign earnings on which repatriation tax of 15.5% applied:	\$232,571				
Repatriation tax at 15.5%:	\$36,049				
Excess def tax liability (\$mn) on balance sheet if repatriation tax 15.5% vs. 35%:	\$306				

If the repatriation tax went to 15.5% (vs. 35%), substantially all of Apple's off-shore cash can be repatriated on taxes already provisioned

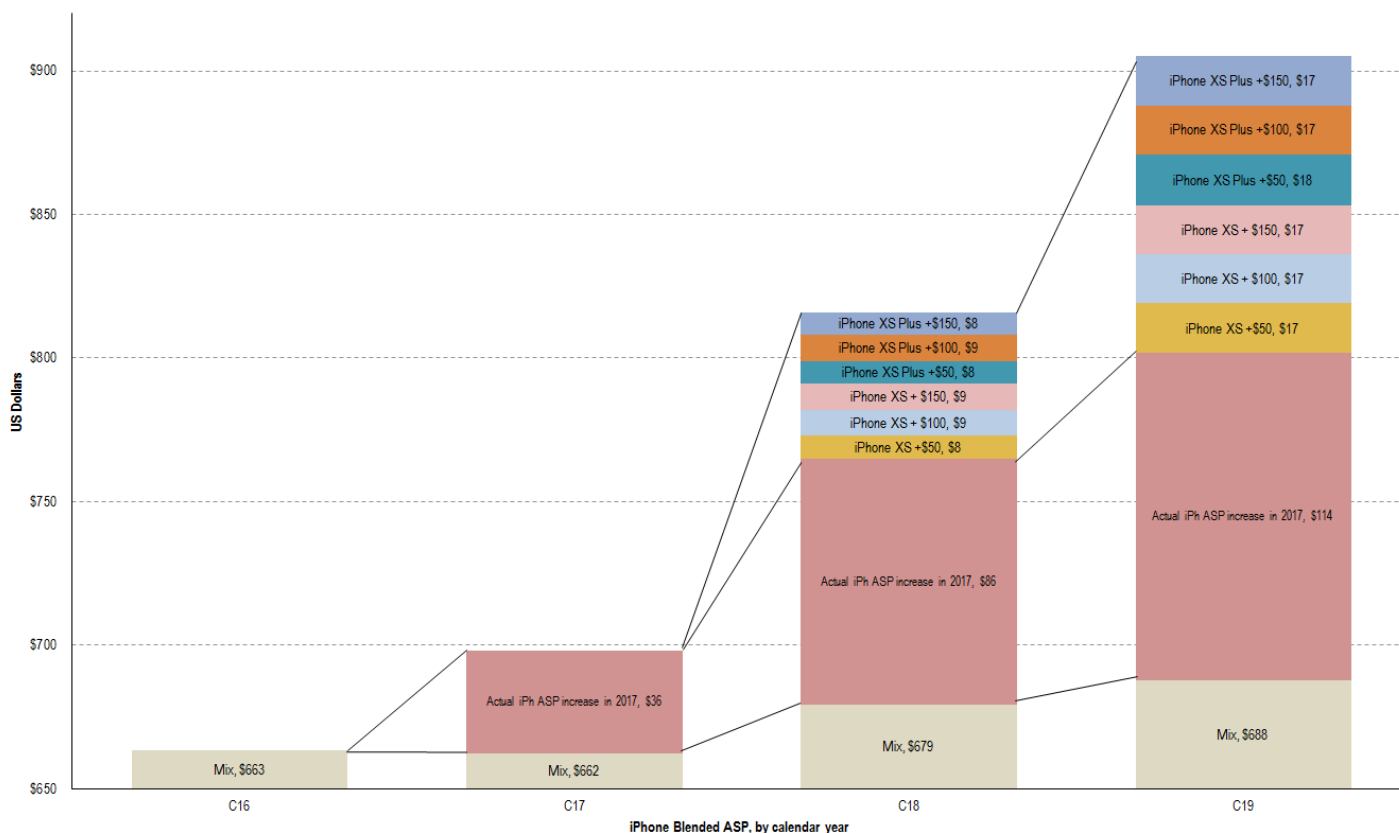
Source: Company reports, BofA Merrill Lynch Global Research estimates

Consensus C19 estimates still too low given ASP growth potential

In Figure 5 we parse iPhone ASP growth, by calendar year, into two factors (1) mix and (2) new model price increase. To see the impact of price increases, we keep mix fixed by assuming a 60%/40% mix of new/old phones per quarter. Also, as in years past, we assume Apple continues to lower the price of existing phones by \$100 when new phones are released. As Figure 5 shows, even without any price increase for the new iPhones announced in C17/C18/C19, the blended iPhone ASP grows from year-to-year in C18 and C19 just from the impact of mix. So, even if there is no further price increase for the phones to be released in C18 (iPhone 8S/8S Plus), blended iPhone ASP in C19 is higher given the step-up from C17 will flow through to 2019. If Apple can indeed increase prices again in C18 (perhaps by offering a phone with an even larger viewable area), then that can drive C18 and C19 ASP even higher. A 2-year runway for ASPs is underappreciated, in our view.

Figure 5 presents various scenarios to show what C18/C19 iPhone ASP could be if iPhone 8S is priced \$50/\$100/\$150 higher than current iPhone 8 Plus. It also shows the impact on C18/C19 ASP if iPhone 8S Plus is priced \$50/\$100/\$150 higher than iPhone X. We currently model iPhone blended ASP for C19 at \$839, which from Figure 5, roughly corresponds to the scenario where iPhone 8S is priced \$50 more than iPhone 8 Plus and iPhone 8S Plus is priced \$50 more than iPhone X.

Figure 5: iPhone ASP progression scenarios



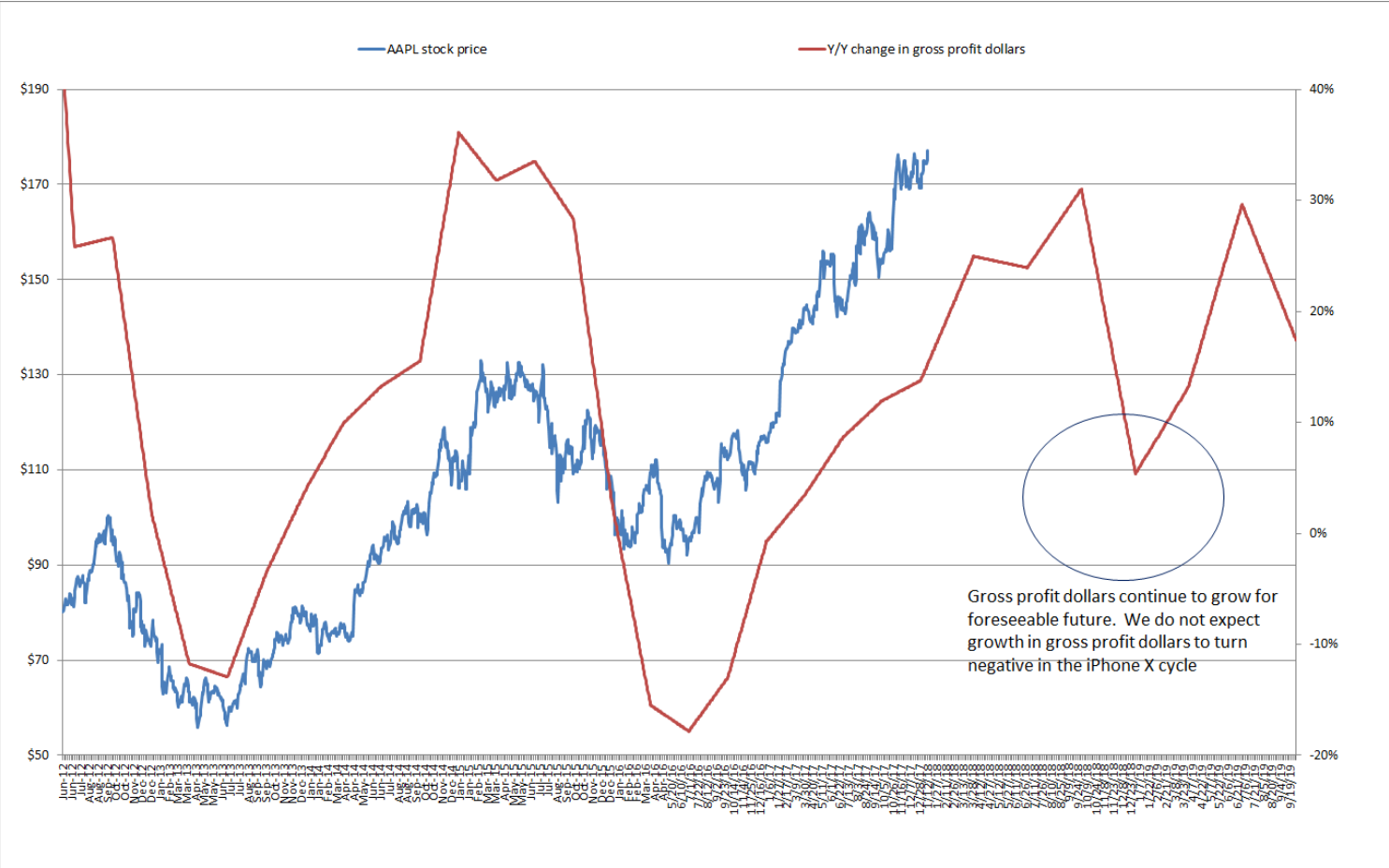
Source: Company reports, BofA Merrill Lynch Global Research estimates

Stock correlated to gross profit dollar growth which remains positive

Our analysis suggests that Apple's stock price is highly correlated to growth in gross profit dollars. In the prior down cycle (late 2012), revenues decelerated to reach low-single digits by mid-2013; however, gross profit dollar growth turned significantly negative (given gross margins were also declining) and the company was losing share to

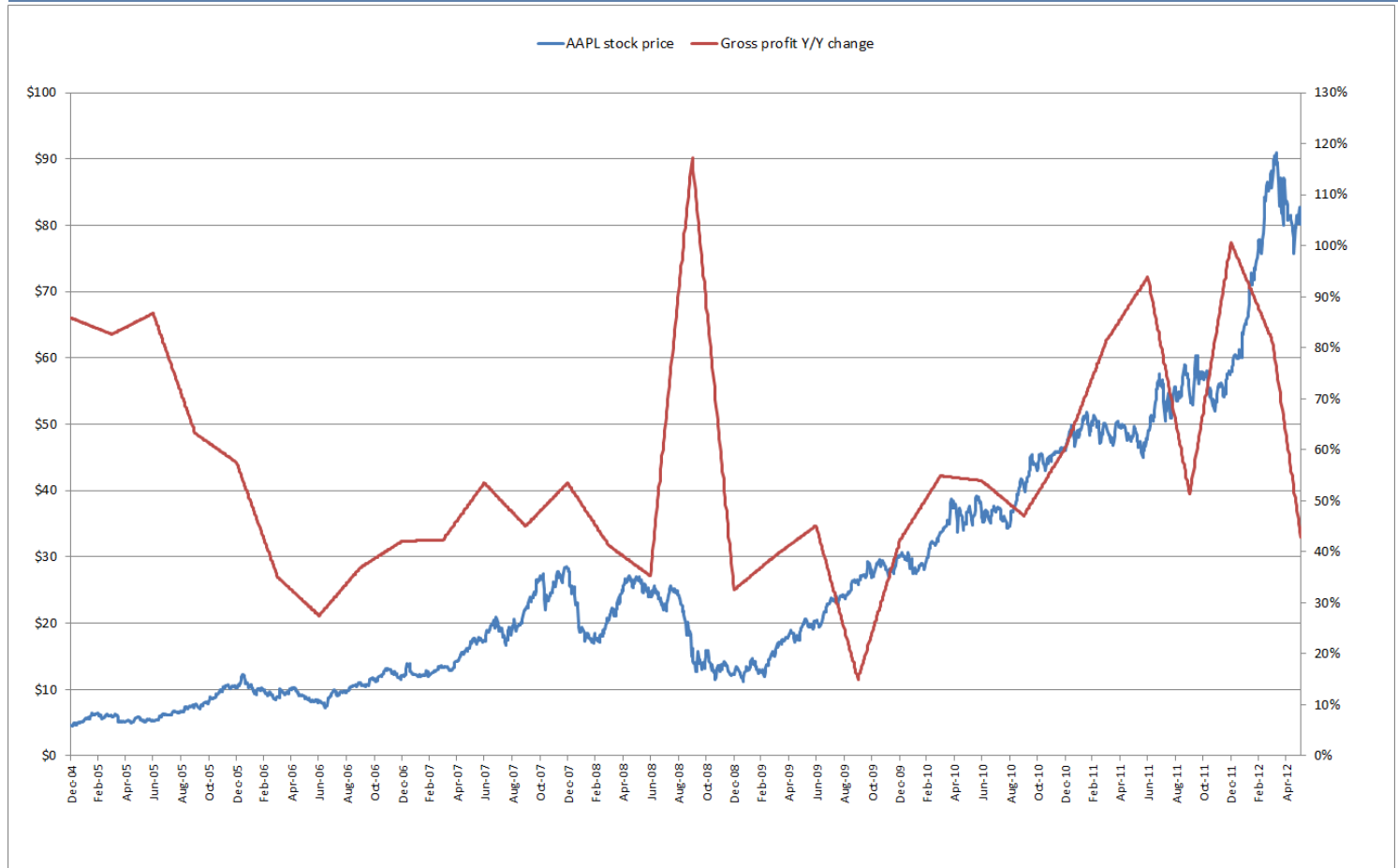
Android. In F18 and F19 we model iPhone gross margins in the 39-40% range and overall company gross margins staying slightly below 39%. The company continues to gain share versus Android. Net-net we do not expect a correction as severe as the last one despite periods of slower growth of gross profit dollars, as long as the growth remains positive.

Figure 6: Apple stock price vs. gross profit dollar growth



Source: FactSet, BofA Merrill Lynch Global Research estimates

Figure 7: Longer-term correlation of Apple stock price to gross profit dollar growth



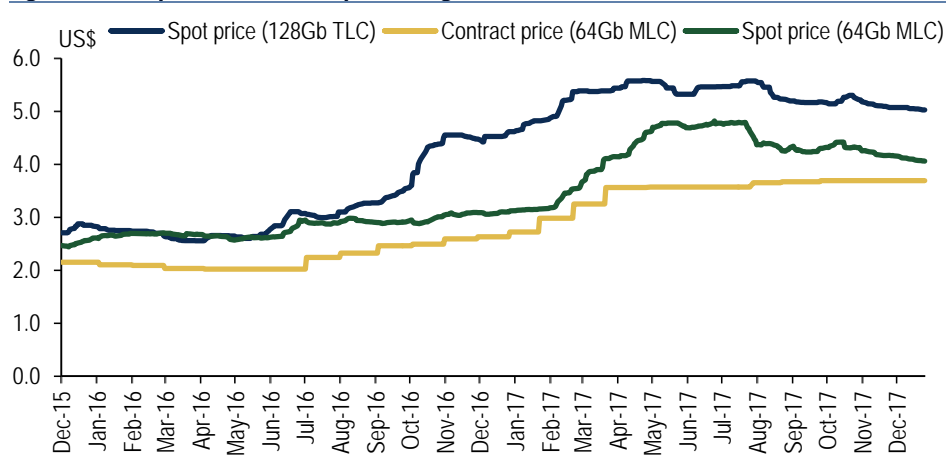
Source: FactSet, BofA Merrill Lynch Global Research estimates

Lower commodity costs, and higher ASP can help gross margin

Smartphones (including iPhones) have been getting more powerful over the years and have increased the amount of memory (DRAM) and storage (NAND) that they use.

Figure 8 shows how Spot and Contract prices for NAND have increased over the last two years.

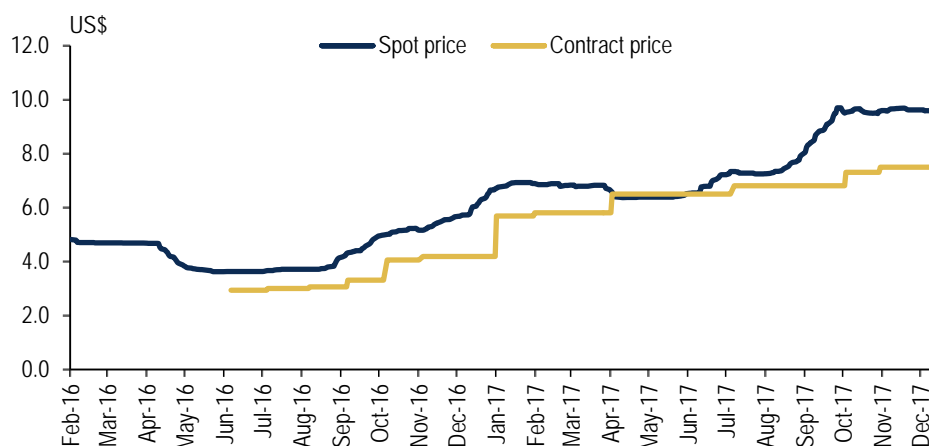
Figure 8: NAND price – like DRAM, spot also higher than contract



Source: DRAMeXchange, BofA Merrill Lynch Global Research

Figure 9 shows how Spot and Contract prices for DRAM have increased over the last two years.

Figure 9: DRAM price (8Gb DDR4) – Spot still higher than recently increased contract price



Source: DRAMeXchange, BofA Merrill Lynch Global Research

As a case in point, the new iPhones released in 2017 (iPhone 8/8 Plus/X) start at 64GB storage (NAND) configurations, vs. prior generations which started at 32GB. Some investors believe that Apple might introduce 512GB storage configurations in iPhones in 2018 or 2019. While iPhones up to iPhone 8 have 2GB of memory (DRAM), iPhone 8 Plus and iPhone X come with 3GB.

The growth of Spot and Contract prices and the increased use of DRAM and NAND have certainly pressured Apple's iPhone margins. While NAND prices are expected to remain stable, or decline sometime in 2H18, DRAM prices are expected to remain higher for a longer time than NAND.

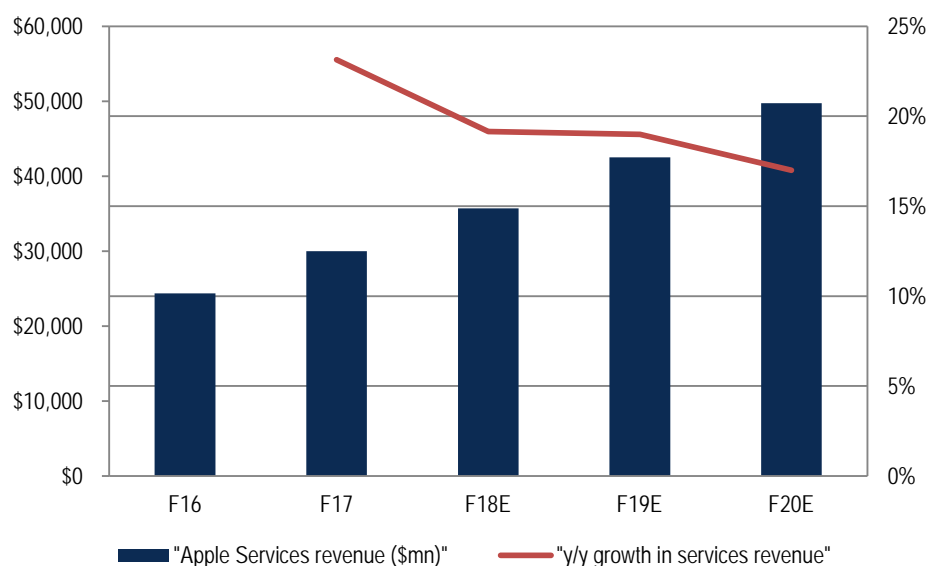
As commodity prices re-normalize, Apple's margins on the iPhone may correspondingly benefit, as we do not expect Apple to reduce prices of future generations of phones.

Services can also drive revenue growth

While iPhone remains the key driver for Apple's revenue and gross profit for the next few years, longer-term investors should pay more attention to Services revenue, which the company expects to double 2016-2020E. This includes both organic growth, as well as growth via acquisitions. Apple's services revenue includes revenue from App store, Apple Music, iTunes, Apple Pay, Apple Care, Licensing, iCloud, and other Services.

We currently model Services revenue growing from \$24bn in F16 to \$50bn in F20E (Figure 10). Services also carry a higher margin (we model ~50% gross margin on Services, compared to ~40% gross margin for iPhone).

Figure 10: Projected growth in Apple's services revenue



Source: Company reports, BofA Merrill Lynch Global Research estimates

Some customers waiting for larger OLED phone in F19

The iPhone X allows for a 5.8" OLED display edge-edge, given the shorter bezels. The display size is larger than prior generations of iPhones, which had max display size of 5.5". However, there is still a significant set of customers who would prefer larger screen size phones.

Media reports have indicated the possibility of Apple launching a 6.5" OLED phone in 2018. This would make it one of the largest phones on the market and would be appealing to those Android users who have held out from joining the Apple ecosystem waiting for an even bigger phone.

AR/VR remains a major focus and possible driver of App revenue

When users compare iOS vs. Android ecosystems, the discussion necessarily centers on the number and types of Apps available on Apple's App store vs. on Google Play. No doubt the richness of the Apps available on iOS make iPhone and iPad the useful products they are, and have helped to integrate them into users' lives.

In June 2017, Apple reported that the App store had seen significant growth over the past 12 months, with overall downloads up 70%. In addition, its global developer community had earned over \$70bn since the App Store launched in 2008. The subscription business model is now available to developers across all 25 app categories and App Store's active paid subscriptions were up 58% y/y. Customers enjoy subscriptions across a wide variety of services including Netflix, Hulu, Tastemade (a mobile-first cooking network that has its own App), and photo editing Apps like Over and Enlight. Apple typically keeps (and reports) 30% of the total App Store revenue, while the remaining 70% is paid to developers. Starting last year, Apple indicated that the revenue split would be 85%-15% (i.e., Apple would take a smaller cut) from those developers who have customers signing up for subscriptions longer than a year. This is an added incentive for developers to stick with the iOS ecosystem.

Apps are used by customers in 155 countries. Gaming and Entertainment are top-grossing App categories. Super Mario Run was one of the App Store's biggest hits. Lifestyle Apps as well as Health and Fitness have experienced over 70% growth in the past year.

Figure 11: Gaming and Entertainment are top-grossing App categories. Super Mario Run was one of the App Store's biggest hits



Source: Apple, Inc.

In F4Q17, the App Store set a new all-time record, and according to App Annie's latest report, generated nearly twice the revenue of Google Play. Apple reported seeing an increase in the frequency of customer visits, the amount of time they spend in the store and the number of apps they download.

Augmented Reality (AR) is a focus for Apple and the launch of iOS 11 also made iOS the world's largest platform for augmented reality. There are over 1,000 Apps with AR features in Apple's App Store, with developers creating new experiences in many category of apps aimed at consumers, students and business users alike.

App Annie predicts that AR will become more integrated into a variety of Apps in 2018. Those Apps that were being developed in 2017 with AR features will come to market in 2018. Also, downloads of AR Apps showed a significant increase in C4Q17.

Figure 12 shows the most popular Apps in the Apple App store for 2017.

Figure 12: Top Apps of 2017 in Apple App Store

BEST OF 2017			
Top Apps Charts			
This year's most popular apps			
Bitmoji Utilities	VIEW	Snapchat Photo & Video	VIEW
YouTube: Watch, Listen, Stream Photo & Video	VIEW	Messenger Social Networking	VIEW
Instagram Photo & Video	VIEW	Facebook Social Networking	VIEW
Google Maps - GPS Navigation Navigation	VIEW	Netflix Entertainment	VIEW
Spotify Music Music	VIEW	Uber Travel	VIEW
Gmail - Email by Google Productivity	VIEW	Pandora Music Music	VIEW
Amazon - Shopping made easy Shopping	VIEW	WhatsApp Messenger Social Networking	VIEW
Wish - Shopping Made Fun Shopping	VIEW	Twitter News	VIEW
SoundCloud - Music & Audio Music	VIEW	Google Chrome Utilities	VIEW
Waze Navigation & Live Traffic Navigation	VIEW	Lyft Travel	VIEW

Source: Apple Inc.

Optionality afforded by large cash balance to enter new markets

Figure 13 summarizes the opportunities for Apple to grow its revenue in traditional and new markets. Based on Apple's calendar 2016/2017 revenue in smartphones, tablets, Apple Watch and Macs (~186bn/~202bn in the respective years), there is an incremental consumer market sized \$345bn/\$338bn in which Apple can increase its share (the consumer market opportunity is, in fact, larger given a portion of Apple's \$186bn/\$202bn revenue is from Enterprise).

Moreover, looking at other areas of consumer spend, we estimate additional market opportunities sized ~\$300bn (including the TV market) and ~\$140bn (excluding the TV market). This reinforces our opinion that Apple has ample opportunity to develop/modify and introduce new product categories in order to grow revenues another \$100bn in the long term.

Figure 13: Market opportunities (as yet untapped TAM) in traditional and new markets based on 2016 Apple sales.

Existing Markets				
Apple Product	Disrupted Product	Existing competitors	TAM (\$mn)	
Smartphones	Android phones, Windows phones	Samsung, LG	\$255,784	
Tablets	Android Tablets, Windows Tablets	Samsung, ASUS, ACER	\$26,719	
Wearables	Smartwatches, fitness bands	Fitbit	\$10,800	
Desktops/Laptops	Windows Desktops/Laptops	Dell, HPQ, Acer, ASUS	\$51,996	
Total (\$bn):			\$345,298	← Apple has significant scope to increase its share of the traditional markets
New Markets				
Apple Product	Disrupted Product	Existing competitors	TAM (\$mn)	
iPhone SE	Feature Phone	Motorola, Nokia	\$9,854	
iPhone	Digital Camera/Camcorder	Cannon, Nikon	\$17,665	
iPad	Blue ray/Dvd player	Sony, Toshiba	\$15,206	
Apple TV	Video game consoles, handheld video games	Xbox, Nintendo, Sega	\$12,640	
Apple TV	Set-top box		\$12,011	
New TV (Physical)	Connected TV/HDTV	Samsung, LGE	\$156,107	
iPhone, iPod-touch, iPad	Streaming audio	Pandora, Spotify	\$3,400	
iPhone, iPad, Mac	Streaming video		\$10,000	
Virtual Reality			\$30,000	
Intelligent Home Assistant		Amazon Echo, Google Home	\$7,500	
Wireless Earbuds (AirPods)			\$9,500	
AirPort	Home networking	Netgear, Linksys	\$12,000	
Total (incl TV market):			\$295,882	← Apple has significant scope to increase its share of new markets
Total (excl TV market):			\$139,775	<p>Even without offering an actual TV set, Apple still has over \$100bn in new market opportunities (ex auto)</p>

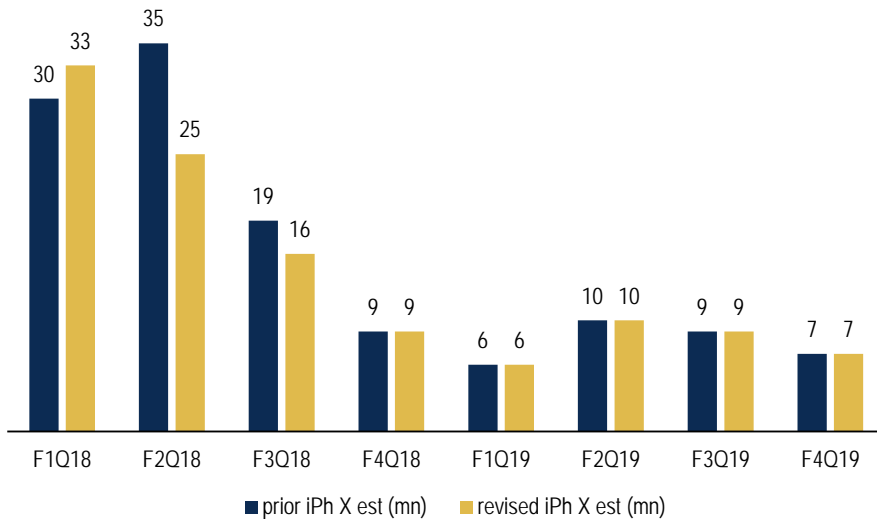
Source: Company reports, IDC, BofA Merrill Lynch Global Research estimates

Bear case explored further

iPhone X sales may be weaker in the march quarter

Our checks from Asia suggest that production for the iPhone X picked up strongly in the December quarter and ended up close to 35mn units; consequently we are raising our Dec qtr estimates for the iPhone as seen in Figure 14. However, the better-than-normal q/q expectation for March (F2Q18) appears aggressive at this point and we are trimming our expectations for iPhone X for the March and June quarters but raise lower-end SKUs.

Figure 14: BofAML iPhone unit estimates (before and after)

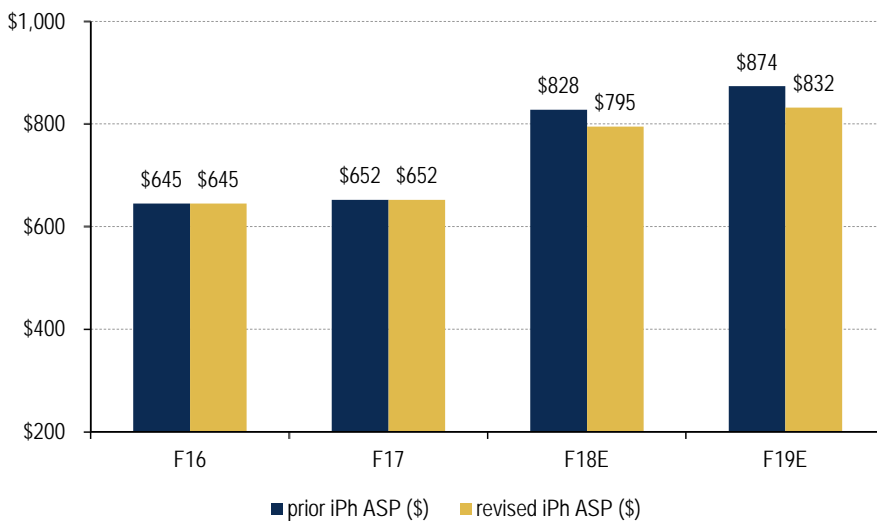


Source: Company reports, BofA Merrill Lynch Global Research estimates

Blended iPhone ASP growth may be lower than prior expected

As we lower our expectation for sales of iPhone X and increase units for the older models (lower ASP), our revised expectation for blended iPhone ASP in F18 and F19 is now lower (Figure 15); albeit, we still see significant ASP growth in F18 and F19, as compared to the levels of F16/F17, given the ASP increases that have happened with the new iPhones launched in F16 and F17 and those we expect in F18 and F19.

Figure 15: BofAML iPhone blended ASP estimates (before and after)

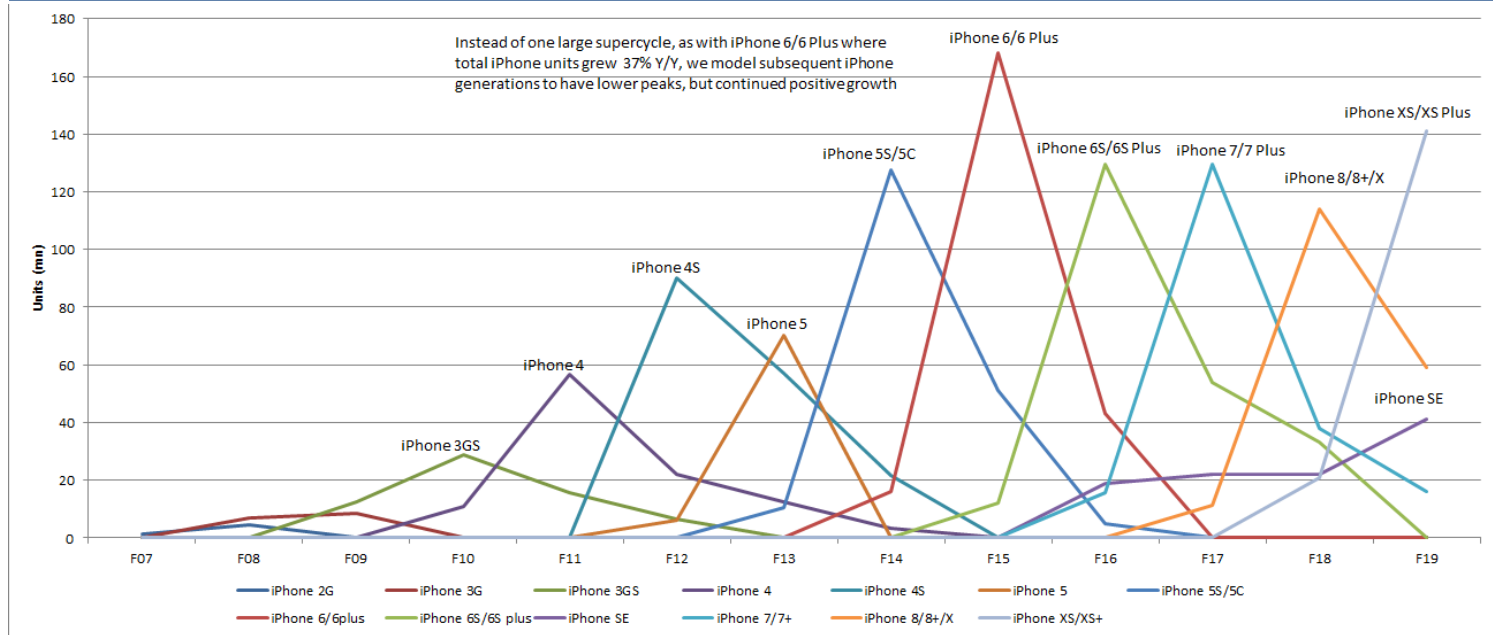


Source: Company reports, BofA Merrill Lynch Global Research estimates

iPhone X cycle may not be as strong, but still super long

As shown in Figure 16, the iPhone 8/8 Plus/X cycle may not be as strong as prior cycles; however, projected units still show good growth for F18 and F19.

Figure 16: Comparing iPhone cycles



Source: Company reports, BofA Merrill Lynch Global Research estimates

iPhone X lead times have reduced in China, Competition strong

Figure 17 is our iPhone X availability tracker. As we see, as of the end of December, iPhone X is in stock in China, which happens to be one of the largest markets for iPhones. This compares to the 5-6 weeks of lead time at the start of iPhone X shipments. This implies that supply has improved enough to catch up with demand, which is somewhat surprising to us since it is so early in the cycle.

Figure 17: iPhone X availability by country

	27 Oct 2017, 4:00 AM ET		27 Oct 2017, 5:00 AM ET		31 Oct 2017		02 Nov 2017		06 Nov 2017		06 Dec 2017		13 Dec 2017		20 Dec 2017	
	Space Gray	Silver	Space Gray	Silver	Space Gray	Silver	Space Gray	Silver	Space Gray	Silver	Space Gray	Silver	Space Gray	Silver	Space Gray	Silver
iPhone X USA																
AT&T	03 Nov	03 Nov	02 Nov - 10 Nov	03 Nov	29 Nov - 06 Dec	21 Nov - 29 Nov	01 Dec - 08 Dec	24 Nov - 01 Dec	28 Nov - 05 Dec	20 Nov - 28 Nov	07 Dec - 11 Dec	07 Dec - 11 Dec	13 Dec - 15 Dec	13 Dec - 15 Dec	21 Dec - 26 Dec	21 Dec - 26 Dec
64 GB	02 Nov - 10 Nov	03 Nov	02 Nov - 10 Nov	03 Nov	6 Dec - 20 Dec	29 Nov - 06 Dec	8 Dec - 22 Dec	01 Dec - 08 Dec	12 Dec - 19 Dec	5 Dec - 12 Dec	28 Dec - 05 Jan	20 Dec - 28 Dec	13 Dec - 15 Dec	13 Dec - 15 Dec	21 Dec - 26 Dec	21 Dec - 26 Dec
256 GB																
Sprint																
64 GB	03 Nov	03 Nov	03 Nov	03 Nov	21 Nov	14 Nov	21 Nov	14 Nov	08 Dec	10 Nov - 08 Dec	06 Dec	06 Dec	13 Dec	13 Dec	20 Dec	20 Dec
256 GB	03 Nov	03 Nov	03 Nov	03 Nov	14 Nov	14 Nov	14 Nov	14 Nov	10 Nov - 08 Dec	10 Nov - 08 Dec	06 Dec	15 Dec	13 Dec	13 Dec	20 Dec	20 Dec
T Mobile																
64 GB	03 Nov	03 Nov	03 Nov	03 Nov	01 Dec - 20 Dec	10 Nov - 01 Dec	01 Dec - 20 Dec	10 Nov - 01 Dec	01 Dec - 20 Dec	17 Nov - 01 Dec	06 Dec - 08 Dec	06 Dec - 08 Dec	12 Dec - 14 Dec	12 Dec - 14 Dec	20 Dec - 22 Dec	20 Dec - 22 Dec
256 GB	03 Nov	03 Nov	03 Nov	03 Nov	01 Dec - 20 Dec	01 Dec - 20 Dec	20 Dec - 24 Jan	20 Dec - 24 Jan	01 Dec - 20 Dec	01 Dec - 20 Dec	08 Dec - 15 Dec	19 Dec - 26 Dec	21 Dec - 28 Dec	28 Dec - 04 Jan	20 Dec - 22 Dec	20 Dec - 22 Dec
Verizon																
64 GB	22 Nov	10 Nov	22 Nov	10 Nov	01 Dec	01 Dec	01 Dec	01 Dec	01 Dec	01 Dec	06 Dec	06 Dec	13 Dec	13 Dec	20 Dec	20 Dec
256 GB	01 Dec	15 Nov	01 Dec	15 Nov	13 Dec	01 Dec	13 Dec	06 Dec	13 Dec	06 Dec	06 Dec	06 Dec	13 Dec	13 Dec	20 Dec	20 Dec
China																
64 GB	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	5 days	5 days	1-3 days	1-3 days	In stock	In stock
256 GB	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	5 days	5 days	1-3 days	1-3 days	In stock	In stock
Japan																
64 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	14 Dec	14 Dec	15 Dec - 19 Dec	15 Dec - 19 Dec	22 Dec	22 Dec
256 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	14 Dec	14 Dec	15 Dec - 19 Dec	15 Dec - 19 Dec	22 Dec	22 Dec
Mexico																
64 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	5 days	5 days	1-3 days	5 days	In stock	In stock
256 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	5 days	5 days	1-3 days	5 days	In stock	In stock
UK																
64 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	14 Dec	14 Dec	15 Dec - 19 Dec	15 Dec - 19 Dec	21 Dec	21 Dec
256 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	14 Dec	14 Dec	15 Dec - 19 Dec	15 Dec - 19 Dec	21 Dec	21 Dec
Russia																
64 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	5 days	5 days	1-3 days	1-3 days	In stock	In stock
256 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	5 days	5 days	1-3 days	1-3 days	In stock	In stock
Germany																
64 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	14 Dec	14 Dec	15 Dec - 19 Dec	15 Dec - 19 Dec	21 Dec	21 Dec
256 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	14 Dec	14 Dec	15 Dec - 19 Dec	15 Dec - 19 Dec	21 Dec	21 Dec
France																
64 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	18 Dec	18 Dec	21 Dec	21 Dec	02 Jan	02 Jan
256 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	18 Dec	18 Dec	21 Dec	21 Dec	02 Jan	02 Jan
Australia																
64 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	14 Dec	14 Dec	15 Dec - 19 Dec	15 Dec - 19 Dec	22 Dec - 28 Dec	22 Dec - 28 Dec
256 GB	4-5 weeks	4-5 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	5-6 weeks	3-4 weeks	3-4 weeks	14 Dec	14 Dec	15 Dec - 19 Dec	15 Dec - 19 Dec	22 Dec - 28 Dec	22 Dec - 28 Dec

Source: Apple country websites

Beats and raises are diminishing as Street estimates have closed the gap

Figure 18 shows Apple's stock price trend vs. consensus earnings estimate revisions and compared to our (BofAML) estimate revisions for F18 EPS.

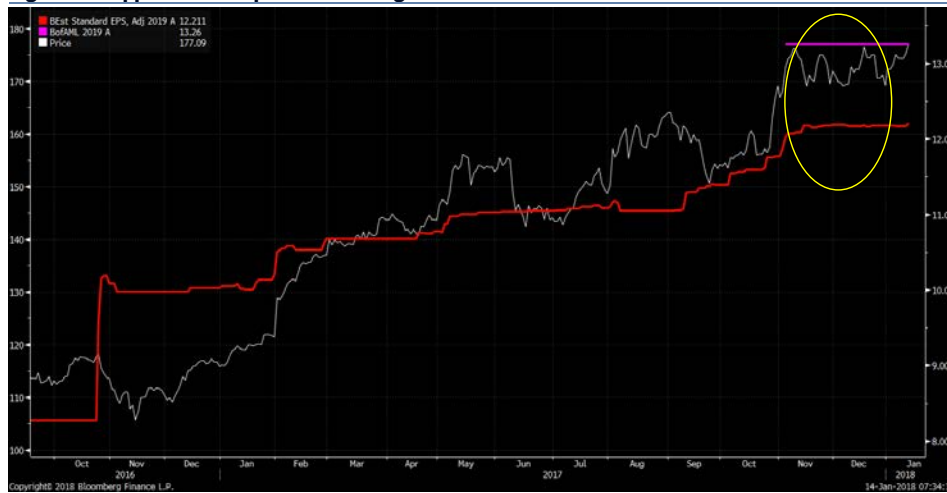
Figure 18: Apple stock vs. positive earnings revisions for F18



Source: Bloomberg

As seen in Figure 18 above, the Mar 17, Jun 17 and Sep 17 quarters resulted in significant positive estimate revisions for F18 earnings (as seen by the step function changes in revisions in those timeframes). The Dec 17 quarter, however, has resulted in almost no change, and given the risk of deceleration over the next two quarters, the likelihood of negative revisions is significantly increasing.

Figure 19: Apple stock vs. positive earnings revisions for F19



Source: Bloomberg

Figure 19 above shows a similar trend for estimate revisions for F19 earnings.

Batterygate – At least a PR annoyance

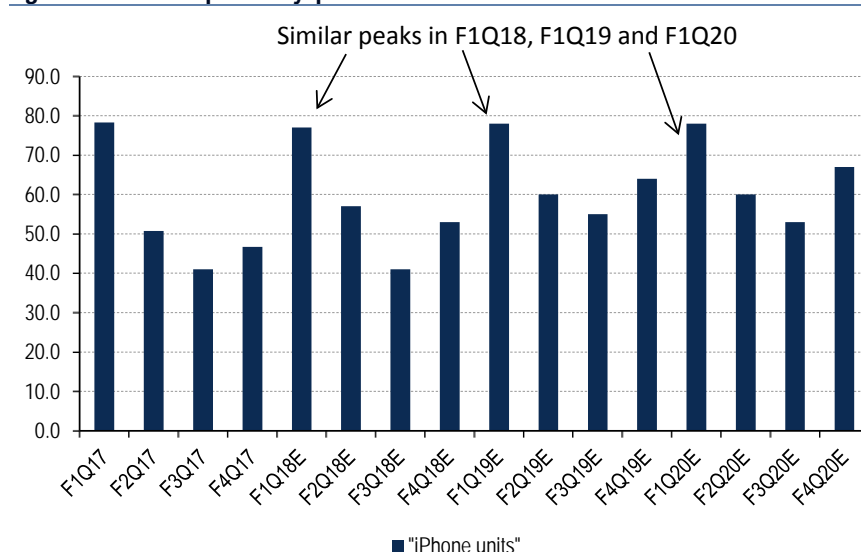
Recent revelations that Apple had been throttling CPU speeds lower on older iPhones (6, 6S, 7 and SE) in order to counter degrading battery performance created a public relations annoyance for the company. Apple has acknowledged the throttling and is offering replacement batteries for older iPhones at a \$50 discount (\$29, versus prior \$79). The company also issued a statement clarifying that its intent was not to degrade user experience in order to drive customer upgrades. Instead, it was trying to smooth peaks of CPU activity in order to prevent the iPhones from shutting down unexpectedly in cold weather or as the battery aged. Users have reported CPU performance improvement once the battery is replaced.

In an environment where consumers are looking at device specifications critically, and where lots of lower cost competitor products have similar functionality, changes such as these, behind the scenes, and without customer knowledge, can certainly cause users to be annoyed.

F1Q18 represents a near-term peak for iPhone shipments by our model

We model 77mn iPhone units for the Dec quarter (F1Q18), which is the highest quarterly iPhone shipment expected in F18. Similarly, we model the next peak in F1Q19 (Dec 2018 quarter) at a similar peak level of 78mn units. In fact, we model the next peak after that to also be at a similar level of 78mn units in F1Q20 (Dec 2019 quarter).

Figure 20: iPhone shipments by quarter



Source: Company reports, BofA Merrill Lynch Global research estimates

Figure 21: BofAML vs. consensus iPhone units (mn)

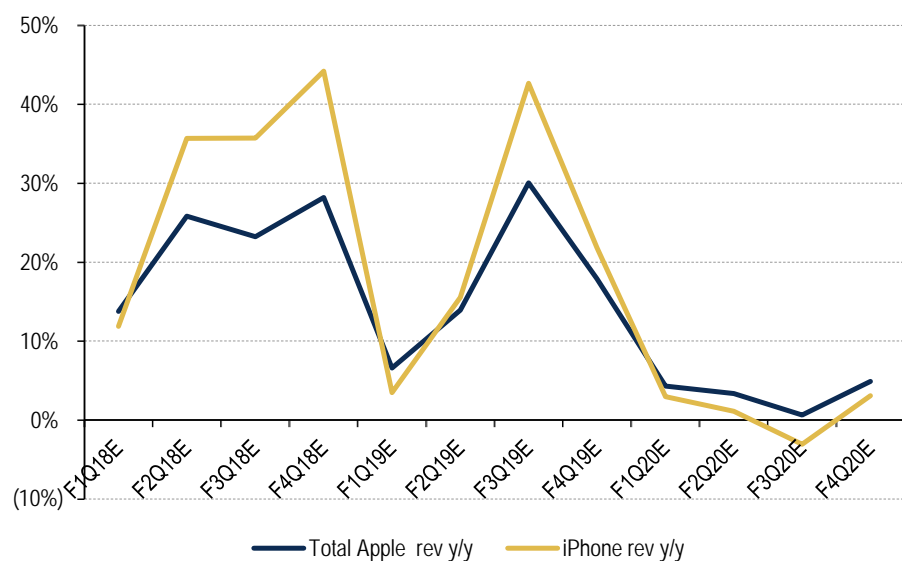
	F1Q18E	F2Q18	F3Q18E	F4Q18E	F18E	F19E
Consensus	79	62	49	51	240	243
BofAML	77	57	41	53	228	257

Source: FactSet, BofA Merrill Lynch Global Research estimates, Bloomberg

Expect revenue growth deceleration after F18

Figure 22 shows the y/y trend in Apple's total revenue, as well as revenue from iPhone. We model strong revenue growth in F18 (+22% y/y and +28% y/y growth for total company and iPhone, respectively). However, our current forecast calls for deceleration of revenue growth in F19 (+16% y/y, + 18% y/y for total company and iPhone respectively).

Figure 22: Apple iPhone and total company revenue growth y/y, by quarter



Source: BofA Merrill Lynch Global Research estimates

Relative valuation

Figure 23 shows the comparable companies table for Apple in which we compare Apple to other large cap companies. The stock rallied 40% y/y in C2017 (vs. SPX up 19% y/y). We see current valuation at 13x our C19E EPS of \$13.49 as attractive. Our PO moves to \$220 on 16x our C2019 EPS.

Figure 23: Relative Valuation – Apple comparable company analysis

Company	Currency	Stock price 14-Jan-18	Market Cap	Enterprise Val	EV/Sales			EV/EBITDA			EV/EBIT			P/E			PEG			EV/NOPAT		
					CY17E	CY18E	CY19E	CY17E	CY18E	CY19E	CY17E	CY18E	CY19E	CY17E	CY18E	CY19E	CY17E	CY18E	CY19E	CY17E	CY18E	CY19E
Apple (Street)	USD	177.09	900,867	747,652	3.2	2.7	2.7	10.1	8.8	8.6	11.7	9.7	9.8	18.4x	15.1x	14.7x	1.6x	1.3x	1.3x	15.6x	12.9x	13.0x
Apple (BoFAML)	USD	177.09	900,867	747,652	3.1x	2.6x	2.3x	10.1x	8.6x	7.7x	11.6x	10.0x	8.8x	18.2x	15.5x	13.1x	1.6x	1.2x	1.0x	15.7x	13.5x	11.9x
Hewlett packard	USD	22.92	37,709	38,531	0.7x	0.7x	0.7x	9.0x	8.4x	8.0x	9.9	9.2	8.5	13.7x	12.5x	11.9x	2.4x	2.3x	2.1x	12.8x	11.9x	11.1x
Intel	USD	43.24	202,363	210,440	3.4x	3.3x	3.2x	8.1x	7.7x	7.5x	11.2	10.5	10.8	13.3x	13.2x	12.9x	1.6x	1.5x	1.5x	14.0x	13.2x	13.5x
Qualcom	USD	65.38	96,788	80,103	3.5x	3.5x	3.3x	9.9x	10.0x	N/A	12.0	12.5	11.9	16.3x	18.0x	17.1x	1.6x	1.7x	1.6x	14.7x	15.3x	14.5x
Samsung electronics	KRW	2410000	311,127,371	252,896,445	1.1x	0.9x	0.9x	3.3x	2.8x	2.7x	4.7	3.9	3.9	8.1x	6.7x	6.5x	0.3x	0.3x	0.2x	6.4x	5.2x	5.2x
Netflix	USD	221.23	95,733	98,875	8.5x	6.6x	5.5x	90.8x	52.0x	33.7x	117.9	62.3	38.1	125.7x	83.5x	53.0x	3.2x	2.1x	1.3x	164.5x	87.0x	53.2x
GOOGL	USD	1130.65	782,449	679,001	7.6x	6.5x	5.4x	15.4x	13.1x	11.2x	21.3	17.5	16.0	26.4x	22.9x	19.1x	1.5x	1.3x	1.1x	26.4x	21.7x	19.8x
MSFT	USD	89.60	691,227	638,231	6.3x	5.8x	5.4x	16.6x	14.0x	12.2x	21.3	18.9	16.5	28.1x	25.4x	22.9x	2.7x	2.4x	2.2x	23.3x	20.6x	18.0x
FB	USD	179.37	523,478	485,189	12.1x	9.0x	7.2x	19.1x	15.3x	12.2x	22.8	18.8	17.9	25.5x	22.3x	18.4x	0.9x	0.8x	0.6x	27.9x	23.0x	22.0x
IBM	USD	163.14	151,034	185,275	2.4x	2.4x	2.3x	9.7x	9.3x	9.3x	12.7	12.3	12.6	11.8x	11.8x	11.4x	3.1x	3.1x	3.0x	13.2x	12.8x	13.1x
ORCL	USD	49.51	204,952	194,473	5.0x	4.8x	4.6x	10.7x	10.2x	9.6x	11.4	10.8	10.3	17.0x	16.1x	15.0x	2.1x	1.9x	1.8x	14.1x	13.3x	12.7x
CSCO	USD	40.87	202,046	166,381	3.5x	3.4x	3.3x	9.7x	9.7x	9.5x	11.1	10.9	10.5	17.0x	16.3x	15.4x	3.5x	3.4x	3.2x	14.2x	13.9x	13.5x
QCOM	USD	65.38	96,788	80,103	3.5x	3.5x	3.3x	9.9x	10.0x	N/A	12.0x	12.5x	11.9x	16.3x	18.0x	17.1x	1.6x	1.7x	1.6x	14.7x	15.3x	14.5x
Visa	USD	120.09	272,148	280,677	15.0x	13.6x	12.5x	21.4x	19.0x	17.2x	22.3	19.8	17.7	33.4x	28.0x	24.7x	2.0x	1.7x	1.5x	38.9x	34.5x	30.9x
Mastercard	USD	162.33	171,853	169,919	13.7x	12.1x	10.8x	23.4x	20.4x	18.1x	24.8	21.4	19.5	35.5x	29.8x	25.6x	2.0x	1.7x	1.4x	34.5x	29.8x	27.1x
Paypal	USD	80.54	96,802	91,881	7.1x	6.0x	5.1x	27.1x	22.6x	19.1x	33.9	27.8	22.8	43.5x	36.0x	29.5x	2.1x	1.7x	1.4x	39.5x	32.4x	26.6x
Median ex AAPL					5.0x	4.8x	4.6x	10.7x	10.2x	11.2x	12.7x	12.5x	12.6x	17.0x	18.0x	17.1x	2.0x	1.7x	1.5x	14.7x	15.3x	14.5x
Average ex AAPL					6.2x	5.5x	4.9x	18.9x	15.0x	13.1x	23.3x	17.9x	15.3x	28.8x	24.0x	20.0x	2.0x	1.8x	1.6x	30.6x	23.3x	19.7x
Max ex AAPL					15.0x	13.6x	12.5x	90.8x	52.0x	33.7x	117.9x	62.3x	38.1x	125.7x	83.5x	53.0x	3.5x	3.4x	3.2x	164.5x	87.0x	53.2x
Min ex AAPL					0.7x	0.7x	0.7x	3.3x	2.8x	2.7x	4.7x	3.9x	3.9x	8.1x	6.7x	6.5x	0.3x	0.3x	0.2x	6.4x	5.2x	5.2x

Source: Bloomberg, BofA Merrill Lynch Global Research estimates

Another way to look at P/E – ex cash

At the end of F18, we expect Apple to have about \$184bn of net cash, cash equivalents and marketable securities. This amount is expected to grow to \$216bn by end-F19. We take out the cash and consider Apple's P/E ratio ex-cash (calculated as stock price per share, ex cash, divided by EPS, ex cash). By looking at the valuation ex cash, we see that AAPL stock is trading at only 13x F18 EPS, ex cash per share, and only 10x F19 EPS, which could provide some downside support.

Our PO of \$220 is based on 14x our F19E EPS, ex cash, which we view as a reasonable multiple.

Figure 24: AAPL's P/E ratio, ex cash

	F18E	F19E
Apple net Cash and Investments (\$mn)	\$184,228	\$215,687
Number of shares (mn)	5059	4859
Total cash per share (\$)	\$36.42	\$44.39
AAPL stock price (01/14/18):	\$177.09	\$177.09
Stock price, ex cash per share	\$140.67	\$132.70
Net Income (\$mn, BofAML estimate)	\$56,906	\$64,799
Tax rate	25.5%	25.5%
Assume cash earnings 1%, taxed at 26%, NI contribution (\$mn)	\$1,373	\$1,607
Net Income, ex cash (\$mn)	\$55,534	\$63,192
Diluted shares (mn)	5,059	4,859
EPS, ex cash, per share	\$10.98	\$13.01
P/E ratio, ex cash, current stock price (\$177.09)	13x	10x
BofAML Apple PO (\$):	\$220	\$220
BofAML PO, ex cash per share:	\$184	\$176
P/E ratio, ex cash, BofAML PO:	17x	14x

Source: Company reports, BofA Merrill Lynch Global Research estimates

Model

Figure 25: Apple Income Statement

	F2017				F2018E				F2016	F2017	F2018E	F2019E	F2020E
	12/16	3/17	6/17	9/17	12/17E	3/18E	6/18E	9/18E					
Income Statement													
Revenue (\$mn)	78351	52896	45408	52579	89140	66547	55944	67401	215639	229234	279031	323012	333965
iPhone revenue	54378	33249	24846	28846	60823	45112	33721	41592	136700	141319	181247	213826	216342
iPad revenue	5533	3889	4969	4831	5254	3698	4727	4596	20628	19222	18275	17930	17588
Mac revenue	7244	5844	5592	7170	7388	5960	5702	7310	22831	25850	26361	26872	27400
iTunes / Software / Services	7172	7041	7266	8501	8750	8449	8574	9946	24348	29980	35719	42506	49732
Other Rev	4024	2873	2735	3231	6925	3328	3220	3955	11132	12863	17428	21877	22903
Cost of Goods Sold (excl. Stock-based comp.)	47946	32088	27704	32433	54548	40546	34003	41002	130607	140171	170099	197690	206913
Gross Profit (excl. Stock-based comp.)	30405	20808	17704	20146	34591	26001	21941	26398	85032	89063	108931	125322	127052
Total Operating Expense (excl. Stock-based co	5790	5494	5743	5852	7033	7178	7299	7771	20798	22879	29281	34911	37244
R&D (excl. Stock-based comp.)	2282	2201	2371	2428	2819	2902	3033	3247	8156	9282	12001	14878	15364
SG&A (excl. Stock-based comp.)	3508	3293	3372	3424	4214	4276	4266	4524	12642	13597	17280	20033	21881
Operating Income (Pre-Stock-based comp.)	24615	15314	11961	14294	27558	18823	14642	18627	64234	66184	79650	90411	89808
Total Operating Expense (incl. Stock-based cor	6817	6494	6720	6811	8082	8227	8348	8820	24239	26842	33477	39467	42160
R&D (incl. Stock-based comp.)	2871	2776	2937	2997	3438	3521	3652	3866	10045	11581	14477	17554	18240
SG&A (incl. Stock-based comp.)	3946	3718	3783	3814	4644	4706	4696	4954	14194	15261	19000	21913	23921
Operating Income (Incl. Stock-based comp.)	23359	14097	10768	13120	26279	17544	13363	17348	60024	61344	74534	84875	83852
Total Interest and Other Income/(Expense)	821	587	540	797	435	465	466	484	1348	2745	1850	2103	2378
Pretax Income (Pre SBC)	25436	15901	12501	15091	27994	19288	15108	19111	65582	68929	81500	92514	92186
Provision for Income Taxes (Credit)	6616	3958	2864	3473	7138	4918	3853	4873	16764	16911	20782	23591	23507
Net Income (Pre Stock-based comp.)	18820	11943	9637	11618	20855	14369	11255	14238	48818	52018	60717	68923	68678
Stock-based comp. (After tax)	-929	-914	-920	-904	-953	-953	-953	-953	-3131	-3667	-3811	-4124	-4437
Net Income (Incl. Stock-based-comp)	17891	11029	8717	10714	19902	13416	10303	13285	45687	48351	56906	64799	64241
Diluted EPS (Pre-Stock-based comp)	3.53	2.27	1.84	2.24	4.06	2.83	2.24	2.86	8.88	9.90	12.00	14.19	14.74
Diluted EPS (Incl. Stock-based comp)	3.36	2.10	1.67	2.07	3.88	2.64	2.05	2.67	8.31	9.21	11.25	13.34	13.79
Diluted Weighted Average Shares	5328	5262	5233	5184	5134	5084	5034	4984	5500	5252	5059	4859	4659
Income Statement (Cont'd)													
% Growth Rates													
Revenues (Y/Y)	3.3%	4.6%	7.2%	12.2%	13.8%	25.8%	23.2%	28.2%	(7.7%)	6.3%	21.7%	15.8%	3.4%
Gross Profit (Y/Y)	(0.7%)	3.5%	8.7%	11.9%	13.8%	25.0%	23.9%	31.0%	(9.7%)	4.7%	22.3%	15.0%	1.4%
Opex (Y/Y)	7.7%	8.2%	11.8%	12.4%	21.5%	30.7%	27.1%	32.8%	7.3%	10.0%	28.0%	19.2%	6.7%
R&D (Y/Y)	17.8%	7.7%	13.9%	16.0%	23.5%	31.9%	27.9%	33.7%	24.9%	13.8%	29.3%	24.0%	3.3%
SG&A (Y/Y)	2.0%	8.5%	10.4%	10.0%	20.1%	29.8%	26.5%	32.1%	(1.6%)	7.6%	27.1%	15.9%	9.2%
Op. Income (Y/Y)	(2.5%)	1.9%	7.2%	11.8%	12.0%	22.9%	22.4%	30.3%	(14.1%)	3.0%	20.3%	13.5%	(0.7%)
Pretax Income (Y/Y)	(0.8%)	4.7%	8.5%	14.2%	10.1%	21.3%	20.9%	26.6%	(13.8%)	5.1%	18.2%	13.5%	(0.4%)
Net Income (Y/Y)	(2.6%)	4.9%	11.8%	18.9%	11.2%	21.6%	18.2%	24.0%	(14.4%)	5.8%	17.7%	13.9%	(0.9%)
EPS (Y/Y)	2.3%	10.4%	16.9%	23.7%	15.5%	25.9%	22.9%	29.0%	(9.9%)	10.8%	22.2%	18.6%	3.4%
Diluted Shares (Y/Y)	(4.8%)	(5.0%)	(4.4%)	(3.9%)	(3.6%)	(3.4%)	(3.8%)	(3.9%)	(5.1%)	(4.5%)	(3.7%)	(4.0%)	(4.1%)
Revenues (Q/Q)	67.2%	(32.5%)	(14.2%)	15.8%	69.5%	(25.3%)	(15.9%)	20.5%					
Gross Profit (Q/Q)	66.2%	(33.1%)	(13.7%)	17.1%	68.2%	(25.7%)	(16.1%)	20.6%					
Opex (Q/Q)	11.2%	(5.1%)	4.5%	1.9%	20.2%	2.1%	1.7%	6.5%					
R&D (Q/Q)	9.0%	(3.5%)	7.7%	2.4%	16.1%	2.9%	4.5%	7.1%					
SG&A (Q/Q)	12.7%	(6.1%)	2.4%	1.5%	23.1%	1.5%	(0.2%)	6.0%					
Op. Income (Q/Q)	92.4%	(37.8%)	(21.9%)	19.5%	92.8%	(31.7%)	(22.2%)	27.2%					
Diluted Shares (Q/Q)	(1.2%)	(1.2%)	(0.5%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)					
% of Revenues													
Gross Profit (Excl. Stock Based Comp Expense)	38.8%	39.3%	38.9%	38.3%	38.8%	39.1%	39.2%	39.2%	39.4%	38.9%	39.0%	38.8%	38.0%
Gross Profit (Incl. Stock Based Comp Expense)	38.5%	38.9%	38.5%	37.9%	38.5%	38.7%	38.8%	38.8%	39.1%	38.5%	38.7%	38.5%	37.7%
Opex	7.4%	10.4%	12.6%	11.1%	7.9%	10.8%	13.0%	11.5%	9.6%	10.0%	10.5%	10.8%	11.2%
R&D	2.9%	4.2%	5.2%	4.6%	3.2%	4.4%	5.4%	4.8%	3.8%	4.0%	4.3%	4.6%	4.6%
SG&A	4.5%	6.2%	7.4%	6.5%	4.7%	6.4%	7.6%	6.7%	5.9%	5.9%	6.2%	6.2%	6.6%
Opex (including Stock Based Comp)	8.7%	12.3%	14.8%	13.0%	9.1%	12.4%	14.9%	13.1%	11.2%	11.7%	12.0%	12.2%	12.6%
EBIT (Pre-Stock Based Comp)	31.4%	29.0%	26.3%	27.2%	30.9%	28.3%	26.2%	27.6%	29.8%	28.9%	28.5%	28.0%	26.9%
Stock Based Comp Expense	(1.2%)	(1.7%)	(2.0%)	(1.7%)	(1.1%)	(1.4%)	(1.7%)	(1.4%)	(1.5%)	(1.6%)	(1.4%)	(1.3%)	(1.3%)
EBIT (Post-Stock Based Comp)	29.8%	26.7%	23.7%	25.0%	29.5%	26.4%	23.9%	25.7%	27.8%	26.8%	26.7%	26.3%	25.1%
Pretax Income	32.5%	30.1%	27.5%	28.7%	31.4%	29.0%	27.0%	28.4%	30.4%	30.1%	29.2%	28.6%	27.6%
Tax Rate	26.0%	24.9%	22.9%	23.0%	25.5%	25.5%	25.5%	25.5%	25.6%	24.5%	25.5%	25.5%	25.5%
Net Income (Operating, Pre-SBC)	22.8%	20.9%	19.2%	20.4%	22.3%	20.2%	18.4%	19.7%	21.2%	21.1%	20.4%	20.1%	19.2%
Net Income (Operating, Post-SBC)	24.0%	22.6%	21.2%	22.1%	23.4%	21.6%	20.1%	21.1%	22.6%	22.7%	21.8%	21.3%	20.6%

Source: BofA Merrill Lynch Global Research estimates, company report

Figure 26: Apple Segments

	F2017				F2018E				F2016	F2017	F2018E	F2019E	F2020E	
	12/16	3/17	6/17	9/17	12/17E	3/18E	6/18E	9/18E						
Income Statement														
Revenue (\$mn)	78351	52896	45408	52579	89140	66547	55944	67401	215639	229234	279031	323012	333965	
iPhone revenue	54378	33249	24846	28846	60823	45112	33721	41592	136700	141319	181247	213826	216342	
iPad revenue	5533	3889	4969	4831	5254	3698	4727	4596	20628	19222	18275	17930	17588	
Mac revenue	7244	5844	5592	7170	7388	5960	5702	7310	22831	25850	26361	26872	27400	
iTunes / Software / Services	7172	7041	7266	8501	8750	8449	8574	9946	24348	29980	35719	42506	49732	
Other Rev	4024	2873	2735	3231	6925	3328	3220	3955	11132	12863	17428	21877	22903	
Cost of Goods Sold (excl. Stock-based comp.)	47946	32088	27704	32433	54548	40546	34003	41002	130607	140171	170099	197690	206913	
Gross Profit (excl. Stock-based comp.)	30405	20808	17704	20146	34591	26001	21941	26398	85032	89063	108931	125322	127052	
Total Operating Expense (excl. Stock-based comp.)	5790	5494	5743	5852	7033	7178	7299	7771	20798	22879	29281	34911	37244	
R&D (excl. Stock-based comp.)	2282	2201	2371	2428	2819	2902	3033	3247	8156	9282	12001	14878	15364	
SG&A (excl. Stock-based comp.)	3508	3293	3372	3424	4214	4276	4266	4524	12642	13597	17280	20033	21881	
Operating Income (Pre-Stock-based comp.)	24615	15314	11961	14294	27558	18823	14642	18627	64234	66184	79650	90411	89808	
Total Operating Expense (incl. Stock-based comp.)	6817	6494	6720	6811	8082	8227	8348	8820	24239	26842	33477	39467	42160	
R&D (incl. Stock-based comp.)	2871	2776	2937	2997	3438	3521	3652	3866	10045	11581	14477	17554	18240	
SG&A (incl. Stock-based comp.)	3946	3718	3783	3814	4644	4706	4696	4954	14194	15261	19000	21913	23921	
Operating Income (Incl. Stock-based comp.)	23359	14097	10768	13120	26279	17544	13363	17348	60024	61344	74534	84875	83852	
Total Interest and Other Income/(Expense)	821	587	540	797	435	465	466	484	1348	2745	1850	2103	2378	
Pretax Income (Pre SBC)	25436	15901	12501	15091	27994	19288	15108	19111	65582	68929	81500	92514	92186	
Provision for Income Taxes (Credit)	6616	3958	2864	3473	7138	4918	3853	4873	16764	16911	20782	23591	23507	
Net Income (Pre Stock-based comp.)	18820	11943	9637	11618	20855	14369	11255	14238	48818	52018	60717	68923	68678	
Stock-based comp. (After tax)	-929	-914	-920	-904	-953	-953	-953	-953	-3131	-3667	-3811	-4124	-4437	
Net Income (Incl. Stock-based-comp)	17891	11029	8717	10714	19902	13416	10303	13285	45687	48351	56906	64799	64241	
Diluted EPS (Pre-Stock-based comp)	3.53	2.27	1.84	2.24	4.06	2.83	2.24	2.86	8.88	9.90	12.00	14.19	14.74	
Diluted EPS (Incl. Stock-based comp)	3.36	2.10	1.67	2.07	3.88	2.64	2.05	2.67	8.31	9.21	11.25	13.34	13.79	
Diluted Weighted Average Shares	5328	5262	5233	5184	5134	5084	5034	4984	5500	5252	5059	4859	4659	
Income Statement (Cont'd)														
% Growth Rates														
Revenues (Y/Y)	3.3%	4.6%	7.2%	12.2%	13.8%	25.8%	23.2%	28.2%	(7.7%)	6.3%	21.7%	15.8%	3.4%	
Gross Profit (Y/Y)	(0.7%)	3.5%	8.7%	11.9%	13.8%	25.0%	23.9%	31.0%	(9.7%)	4.7%	22.3%	15.0%	1.4%	
Opex (Y/Y)	7.7%	8.2%	11.8%	12.4%	21.5%	30.7%	27.1%	32.8%	7.3%	10.0%	28.0%	19.2%	6.7%	
R&D (Y/Y)	17.8%	7.7%	13.9%	16.0%	23.5%	31.9%	27.9%	33.7%	24.9%	13.8%	29.3%	24.0%	3.3%	
SG&A (Y/Y)	2.0%	8.5%	10.4%	10.0%	20.1%	29.8%	26.5%	32.1%	(1.6%)	7.6%	27.1%	15.9%	9.2%	
Op. Income (Y/Y)	(2.5%)	1.9%	7.2%	11.8%	12.0%	22.9%	22.4%	30.3%	(14.1%)	3.0%	20.3%	13.5%	(0.7%)	
Pretax Income (Y/Y)	(0.8%)	4.7%	8.5%	14.2%	10.1%	21.3%	20.9%	26.6%	(13.8%)	5.1%	18.2%	13.5%	(0.4%)	
Net Income (Y/Y)	(2.6%)	4.9%	11.8%	18.9%	11.2%	21.6%	18.2%	24.0%	(14.4%)	5.8%	17.7%	13.9%	(0.9%)	
EPS (Y/Y)	2.3%	10.4%	16.9%	23.7%	15.5%	25.9%	22.9%	29.0%	(9.9%)	10.8%	22.2%	18.6%	3.4%	
Diluted Shares (Y/Y)	(4.8%)	(5.0%)	(4.4%)	(3.9%)	(3.6%)	(3.4%)	(3.8%)	(3.9%)	(5.1%)	(4.5%)	(3.7%)	(4.0%)	(4.1%)	
Revenues (Q/Q)	67.2%	(32.5%)	(14.2%)	15.8%	69.5%	(25.3%)	(15.9%)	20.5%						
Gross Profit (Q/Q)	66.2%	(33.1%)	(13.7%)	17.1%	68.2%	(25.7%)	(16.1%)	20.6%						
Opex (Q/Q)	11.2%	(5.1%)	4.5%	1.9%	20.2%	2.1%	1.7%	6.5%						
R&D (Q/Q)	9.0%	(3.5%)	7.7%	2.4%	16.1%	2.9%	4.5%	7.1%						
SG&A (Q/Q)	12.7%	(6.1%)	2.4%	1.5%	23.1%	1.5%	(0.2%)	6.0%						
Op. Income (Q/Q)	92.4%	(37.8%)	(21.9%)	19.5%	92.8%	(31.7%)	(22.2%)	27.2%						
Diluted Shares (Q/Q)	(1.2%)	(1.2%)	(0.5%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)						
% of Revenues														
Gross Profit (Excl. Stock Based Comp Expense)	38.8%	39.3%	38.9%	38.3%	38.8%	39.1%	39.2%	39.2%	39.4%	38.9%	39.0%	38.8%	38.0%	
Gross Profit (Incl. Stock Based Comp Expense)	38.5%	38.9%	38.5%	37.9%	38.5%	38.7%	38.8%	38.8%	39.1%	38.5%	38.7%	38.5%	37.7%	
Opex	7.4%	10.4%	12.6%	11.1%	7.9%	10.8%	13.0%	11.5%	9.6%	10.0%	10.5%	10.8%	11.2%	
R&D	2.9%	4.2%	5.2%	4.6%	3.2%	4.4%	5.4%	4.8%	3.8%	4.0%	4.3%	4.6%	4.6%	
SG&A	4.5%	6.2%	7.4%	6.5%	4.7%	6.4%	7.6%	6.7%	5.9%	5.9%	6.2%	6.2%	6.6%	
Opex (including Stock Based Comp)	8.7%	12.3%	14.8%	13.0%	9.1%	12.4%	14.9%	13.1%	11.2%	11.7%	12.0%	12.2%	12.6%	
EBIT (Pre-Stock Based Comp)	31.4%	29.0%	26.3%	27.2%	30.9%	28.3%	26.2%	27.6%	29.8%	28.9%	28.5%	28.0%	26.9%	
Stock Based Comp Expense	(1.2%)	(1.7%)	(2.0%)	(1.7%)	(1.1%)	(1.4%)	(1.7%)	(1.4%)	(1.5%)	(1.6%)	(1.4%)	(1.3%)	(1.3%)	
EBIT (Post-Stock Based Comp)	29.8%	26.7%	23.7%	25.0%	29.5%	26.4%	23.9%	25.7%	27.8%	26.8%	26.7%	26.3%	25.1%	
Pretax Income	32.5%	30.1%	27.5%	28.7%	31.4%	29.0%	27.0%	28.4%	30.4%	30.1%	29.2%	28.6%	27.6%	
Tax Rate	26.0%	24.9%	22.9%	23.0%	25.5%	25.5%	25.5%	25.5%	25.6%	24.5%	25.5%	25.5%	25.5%	
Net Income (Operating, Pre-SBC)	22.8%	20.9%	19.2%	20.4%	22.3%	20.2%	18.4%	19.7%	21.2%	21.1%	20.4%	20.1%	19.2%	
Net Income (Operating, Post-SBC)	24.0%	22.6%	21.2%	22.1%	23.4%	21.6%	20.1%	21.1%	22.6%	22.7%	21.8%	21.3%	20.6%	

Source: BofA Merrill Lynch Global Research estimates, company report

Figure 27: Apple Balance Sheet

	F2017					F2018E								
	12/16	3/17	6/17	9/17		12/17E	3/18E	6/18E	9/18E	F2016	F2017	F2018E	F2019E	F2020E
Balance Sheet														
Total Assets	\$331,141	\$334,532	\$345,173	\$375,319	\$389,079	\$393,807	\$404,958	\$423,369		\$321,686	\$375,319	\$423,369	\$486,112	\$542,535
Total Current Assets	103,332	101,990	112,875	128,645	141,044	144,800	156,568	173,419		106,869	128,645	173,419	230,359	283,461
Cash/Equivalents	16,371	15,157	18,571	20,289	36,021	40,291	51,814	58,434		20,484	20,289	58,434	107,202	156,252
ST Investments	44,081	51,944	58,188	53,892	53,892	53,892	53,892	53,892		46,671	53,892	53,892	53,892	53,892
Accounts Receivable	14,057	11,579	12,399	17,874	15,993	14,567	15,276	22,913		15,754	17,874	22,913	29,658	32,956
Deferred Tax Assets	0	0	0	0	0	0	0	0		0	0	0	0	0
Inventory	2,712	2,910	3,146	4,855	3,085	3,677	3,861	6,138		2,132	4,855	6,138	7,254	7,694
Other Current Assets	26,111	20,400	20,571	31,735	32,052	32,373	31,725	32,043		21,828	31,735	32,043	32,353	32,667
PP&E	26,510	27,163	29,286	33,783	38,305	42,875	46,605	52,565		27,010	33,783	52,565	75,579	101,286
LT Investments	185,638	189,740	184,757	194,714	191,451	187,752	183,611	179,110		170,430	194,714	179,110	161,800	139,313
Goodwill	5,423	5,473	5,661	5,717	5,717	5,717	5,717	5,717		5,414	5,717	5,717	5,717	5,717
Intangible Assets	2,848	2,617	2,444	2,298	2,298	2,298	2,298	2,298		3,206	2,298	2,298	2,298	2,298
Other Assets	7,390	7,549	10,150	10,162	10,264	10,366	10,159	10,261		8,757	10,162	10,261	10,360	10,460
Total Liabilities	\$198,751	\$200,450	\$212,748	\$241,272	\$227,964	\$220,553	\$222,963	\$229,616		\$193,437	\$241,272	\$229,616	\$235,568	\$236,107
Total Current Liabilities	84,130	73,342	81,302	100,814	87,420	79,976	82,481	89,115		79,006	100,814	89,115	94,999	95,507
Accounts Payable	38,510	28,573	31,915	49,049	43,813	36,105	39,171	45,558		37,294	49,049	45,558	51,150	51,400
Accrued Liabilities	31,628	30,778	30,912	33,292	33,607	33,871	33,310	33,557		30,107	33,292	33,557	33,849	34,107
Deferred Revenue - Current	7,889	7,682	7,608	7,548	7,606	7,610	7,574	7,564		8,080	7,548	7,564	7,604	7,607
Other Current Liabilities (accrued exp)	23,739	23,096	23,304	25,744	26,001	26,261	25,736	25,994		22,027	25,744	25,994	26,246	26,500
Current Portion LT Debt/commercal paper	13,992	13,991	18,475	18,473	10,000	10,000	10,000	10,000		11,605	18,473	10,000	10,000	10,000
LT Debt	73,557	84,531	89,864	97,207	97,207	97,207	97,207	97,207		75,427	97,207	97,207	97,207	97,207
Other LT Liabilities	41,064	42,577	41,582	43,251	43,337	43,370	43,275	43,294		39,004	43,251	43,294	43,361	43,393
Deferred Revenue - Non-Current	3,163	3,107	2,984	2,836	2,922	2,955	2,860	2,879		2,930	2,836	2,879	2,946	2,978
Deferred Tax Liabilities	0	0	0	0	0	0	0	0		0	0	0	0	0
Other Non-Current Liabilities	37,901	39,470	38,598	40,415	40,415	40,415	40,415	40,415		36,074	40,415	40,415	40,415	40,415
Shareholders' Equity	\$132,390	\$134,082	\$132,425	\$134,047	\$161,114	\$173,254	\$181,995	\$193,753		\$128,249	\$134,047	\$193,753	\$250,545	\$306,428
Common Stock	32,144	33,579	34,445	35,867	35,867	35,867	35,867	35,867		31,251	35,867	35,867	35,867	35,867
Paid-in Capital	0	0	0	0	0	0	0	0		0	0	0	0	0
Preferred Stock	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
Retained Earnings (Deficit)	100,001	100,925	98,525	98,330	125,397	137,537	146,278	158,036		96,364	98,330	158,036	214,828	270,711
Other comprehensive income	245	(422)	(545)	(150)	(150)	(150)	(150)	(150)		634	(150)	(150)	(150)	(150)
Treasury Stock	0	0	0	0	0	0	0	0		0	0	0	0	0
Total Liabilities & Shareholders' Equity	331,141	334,532	345,173	375,319	389,079	393,807	404,958	423,369		321,686	375,319	423,369	486,112	542,535
Balance Sheet Statistics														
Book Value per Share	\$24.85	\$25.48	\$25.30	\$25.86	\$31.38	\$34.08	\$36.16	\$38.88		\$23.32	\$25.52	\$38.30	\$51.57	\$65.78
Tangible Book Value per Share	\$23.30	\$23.95	\$23.75	\$24.31	\$29.82	\$32.50	\$34.56	\$37.27		\$21.75	\$24.00	\$36.72	\$49.92	\$64.06
Debt/Equity	66%	73%	82%	86%	67%	62%	59%	55%		68%	86%	55%	43%	35%
Net Cash & Investments	\$158,541	\$158,319	\$153,177	\$153,215	\$174,158	\$174,727	\$182,110	\$184,228		\$150,553	\$153,215	\$184,228	\$215,687	\$242,250
Net Cash & Investments per Share	\$29.76	\$30.09	\$29.27	\$29.56	\$33.93	\$34.37	\$36.18	\$36.97		\$27.37	\$29.17	\$36.42	#DIV/0!	#DIV/0!
Inventory Turns	79.2x	45.7x	36.6x	32.4x	55.0x	48.0x	36.1x	32.8x		58.3x	40.1x	30.9x	29.5x	27.7x
Days of Inventory	5	8	10	11	7	8	10	11		6	9	12	12	13
Days Accts. Receivable	17	22	24	26	17	21	24	25		27	26	26	29	34
Days payables	71	94	98	112	77	89	100	93		100	111	100	88	89
Cash cycle	(49)	(64)	(65)	(75)	(53)	(61)	(66)	(57)		(67)	(75)	(62)	(47)	(42)
Op. WC/Revenue	(7%)	(7%)	(9%)	(13%)	(7%)	(7%)	(9%)	(6%)		(9%)	(11%)	(6%)	(4%)	(3%)
ROE	55%	33%	26%	32%	54%	32%	23%	28%		38%	38%	35%	34%	26%
ROA	22%	13%	10%	12%	21%	14%	10%	13%		17%	15%	15%	15%	13%
Drivers:														
Inventory Turns	70.7x	44.1x	35.2x	26.7x	70.7x	44.1x	35.2x	26.7x		61.3x	28.9x	27.7x	27.3x	26.9x
Inventory Days	5	8	10	13	5	8	10	13		6	12	13	13	13
Days Accts. Receivable	16	20	25	31	16	20	25	31		26	28	30	33	36
Days Payables	72	80	104	136	72	80	104	100		103	126	96	93	89
Cash Cycle	(51)	(52)	(69)	(92)	(51)	(52)	(69)	(56)		(71)	(85)	(54)	(47)	(41)

Source: BofA Merrill Lynch Global Research estimates, company report

Figure 28: Apple Cash Flow Statement

	F2017				F2018E				F2016	F2017	F2018E	F2019E	F2020E
	12/16	3/17	6/17	9/17	12/17E	3/18E	6/18E	9/18E					
Cash Flow Statement													
Cash from Operating Activities	\$27,056	\$12,523	\$8,363	\$15,656	\$23,314	\$11,770	\$18,371	\$15,582	\$65,824	\$63,598	\$69,037	\$84,914	\$86,591
Net Income	17,891	11,029	8,717	10,714	19,902	13,416	10,303	13,285	45,687	48,351	56,906	64,799	64,241
Depreciation and Amortization	2,987	2,332	2,354	2,484	2,534	2,873	3,216	3,495	10,505	10,157	12,118	12,091	15,199
Stock Based Compensation	1,256	1,217	1,193	1,174	1,279	1,279	1,279	1,279	4,210	4,840	5,116	5,536	5,956
Deferred Taxes	1,452	1,370	1,942	1,202	1,202	1,202	1,202	1,202	4,938	5,966	4,808	4,808	4,808
Other - Loss on disposition of PPE	(274)	65	67	(24)	0	0	0	0	0	(166)	0	0	0
Change in Working Capital	3,744	(3,490)	(5,910)	106	(1,603)	(7,001)	2,372	(3,679)	484	(5,550)	(9,910)	(2,320)	(3,613)
Accounts Receivable	1,697	2,486	(802)	(5,474)	1,881	1,425	(709)	(7,637)	1,095	(2,093)	(5,039)	(6,746)	(3,298)
Inventory	(580)	(198)	(236)	(1,709)	1,770	(592)	(184)	(2,277)	217	(2,723)	(1,283)	(1,116)	(440)
Other Current Assets	(1,821)	5,437	(3,533)	(9,655)	(317)	(321)	647	(317)	1,039	(9,572)	(308)	(311)	(314)
Accounts Payable	2,460	(9,322)	1,650	14,830	(5,236)	(7,708)	3,066	6,387	1,791	9,618	(3,491)	5,592	250
Deferred Revenue	42	(263)	(197)	(208)	315	264	(561)	247	(1,554)	(626)	265	292	258
Other Asset and Other Liabilities	1,946	(1,630)	(2,792)	2,322	(15)	(69)	112	(83)	(2,104)	(154)	(56)	(32)	(69)
Cash from Investing Activities	(\$19,122)	(\$14,202)	(\$3,180)	(\$9,942)	(\$3,793)	(\$3,743)	(\$2,805)	(\$4,955)	(\$45,977)	(\$46,446)	(\$15,296)	(\$17,795)	(\$18,419)
Capital Expenditures	(3,334)	(2,975)	(2,277)	(3,865)	(3,793)	(3,743)	(2,805)	(4,955)	(12,734)	(12,451)	(15,296)	(17,795)	(18,419)
Sale of PP&E	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds of investments	38,691	34,192	23,211	30,245	0	0	0	0	111,794	126,339	0	0	0
Purchase of Investments	(54,272)	(45,549)	(23,960)	(35,705)	0	0	0	0	(142,428)	(159,486)	0	0	0
Acquisitions/intang assets	(103)	(90)	(264)	(216)	0	0	0	0	(1,111)	(673)	0	0	0
Other/Strategic investments	(104)	220	110	(401)	0	0	0	0	(1,498)	(175)	0	0	0
Cash from Financing Activities	(\$12,047)	\$465	(\$1,769)	(\$3,996)	(\$3,789)	(\$3,758)	(\$4,042)	(\$4,008)	(\$20,483)	(\$17,347)	(\$15,597)	(\$18,351)	(\$19,122)
Proceeds from the issuance of term debt, net	0	10,975	10,750	6,937	6,937	6,937	6,937	6,937	22,454	28,662	27,748	27,748	27,748
Repayments of term debt	0	0	(3,500)	0	0	0	0	0	0	(3,500)	0	0	0
Issuance of Common	0	273	1	281	0	0	0	0	495	555	0	0	0
Treasury Stock	(10,851)	(7,161)	(7,093)	(7,795)	(7,500)	(7,500)	(7,500)	(7,500)	(29,722)	(32,900)	(30,000)	(32,000)	(32,000)
Preferred Stock	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	(451)	(112)	(549)	(135)	0	0	0	0	(1,163)	(1,247)	0	0	0
Dividends	(3,130)	(3,004)	(3,365)	(3,270)	(3,226)	(3,195)	(3,479)	(3,445)	(12,150)	(12,769)	(13,345)	(14,099)	(14,870)
ESOP Proceeds	0	0	0	0	0	0	0	0	0	0	0	0	0
Foreign Exchange Effects	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Change in Cash	(\$4,113)	(\$1,214)	\$3,414	\$1,718	\$15,732	\$4,269	\$11,523	\$6,620	(\$636)	(\$195)	\$38,145	\$48,768	\$49,050
Net Cash - Beginning Balance	20,484	16,371	15,157	18,571	20,289	36,021	40,291	51,814	21,120	20,484	20,289	58,434	107,202
Net Cash - Ending Balance	16,371	15,157	18,571	20,289	36,021	40,291	51,814	58,434	20,484	20,289	58,434	107,202	156,252
Free Cash Flow													
Free Cash Flow	\$23,722	\$9,548	\$6,086	\$11,791	\$19,521	\$8,027	\$15,566	\$10,628	\$53,090	\$51,147	\$53,742	\$67,119	\$68,172
Cash From Operations	27,056	12,523	8,363	15,656	23,314	11,770	18,371	15,582	65,824	63,598	69,037	84,914	86,591
Capital Expenditures	(3,334)	(2,975)	(2,277)	(3,865)	(3,793)	(3,743)	(2,805)	(4,955)	(12,734)	(12,451)	(15,296)	(17,795)	(18,419)
Free Cash Flow Per Share	\$4.45	\$1.81	\$1.16	\$2.27	\$3.80	\$1.58	\$3.09	\$2.13	\$9.65	\$9.74	\$10.62	\$13.81	\$14.63
Free Cash Flow (after acq.)	23,619	9,458	5,822	11,575	19,521	8,027	15,566	10,628	51,979	50,474	53,742	67,119	68,172
Drivers													
Depreciation & amortization	2,987	2,332	2,354	2,484	2,534	2,873	3,216	3,495	10,505	10,157	12,118	12,091	15,199
Cap Ex/Depreciation	1.1	1.3	1.0	1.6	1.5	1.3	0.9	1.4	1.2	1.2	1.3	1.5	1.2
Cap Ex/Sales	(4%)	(6%)	(5%)	(7%)	(4%)	(6%)	(5%)	(7%)	(6%)	(5%)	(5%)	(182%)	(114%)
Annual Depr. % of PP&E (prior qtr)	44%	35%	35%	34%	30%	30%	30%	30%	44%	37%	30%	20%	18%

Source: BofA Merrill Lynch Global Research estimates, company report

Price objective basis & risk

Apple Inc. (AAPL)

Our PO of \$220 is based on 16x our C2019 EPS estimate of \$13.49. Our target multiple compares to the long-term historical range of 9-15x (median 12x). We believe a higher than historical multiple is justified given the anticipation of a strong upcoming iPhone X cycle where we expect smoother, more consistent growth in iPhone units. We also think a 15x multiple is justified given large cash balance and opportunity to diversify into new end markets and, and increasing mix of services. The multiple also reflects the potential for new repatriation tax laws that would allow for repatriation of a significant portion of the company's foreign cash.

Downside risks are: the potential implementation of a border adjusted tax, trade conflicts and a stronger USD. Other risks are: Apple's significant exposure to the iPhone, commoditization in the smartphone market, intensifying competition in the tablet market, managing beat and raise expectations for EPS estimates, and accelerating pace of product innovation impacting margins.

Analyst Certification

I, Wamsi Mohan, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Special Disclosures

BofA Merrill Lynch is currently acting as financial advisor to Broadcom Limited in connection with its proposed acquisition of Qualcomm Incorporated, which was announced on November 6, 2017.

US - IT Hardware and Technology Supply Chain Coverage Cluster

Investment rating	Company	BofA Merrill Lynch ticker	Bloomberg symbol	Analyst
BUY				
	Amphenol	APH	APH US	Wamsi Mohan
	Apple Inc.	AAPL	AAPL US	Wamsi Mohan
	Arrow Electronics Inc.	ARW	ARW US	Param Singh, CFA
	Flex Ltd.	FLEX	FLEX US	Ruplu Bhattacharya
	HP Inc.	HPQ	HPQ US	Wamsi Mohan
	International Business Machines Corp.	IBM	IBM US	Wamsi Mohan
	Pure Storage	PSTG	PSTG US	Wamsi Mohan
	Sensata Technologies Holding N.V.	ST	ST US	Wamsi Mohan
	TE Connectivity Ltd.	TEL	TEL US	Wamsi Mohan
	Tech Data Corp.	TECD	TECD US	Param Singh, CFA
	Teradata Corporation	TDC	TDC US	Wamsi Mohan
	Western Digital Corporation	WDC	WDC US	Wamsi Mohan
NEUTRAL				
	Celestica	CLS	CLS US	Ruplu Bhattacharya
	Celestica	YCLS	CLS CN	Ruplu Bhattacharya
	Corning Inc.	GLW	GLW US	Wamsi Mohan
	Jabil Inc.	JBL	JBL US	Ruplu Bhattacharya
	NetApp Inc.	NTAP	NTAP US	Wamsi Mohan
	Sanmina Corporation	SANM	SANM US	Ruplu Bhattacharya
UNDERPERFORM				
	3D Systems Corporation	DDD	DDD US	Wamsi Mohan
	Avnet Inc.	AVT	AVT US	Param Singh, CFA
	Hewlett-Packard Enterprise	HPE	HPE US	Wamsi Mohan
	Seagate Technology	STX	STX US	Wamsi Mohan
	Stratasys Ltd.	SSYS	SSYS US	Wamsi Mohan
	Tintri, Inc.	TNTR	TNTR US	Wamsi Mohan
	Vishay Intertechnology, Inc.	VSH	VSH US	Ruplu Bhattacharya
RSTR				
	Nutanix Inc	NTNX	NTNX US	Wamsi Mohan

iQmethodSM Measures Definitions

Business Performance	Numerator	Denominator
Return On Capital Employed	NOPAT = (EBIT + Interest Income) * (1 - Tax Rate) + Goodwill Amortization	Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill Amortization
Return On Equity	Net Income	Shareholders' Equity
Operating Margin	Operating Profit	Sales
Earnings Growth	Expected 5-Year CAGR From Latest Actual	N/A
Free Cash Flow	Cash Flow From Operations – Total Capex	N/A
Quality of Earnings		
Cash Realization Ratio	Cash Flow From Operations	Net Income
Asset Replacement Ratio	Capex	Depreciation
Tax Rate	Tax Charge	Pre-Tax Income
Net Debt-To-Equity Ratio	Net Debt = Total Debt, Less Cash & Equivalents	Total Equity
Interest Cover	EBIT	Interest Expense
Valuation Toolkit		
Price / Earnings Ratio	Current Share Price	Diluted Earnings Per Share (Basis As Specified)
Price / Book Value	Current Share Price	Shareholders' Equity / Current Basic Shares
Dividend Yield	Annualised Declared Cash Dividend	Current Share Price
Free Cash Flow Yield	Cash Flow From Operations – Total Capex	Market Cap. = Current Share Price * Current Basic Shares
Enterprise Value / Sales	EV = Current Share Price * Current Shares + Minority Equity + Net Debt + Other LT Liabilities	Sales
EV / EBITDA	Enterprise Value	Basic EBIT + Depreciation + Amortization

iQmethodSM is the set of BofA Merrill Lynch standard measures that serve to maintain global consistency under three broad headings: Business Performance, Quality of Earnings, and validations. The key features of iQmethod are: A consistently structured, detailed, and transparent methodology. Guidelines to maximize the effectiveness of the comparative valuation process, and to identify some common pitfalls.

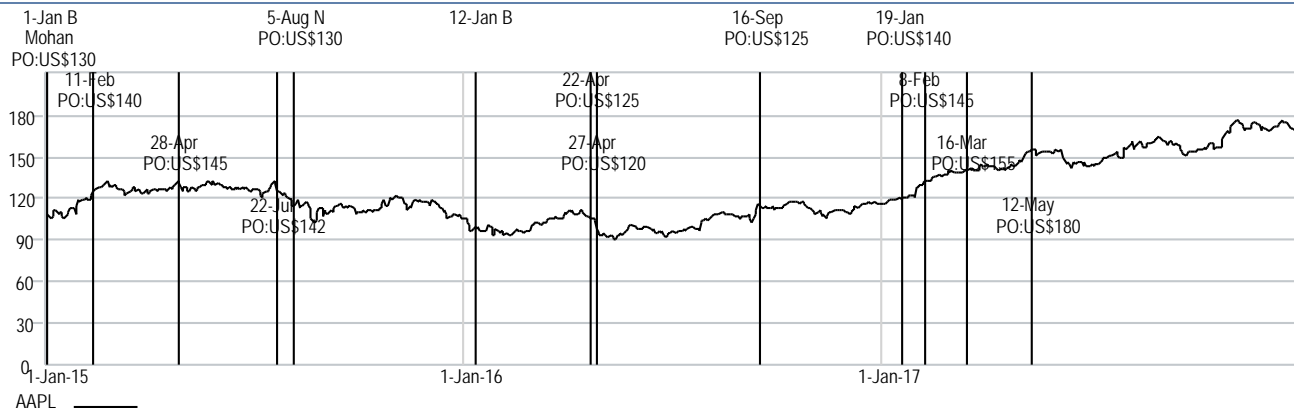
iQdatabase[®] is our real-time global research database that is sourced directly from our equity analysts' earnings models and includes forecasted as well as historical data for income statements, balance sheets, and cash flow statements for companies covered by BofA Merrill Lynch.

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Disclosures

Important Disclosures

AAPL Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of December 31, 2017 or such later date as indicated.

Equity Investment Rating Distribution: Technology Group (as of 31 Dec 2017)

Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	133	58.85%	Buy	69	51.88%
Hold	31	13.72%	Hold	15	48.39%
Sell	62	27.43%	Sell	29	46.77%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2017)

Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	1561	52.31%	Buy	975	62.46%
Hold	646	21.65%	Hold	406	62.85%
Sell	777	26.04%	Sell	372	47.88%

* Issuers that were investment banking clients of BofA Merrill Lynch or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster*
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

* Ratings dispersions may vary from time to time where BofA Merrill Lynch Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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