

# More controversies than expected, but reiterate Buy ahead of iPhone 8 cycle

Reiterate Rating: BUY | PO: 155.00 USD | Price: 147.51 USD

Equity | 03 May 2017

## Qualcomm royalty questions; Services, China growth

Shares of Apple could be temporarily under pressure given the following concerns: (1) gross margins likely benefited q/q from lower accrual of QCOM royalties by our estimate (Fig 1), (2) services growth deceleration from 20%+ to 18% although some adjustments (Fig 2) alleviate these concerns, (3) China growth weak despite easy comps as sales of 6/6S more challenged given no form factor update and market turning more competitive, and (4) a slower rate of switching when adjusted for the China slowdown. However, despite these concerns, we continue to like: (1) the increased capital return (up by \$50bn) and the expected return of another \$89bn over 2 years or 12% of market cap, (2) potential for significant cash repatriation and associated optionality for incremental capital return and M&A, (3) iPhone 8 super long cycle with higher ASPs, and (4) increased traction in services including App Store, content, Music, Apple Pay, etc. Reiterate Buy.

## Gross margins and ASP puts and takes

In our opinion Apple could be accruing for QCOM royalties at a lower rate vs history, which Apple deems appropriate and we estimate a -100bps q/q tailwind although there are many moving pieces (see Fig 1 for details). We expect Dec to March bridge of GM as FX (-100bps q/q), volume leverage (-50bps), commodity pricing (-50bps) vs warranty accrual (+50bps), positive mix (+100bps) as the remaining moving pieces. The ASP q/q decline of \$40 can be explained by \$14 for FX and \$26 for seasonally lower memory capacity of iPhones. Apple Watch (est \$4.7bn LTM revs)+ beats (est \$500mn) + airpods (~200mn although supply constrained) are as large as a fortune 500 company (\$5bn).

## Main risk remains FX and commodities into iPhone 8 cycle

We model GM in 2H17 to remain robust given our expectation of ASP increases on iPhone 8, however potentially large swing factors include: (1) FX (particularly relative to China which faced a 5% headwind and weaker demand), (2) tight commodity pricing (memory), where management noted a continued tight market (positive for WDC).

## Adjusting estimates, PO stays at \$155

Our PO of \$155 is unchanged, based on 14x C18E EPS of \$11.14.

### Estimates (Sep)

(US\$)	2015A	2016A	2017E	2018E	2019E
EPS	9.22	8.31	9.22	10.94	12.06
GAAP EPS	9.22	8.36	9.18	10.94	12.06
EPS Change (YoY)	42.9%	-9.9%	11.0%	18.7%	10.2%
Consensus EPS (Bloomberg)			8.96	10.24	10.75
DPS	1.98	2.19	2.39	2.64	2.90

### Valuation (Sep)

	2015A	2016A	2017E	2018E	2019E
P/E	16.0x	17.8x	16.0x	13.5x	12.2x
GAAP P/E	16.0x	17.6x	16.1x	13.5x	12.2x
Dividend Yield	1.3%	1.5%	1.6%	1.8%	2.0%
EV / EBITDA*	11.0x	12.6x	12.1x	10.8x	9.9x
Free Cash Flow Yield*	8.2%	6.2%	7.5%	7.2%	7.6%

\* For full definitions of *Qmethod* measures, see page 11.

BofA Merrill Lynch does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Refer to important disclosures on page 12 to 14. Analyst Certification on page 10. Price Objective Basis/Risk on page 10.

11740541

Timestamp: 03 May 2017 01:05AM EDT

### Key Changes

(US\$)	Previous	Current
2017E Rev (m)	240,968.1	233,295.7
2018E Rev (m)	272,471.3	270,957.3
2019E Rev (m)	304,667.2	303,968.7
2017E EPS	9.47	9.22
2018E EPS	10.93	10.94
2019E EPS	12.04	12.06

**Wamsi Mohan**  
Research Analyst  
MLPF&S  
+1 646 855 3854  
wamsi.mohan@baml.com

**Ruplu Bhattacharya**  
Research Analyst  
MLPF&S  
+1 646 855 0315  
ruplu.bhattacharya@baml.com

**Param Singh, CFA**  
Research Analyst  
MLPF&S  
+1 646 855 4256  
param.singh@baml.com

**Jennifer F. Lang**  
Research Analyst  
MLPF&S  
+1 646 855 2590  
jennifer.f.lang@baml.com

### Stock Data

Price	147.51 USD
Price Objective	155.00 USD
Date Established	16-Mar-2017
Investment Opinion	B-1-7
52-Week Range	89.47 USD - 148.09 USD
Mkt Val (mn) / Shares Out (mn)	854,536 USD / 5,793.1
Average Daily Value (mn)	3379.95 USD
BofAML Ticker / Exchange	AAPL / NAS
Bloomberg / Reuters	AAPL US / AAPL.OQ
ROE (2017E)	33.1%
Net Dbt to Eqty (Sep-2016A)	51.9%

**iQmethod<sup>SM</sup> – Bus Performance\***

(US\$ Millions)	2015A	2016A	2017E	2018E	2019E
Return on Capital Employed	28.7%	20.7%	18.9%	17.8%	15.7%
Return on Equity	46.2%	36.9%	33.1%	27.9%	22.1%
Operating Margin	32.0%	29.8%	29.0%	28.6%	27.8%
Free Cash Flow	70,019	53,090	63,707	61,820	64,865

**iQmethod<sup>SM</sup> – Quality of Earnings\***

(US\$ Millions)	2015A	2016A	2017E	2018E	2019E
Cash Realization Ratio	1.5x	1.4x	1.6x	1.4x	1.4x
Asset Replacement Ratio	1.0x	1.2x	1.4x	1.7x	1.7x
Tax Rate	26.4%	25.6%	25.7%	26.0%	26.0%
Net Debt-to-Equity Ratio	36.3%	51.9%	29.0%	-6.5%	-26.1%
Interest Cover	NM	NM	NM	NM	NM

**Income Statement Data (Sep)**

(US\$ Millions)	2015A	2016A	2017E	2018E	2019E
Sales	233,715	215,639	233,296	270,957	303,969
% Change	27.9%	-7.7%	8.2%	16.1%	12.2%
Gross Profit	94,201	85,032	90,741	104,646	114,912
% Change	32.7%	-9.7%	6.7%	15.3%	9.8%
EBITDA	86,073	74,739	77,809	87,097	95,569
% Change	36.0%	-13.2%	4.1%	11.9%	9.7%
Net Interest & Other Income	1,285	1,348	2,048	2,170	32
<b>Net Income (Adjusted)</b>	<b>53,394</b>	<b>45,687</b>	<b>48,317</b>	<b>55,120</b>	<b>58,318</b>
% Change	35.1%	-14.4%	5.8%	14.1%	5.8%

**Free Cash Flow Data (Sep)**

(US\$ Millions)	2015A	2016A	2017E	2018E	2019E
Net Income from Cont Operations (GAAP)	56,034	49,114	51,762	59,033	62,542
Depreciation & Amortization	11,257	10,505	10,155	9,492	11,085
Change in Working Capital	11,647	484	9,096	2,858	2,702
Deferred Taxation Charge	1,382	4,938	5,562	5,480	5,480
Other Adjustments, Net	946	783	1,252	1,375	1,484
Capital Expenditure	(11,247)	(12,734)	(14,122)	(16,418)	(18,429)
<b>Free Cash Flow</b>	<b>70,019</b>	<b>53,090</b>	<b>63,707</b>	<b>61,820</b>	<b>64,865</b>
% Change	39.6%	-24.2%	20.0%	-3.0%	4.9%

**Balance Sheet Data (Sep)**

(US\$ Millions)	2015A	2016A	2017E	2018E	2019E
Cash & Equivalents	21,120	20,484	47,025	109,458	172,188
Trade Receivables	16,849	15,754	18,930	20,646	22,639
Other Current Assets	51,409	70,631	74,678	75,150	75,630
Property, Plant & Equipment	22,471	27,010	30,160	35,493	40,975
Other Non-Current Assets	178,630	187,807	205,281	206,947	208,881
<b>Total Assets</b>	<b>290,479</b>	<b>321,686</b>	<b>376,075</b>	<b>447,693</b>	<b>520,313</b>
Short-Term Debt	10,999	11,605	10,000	10,000	10,000
Other Current Liabilities	69,611	67,401	74,970	80,035	85,232
Long-Term Debt	53,463	75,427	84,531	84,531	84,531
Other Non-Current Liabilities	37,051	39,004	42,499	42,552	42,604
<b>Total Liabilities</b>	<b>171,124</b>	<b>193,437</b>	<b>212,000</b>	<b>217,118</b>	<b>222,367</b>
<b>Total Equity</b>	<b>119,355</b>	<b>128,249</b>	<b>164,075</b>	<b>230,575</b>	<b>297,946</b>
<b>Total Equity &amp; Liabilities</b>	<b>290,479</b>	<b>321,686</b>	<b>376,075</b>	<b>447,693</b>	<b>520,313</b>

\* For full definitions of iQmethod<sup>SM</sup> measures, see page 11.

**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 in the upcoming iPhone 8 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 22,913,330

**Quarterly Earnings Estimates**

	2016	2017
Q1	3.28A	3.36A
Q2	1.90A	2.10A
Q3	1.42A	1.61E
Q4	1.67A	2.13E

## Key points to focus on post the quarter

1. Apple is accruing for Samsung royalty payments at a rate at which management believes it will actually pay. However, this rate could be different from the rate accrued at in the past. Apple reported F2Q17 gross margin at the high end of the guidance range 38.0-39.0%. We estimate a 50-100bps q/q benefit, between F1Q17 and F2Q17, because of change in the accrual rate related to royalty payments to Qualcomm.

**Figure 1: Estimating q/q benefit from Qualcomm payments withholding**

Gross Margin F1Q17	38.50%
<b>Headwinds</b>	
Negative leverage from lower volume	-0.50%
Headwind from FX	-1.00%
Component cost increases	-0.50%
<b>Tailwinds</b>	
Warranty Accruals	0.50%
Better mix (7 Plus)	1.00%
Calculated F2Q17 Gross Margin	38.00%
Reported F2Q17 Gross Margin	38.90%
Expected benefit from Qualcomm withholding	0.90%

Source: Company reports, BofA Merrill Lynch Global Research estimates

2. Services rev grew 17.5% y/y which is consistent with the growth rate seen in F1Q17 (after adjusting for one-time items, as shown in Figure 2).

**Figure 2: Services growth adjusted for one-time items**

	F1Q16	F2Q16	F1Q17	F2Q17
Services Rev (\$mn, reported)	\$6,056	\$5,991	\$7,172	\$7,041
<b>Adjustments:</b>				
Patent infringement payment (\$mn)		(\$548)		
Additional week (14th week)			(\$700)	
Adjusted Services Rev (\$mn)	\$5,508	\$5,991	\$6,472	\$7,041
reported services rev y/y			18.4%	17.5%
adjusted services rev y/y			17.5%	17.5%

Source: Company reports, BofA Merrill Lynch Global Research estimates

3. iPhone ASP change: iPhone ASP in F2Q17 was \$655, which was \$40 lower sequentially than the \$695 reported in F1Q17, but \$13 higher than the \$642 reported in the March 2016 quarter. In Figure 3, we split out the contribution of mix and FX to the total dollar ASP change.

**Figure 3: Parsing iPhone ASP q/q and y/y change into Mix and FX**

	F2Q16	F1Q17	Mix	FX	F2Q17	Change
q/q		\$695	(\$26)	(\$14)	\$655	(\$40)
y/y	\$642		\$26	(\$13)	\$655	\$13

Source: Company reports, BofA Merrill Lynch Global Research estimates

4. Apple could be facing some challenges at the lower end of its iPhone portfolio in China: Revenue growth y/y in Greater China for the first two quarters of F17 improved significantly over the F2H16. For F1H17, revenue declined 13% y/y vs. the 32% y/y decline seen in F2H16. However, in our opinion, Apple is experiencing more challenges at the lower end of its iPhone portfolio in China. iPhone 7/7 Plus demand remains strong. However, Apple referred to a "pause" in iPhone demand, which we assume refers to sales of iPhone 6/6S. (We don't view iPhone SE as a big contender in China anyway given a general preference for larger screen size phones.)
5. Apple mentioned that revenue from wearable products (including Apple Watch, AirPods and Beats headphones) over the last four quarters was the size of a Fortune 500 company. Over the last four quarters, we estimate \$4.7bn

revenue from Apple Watch, \$0.5bn revenue from Beats and \$150mn from AirPods.

## iPhones mostly in line in 2Q, guidance slightly lower

Apple reported F2Q17 revenue of \$52.9bn, which came in lower than our/Street estimates of \$54.7bn/\$53.1bn, but EPS of \$2.10 was above our/Street estimate of \$2.08/\$2.02, respectively. Gross margin (including stock based comp) came in at 38.9% (at high end of guidance) and compared to our/Street prior estimates of 38.6%/38.7%. iPhone unit sales were 50.8mn vs. our expectation of 51mn.

Apple guided June quarter revenues lower than expected to \$43.5bn - \$45.5bn, which at the mid-point (\$44.5bn) compares to our/Street prior \$50.4bn/\$45.7bn. Gross margin (incl. stock comp) guidance was in line with expectations (37.5% - 38.5%, 38.0% mid-point, which compares to our/Street prior estimates of 38.5%/38.3%, respectively). The guidance implies an EPS range of \$1.45 - 1.61 (\$1.53 at the mid-point), which is lower than the prior Street estimate of \$1.62 and our prior estimate of \$1.79. OpEx was guided to \$6.6bn-6.7bn, which is higher than our prior estimate.

We expect FX to have a negative \$1bn impact on F3Q17 revenues. Gross margin impact q/q from FX is about -10bps.

We reiterate our Buy rating on Apple given 1) strong capital return program with annual increases, 2) optionality from a large cash balance, and 3) an expected strong upgrade cycle for iPhone 8.

Figure 4 shows our old vs. new unit estimates.

**Figure 4: BofAML – New vs. old estimates**

Units (K)	Old Estimates				New Estimates			
	F16	F17	F18	F19	F16	F17	F18	F19
iPhone	211,884	223,290	240,000	266,000	211,884	219,053	240,000	266,000
iPad	45,590	38,577	37,420	37,420	45,590	39,490	38,306	38,306
Mac	18,484	18,941	19,509	20,095	18,484	18,894	19,461	20,044
iPod	6,372	5,098	4,078	3,263	6,372	5,098	4,078	3,263
Apple Watch	10,500	14,000	23,600	33,040	10,500	14,000	23,600	33,040

Source: Company reports, BofA Merrill Lynch Global Research estimates

## Capital return program gets a \$50bn boost

Apple's balance sheet remains strong with \$256.8bn in cash and short and long-term investments (93% or \$240bn of which is located outside of the US). In the quarter, Apple returned \$10bn to shareholders, including \$3bn in dividends and \$4bn on repurchases of 31.1mn shares through open market transactions. In addition, Apple launched a new \$3bn Accelerated Share Repurchase (ASR) program resulting in initial delivery and retirement of 17.5mn shares. Apple has completed a total of \$211.2bn of its capital return program, which was increased to \$300bn from \$250bn (\$50bn increase). The program now expires in March 2019.

Apple raised its share repurchase authorization from \$175bn to \$210bn, and raised its quarterly dividend by 10.5% to \$0.63 from \$0.57.

Figure 5: Apple capital return history

	apr-jun F3Q15	jul-sep F4Q15	oct-dec F1Q16	jan-mar F2Q16	apr-jun F3Q16	jul-sep F4Q16	oct-dec F1Q17	jan-mar F2Q17	Total
Total Capital return program (\$mn, beginning)	\$150,000				\$200,000			\$250,000	
New Authorization (\$mn)	\$50,000				\$50,000			\$50,000	\$240,000
Total Capital return program (\$mn, ending)	\$200,000				\$250,000			\$300,000	
Share buyback authorization (\$mn, beginning)	\$90,000				\$140,000			\$175,000	
New authorization (\$mn)	\$50,000				\$35,000			\$35,000	
Total share buyback authorization (\$mn)	\$140,000				\$175,000			\$210,000	
Accelerated buyback program (\$mn)	(\$6,000)		(\$3,000)		(\$6,000)	(\$3,000)	(\$6,000)	(\$3,000)	(\$61,950)
Open market buybacks (\$mn)	(\$4,000)	(\$14,027)	(\$3,000)	(\$7,000)	(\$4,000)	(\$3,000)	(\$5,000)	(\$4,000)	(\$89,026)
Total Buybacks (\$bn)	(\$10,000)	(\$14,027)	(\$6,000)	(\$7,000)	(\$10,000)	(\$6,000)	(\$11,000)	(\$7,000)	(\$150,977)
Share buyback authorization (\$mn, remaining)	\$50,000	\$35,973	\$29,973	\$22,973	\$47,973	\$41,973	\$30,973		
Buyback authorization utilized (\$mn)	\$90,000	\$104,027	\$110,027	\$117,027	\$127,027	\$133,027	\$144,027		
Accelerated program shares repurchased (K)	48,293		29,122		60,452	22,468	49,200		
Accelerated program repurchase share price	\$124.24		\$103.02		\$99.25				
Open market shares repurchased (K)	31,231	121,802	25,984		41,238	28,579	44,333		
Open market repurchase price per share (\$)	128.08	\$115.15	\$115.45		\$97.00	\$104.97	\$112.78		
Dividends paid (\$mn)	(\$3,053)	(\$2,964)	(\$2,969)	(\$2,902)	(\$3,187)	(\$3,092)	(\$3,130)	(\$3,004)	(\$54,023)
Total Capital returned to shareholders (\$mn)	(\$13,053)	(\$16,991)	(\$8,969)	(\$9,902)	(\$13,187)	(\$9,092)	(\$14,130)		(\$205,000)
Taxes related to Settlement of Equity Awards									(\$6,200)
<b>Total capital returned including taxes:</b>									<b>(\$211,200)</b>

\*ASR program shares delivered over multiple qtrs

Source: Company reports, BofA Merrill Lynch Global Research

# Model

Figure 6: Apple Income Statement

Income Statement	F2016E					F2017E			F2015	F2016	F2017E	F2018E	F2019E
	12/15	3/16	6/16	9/16	12/16	3/17	6/17E	9/17E					
<b>Revenue</b>	75872	50557	42358	46852	78351	52896	45752	56297	233715	215639	233296	270957	303969
iPhone revenue	51635	32857	24048	28160	54378	33249	26197	36064	155041	136700	149887	179871	204217
iPad revenue	7084	4413	4876	4255	5533	3889	4206	3673	23227	20628	17300	16393	16052
Mac revenue	6746	5107	5239	5739	7244	5844	5292	5798	25471	22831	24178	24654	25129
iTunes / Software / Services	6056	5991	5976	6325	7172	7041	6992	7337	19909	24348	28542	31540	34854
Other Rev	4351	2189	2219	2373	4024	2873	3065	3425	10067	11132	13388	18500	23716
Cost of Goods Sold (excl. Stock-based comp.)	45245	30445	26064	28853	47946	32088	28113	34407	139514	130607	142554	166311	189057
Gross Profit (excl. Stock-based comp.)	30627	20112	16294	17999	30405	20808	17639	21890	94201	85032	90741	104646	114912
Total Operating Expense (excl. Stock-based comp.)	5378	5077	5135	5208	5790	5494	5546	6258	19385	20798	23088	27041	30428
R&D (excl. Stock-based comp.)	1938	2043	2081	2094	2282	2201	2248	2516	6531	8156	9247	10835	12195
SG&A (excl. Stock-based comp.)	3440	3034	3054	3114	3508	3293	3299	3742	12854	12642	13841	16206	18233
Operating Income (Pre-Stock-based comp.)	25249	15035	11159	12791	24615	15314	12093	15632	74816	64234	67653	77805	84484
Total Operating Expense (incl. Stock-based comp.)	6252	5934	6001	6052	6817	6494	6546	7258	22396	24239	27115	31401	35148
R&D (incl. Stock-based comp.)	2404	2511	2560	2570	2871	2776	2823	3091	8067	10045	11561	13335	14895
SG&A (incl. Stock-based comp.)	3848	3423	3441	3482	3946	3718	3724	4167	14329	14194	15554	18066	20253
Operating Income (Incl. Stock-based comp.)	24171	13987	10105	11761	23359	14097	10876	14415	71230	60024	62746	72317	78776
Total Interest and Other Income/(Expense)	402	155	364	427	821	587	407	439	1285	1348	2253	2170	32
Pretax Income (Pre-SBC)	25651	15190	11523	13218	25436	15901	12499	16070	76101	65582	69907	79774	84516
Provision for Income Taxes (Credit)	6485	3895	2942	3442	6616	3958	3187	4178	20067	16764	17939	20741	21974
Net Income (Pre-Stock-based comp.)	19166	11295	8581	9776	18820	11943	9312	11892	56034	48818	51967	59033	62542
Stock-based comp. (After tax)	-805	-779	-785	-762	-929	-914	-907	-901	-2640	-3131	-3651	-3913	-4224
Net Income (Incl. Stock-based comp.)	18361	10516	7796	9014	17891	11029	8405	10991	53394	45687	48317	55120	58318
Diluted EPS (Pre-Stock-based comp.)	3.43	2.04	1.57	1.81	3.53	2.27	1.79	2.30	9.67	8.88	9.92	11.72	12.93
Diluted EPS (Incl. Stock-based comp.)	3.26	1.90	1.42	1.67	3.36	2.10	1.61	2.13	9.22	8.31	9.22	10.94	12.06
Diluted Weighted Average Shares	5594	5541	5473	5393	5328	5262	5212	5162	5793	5500	5241	5037	4837
<b>Income Statement (Cont'd)</b>													
<b>% Growth Rates</b>													
Revenues (Y/Y)	1.7%	(12.8%)	(14.6%)	(9.0%)	3.3%	4.6%	8.0%	20.2%	27.9%	(7.7%)	8.2%	16.1%	12.2%
Gross Profit (Y/Y)	2.5%	(15.5%)	(17.8%)	(13.0%)	(0.7%)	3.5%	8.3%	21.6%	32.7%	(9.7%)	6.7%	15.3%	9.8%
Opex (Y/Y)	13.3%	10.5%	5.0%	1.0%	7.7%	8.2%	8.0%	20.2%	24.1%	7.3%	11.0%	17.1%	12.5%
R&D (Y/Y)	27.4%	33.2%	26.4%	14.4%	17.8%	7.7%	8.0%	20.2%	35.4%	24.9%	13.4%	17.2%	12.5%
SG&A (Y/Y)	6.6%	(0.8%)	(5.9%)	(6.3%)	2.0%	8.5%	8.0%	20.2%	19.1%	(1.6%)	9.5%	17.1%	12.5%
Op. Income (Y/Y)	0.5%	(21.7%)	(25.3%)	(17.7%)	(2.5%)	1.9%	8.4%	22.2%	35.1%	(14.1%)	5.3%	14.7%	8.9%
Pretax Income (Y/Y)	1.4%	(22.1%)	(24.8%)	(17.3%)	(0.8%)	4.7%	8.5%	21.6%	35.1%	(13.8%)	6.6%	14.1%	5.9%
Net Income (Y/Y)	1.9%	(22.5%)	(27.0%)	(19.0%)	(2.6%)	4.9%	7.8%	21.9%	35.1%	(14.4%)	5.8%	14.1%	5.8%
EPS (Y/Y)	7.1%	(18.4%)	(23.0%)	(14.6%)	2.3%	10.4%	13.2%	27.4%	42.8%	(9.9%)	11.0%	18.7%	10.2%
Diluted Shares (Y/Y)	(4.9%)	(5.0%)	(5.2%)	(5.1%)	(4.8%)	(5.0%)	(4.8%)	(4.3%)	(5.4%)	(5.1%)	(4.7%)	(3.9%)	(4.0%)
Revenues (Q/Q)	47.3%	(33.4%)	(16.2%)	10.6%	67.2%	(32.5%)	(13.5%)	23.0%					
Gross Profit (Q/Q)	46.9%	(32.7%)	(14.4%)	10.7%	66.2%	(33.1%)	(12.4%)	22.4%					
Opex (Q/Q)	4.3%	(5.6%)	1.1%	1.4%	11.2%	(5.1%)	1.0%	12.8%					
R&D (Q/Q)	5.9%	5.4%	1.9%	0.6%	9.0%	(3.5%)	2.1%	11.9%					
SG&A (Q/Q)	3.5%	(11.8%)	0.7%	2.0%	12.7%	(6.1%)	0.2%	13.4%					
Op. Income (Q/Q)	62.5%	(40.5%)	(25.8%)	14.6%	92.4%	(37.8%)	(21.0%)	29.3%					
Diluted Shares (Q/Q)	(1.6%)	(1.0%)	(1.2%)	(1.5%)	(1.2%)	(1.2%)	(1.0%)	(1.0%)					
<b>% of Revenues</b>													
Gross Profit (Excl. Stock Based Comp Expense)	40.4%	40.4%	38.5%	38.4%	38.8%	39.3%	38.6%	38.9%	40.3%	39.4%	38.9%	38.6%	37.8%
Gross Profit (Incl. Stock Based Comp Expense)	40.1%	39.4%	38.0%	38.0%	38.5%	38.9%	38.1%	38.5%	40.1%	39.1%	38.5%	38.3%	37.5%
Opex	7.1%	10.0%	12.1%	11.1%	7.4%	10.4%	12.1%	11.1%	8.3%	9.6%	9.9%	10.0%	10.0%
R&D	2.6%	4.0%	4.9%	4.5%	2.9%	4.2%	4.9%	4.5%	2.8%	3.8%	4.0%	4.0%	4.0%
SG&A	4.5%	6.0%	7.2%	6.6%	4.5%	6.2%	7.2%	6.6%	5.5%	5.9%	5.9%	6.0%	6.0%
Opex (including Stock Based Comp)	8.2%	11.7%	14.2%	12.9%	8.7%	12.3%	14.3%	12.9%	9.6%	11.2%	11.6%	11.6%	11.6%
EBIT (Pre-Stock Based Comp)	33.3%	29.7%	26.3%	27.3%	31.4%	29.0%	26.4%	27.8%	32.0%	29.8%	29.0%	28.6%	27.8%
Stock Based Comp Expense	(1.1%)	(1.5%)	(1.9%)	(1.6%)	(1.2%)	(1.7%)	(2.0%)	(1.6%)	(1.1%)	(1.5%)	(1.6%)	(1.4%)	(1.4%)
EBIT (Post-Stock Based Comp)	31.9%	27.7%	23.9%	25.1%	29.8%	26.7%	23.8%	25.6%	30.5%	27.8%	26.9%	26.7%	25.9%
Pretax Income	33.8%	30.0%	27.2%	28.2%	32.5%	30.1%	27.3%	28.5%	32.6%	30.4%	30.0%	29.4%	27.8%
Tax Rate	25.3%	25.6%	25.5%	26.0%	26.0%	24.9%	25.5%	26.0%	26.4%	25.6%	25.7%	26.0%	26.0%
Net Income (Operating, Pre-SBC)	24.2%	20.8%	18.4%	19.2%	22.8%	20.9%	18.4%	19.5%	22.8%	21.2%	20.7%	20.3%	19.2%
Net Income (Operating, Post-SBC)	25.3%	22.3%	20.3%	20.9%	24.0%	22.6%	20.4%	21.1%	24.0%	22.6%	22.3%	21.8%	20.6%

Source: Company reports, BofA Merrill Lynch Global Research estimates

Figure 7: Apple Segment Details

	F2016E				F2017E				F2015	F2016	F2017E	F2018E	F2019E
	12/15	3/16	6/16	9/16	12/16	3/17	6/17E	9/17E					
<b>Sales By Segment</b>													
<b>Total Revenue (\$mn)</b>	<b>\$75,872</b>	<b>\$50,557</b>	<b>\$42,358</b>	<b>\$46,852</b>	<b>\$78,351</b>	<b>\$52,896</b>	<b>\$45,752</b>	<b>\$56,297</b>	<b>\$233,715</b>	<b>\$215,639</b>	<b>\$233,296</b>	<b>\$270,957</b>	<b>\$303,969</b>
iPhone revenue	51,635	32,857	24,048	28,160	54,378	33,249	26,197	36,064	155,041	136,700	149,887	179,871	204,217
iPad revenue	7,084	4,413	4,876	4,255	5,533	3,889	4,206	3,673	23,227	20,628	17,300	16,393	16,052
Mac revenue	6,746	5,107	5,239	5,739	7,244	5,844	5,292	5,798	25,471	22,831	24,178	24,654	25,129
iPod revenue	392	193	208	193	305	150	162	151	1,376	986	769	603	473
iTunes / Software / Services revenue	6,056	5,991	5,976	6,325	7,172	7,041	6,992	7,337	19,909	24,348	28,542	31,540	34,854
Accessories	1,209	1,583	1,346	1,276	1,458	1,819	1,547	1,466	5,693	5,414	6,289	7,227	8,305
Apple Watch	2,750	413	665	904	2,261	904	1,356	1,809	2,998	4,733	6,330	10,670	14,938
<b>% of Revenue</b>													
iPhone revenue	68%	65%	57%	60%	69%	63%	57%	64%	66%	63%	64%	66%	67%
iPad revenue	9%	9%	12%	9%	7%	7%	9%	7%	10%	10%	7%	6%	5%
Mac revenue	9%	10%	12%	12%	9%	11%	12%	10%	11%	11%	10%	9%	8%
iTunes / Software / Services revenue	8%	12%	14%	13%	9%	13%	15%	13%	9%	11%	12%	12%	11%
<b>Product Segment Revenue Growth - Y/Y</b>													
iPhone revenue	2%	(13%)	(15%)	(9%)	3%	5%	8%	20%	28%	(8%)	8%	16%	12%
iPad revenue	1%	(18%)	(23%)	(13%)	5%	1%	9%	28%	52%	(12%)	10%	20%	14%
Mac revenue	(21%)	(19%)	7%	(0%)	(22%)	(12%)	(14%)	(14%)	(23%)	(11%)	(16%)	(5%)	(2%)
iTunes / Software / Services revenue	(3%)	(9%)	(13%)	(17%)	7%	14%	1%	1%	6%	(10%)	6%	2%	2%
iTunes / Software / Services revenue	26%	20%	19%	24%	18%	18%	17%	16%	10%	22%	17%	11%	11%
<b>Product Segment Revenue Growth - Q/Q</b>													
iPhone revenue	47%	(33%)	(16%)	11%	67%	(32%)	(14%)	23%					
iPhone revenue	60%	(36%)	(27%)	17%	93%	(39%)	(21%)	38%					
iPad revenue	66%	(38%)	10%	(13%)	30%	(30%)	8%	(13%)					
Mac revenue	(2%)	(24%)	3%	10%	26%	(19%)	(9%)	10%					
iTunes / Software / Services revenue	19%	(1%)	(0%)	6%	13%	(2%)	(1%)	5%					
<b>Units by Segment</b>													
<b>Total Units (k)</b>													
iPhone	74,779	51,193	40,399	45,513	78,290	50,763	40,000	50,000	231,218	211,884	219,053	240,000	266,000
iPad	16,122	10,251	9,950	9,267	13,081	8,922	9,055	8,433	54,856	45,590	39,490	38,306	38,306
Mac	5,312	4,034	4,252	4,886	5,374	4,199	4,337	4,984	20,587	18,484	18,894	19,461	20,044
iPod	2,541	1,160	1,404	1,268	2,032	928	1,124	1,014	8,626	6,372	5,098	4,078	3,263
Apple Watch	6,000	1,000	1,500	2,000		2,000	3,000	4,000	7,000	10,500	14,000	23,600	33,040
<b>Product Segment Unit Growth - Y/Y</b>													
iPhone	0%	(16%)	(15%)	(5%)	5%	(1%)	(1%)	10%	37%	(8%)	3%	10%	11%
iPad	(25%)	(19%)	(9%)	(6%)	(19%)	(13%)	(9%)	(9%)	(19%)	(17%)	(13%)	(3%)	0%
Mac	(4%)	(12%)	(11%)	(14%)	1%	4%	2%	2%	9%	(10%)	2%	3%	3%
<b>Product Segment Unit Growth - Q/Q</b>													
iPhone	56%	(32%)	(21%)	13%	72%	(35%)	(21%)	25%					
iPad	63%	(36%)	(3%)	(7%)	41%	(32%)	1%	(7%)					
Mac	(7%)	(24%)	5%	15%	10%	(22%)	3%	15%					
<b>Product Segment ASPs</b>													
iPhone	691	642	595	619	695	655	655	721	671	645	684	749	768
iPad	439	430	490	459	423	404	433	403	423	452	438	428	419
Mac	1,251	1,241	1,208	1,154	1,329	1,367	1,196	1,142	1,237	1,235	1,280	1,267	1,254
<b>Product Segment ASP Growth - Y/Y</b>													
iPhone	0%	(3%)	(10%)	(8%)	1%	2%	10%	17%	11%	(4%)	6%	10%	2%
iPad	5%	0%	18%	6%	(4%)	(6%)	(12%)	(12%)	(5%)	7%	(3%)	(2%)	(2%)
Mac	1%	3%	(2%)	(3%)	6%	10%	(1%)	(1%)	(3%)	(0%)	4%	(1%)	(1%)
<b>Product Segment ASP Growth - Q/Q</b>													
iPhone	3%	(7%)	(7%)	4%	12%	(6%)	(0%)	10%					
iPad	2%	(2%)	14%	(6%)	(6%)	(5%)	7%	(7%)					
Mac	5%	(1%)	(3%)	(5%)	15%	3%	(13%)	(5%)					

Source: Company reports, BofA Merrill Lynch Global Research estimates

Figure 8: Apple Balance Sheet

	F2016E				F2017E			F2015	F2016	F2017E	F2018E	F2019E	
	12/15	3/16	6/16	9/16	12/16	3/17	6/17E						9/17E
<b>Balance Sheet</b>													
<b>Total Assets</b>	<b>\$293,264</b>	<b>\$305,277</b>	<b>\$98,494</b>	<b>\$321,686</b>	<b>\$331,141</b>	<b>\$334,532</b>	<b>\$348,295</b>	<b>\$376,075</b>	<b>\$290,479</b>	<b>\$321,686</b>	<b>\$376,075</b>	<b>\$447,693</b>	<b>\$520,313</b>
Total Current Assets	76,219	87,592	93,761	106,869	103,332	101,990	115,260	140,633	89,378	106,869	140,633	205,253	270,457
Cash/Equivalents	16,689	21,514	18,237	20,484	16,371	15,157	28,696	47,025	21,120	20,484	47,025	109,458	172,188
ST Investments	21,385	33,769	43,519	46,671	44,081	51,944	51,944	51,944	20,481	46,671	51,944	51,944	51,944
Accounts Receivable	12,953	12,229	11,714	15,754	14,057	11,579	12,653	18,930	16,849	15,754	18,930	20,646	22,639
Deferred Tax Assets	0	0	0	0	0	0	0	0	5,546	0	0	0	0
Inventory	2,451	2,281	1,831	2,132	2,712	2,910	1,975	2,542	2,349	2,132	2,542	2,818	3,101
Other Current Assets	22,741	17,799	18,460	21,828	26,111	20,400	19,992	20,192	23,033	21,828	20,192	20,388	20,585
PP&E	22,300	23,203	653	27,010	26,510	27,163	27,818	30,160	22,471	27,010	30,160	35,493	40,975
LT Investments	177,665	177,645	4,102	170,430	185,638	189,740	189,730	189,719	164,065	170,430	189,719	191,313	193,173
Goodwill	5,202	5,249	50	5,414	5,423	5,473	5,473	5,473	5,116	5,414	5,473	5,473	5,473
Intangible Assets	3,924	3,843	(231)	3,206	2,848	2,617	2,617	2,617	3,893	3,206	2,617	2,617	2,617
Other Assets	7,974	7,745	159	8,757	7,390	7,549	7,398	7,472	5,556	8,757	7,472	7,544	7,618
<b>Total Liabilities</b>	<b>\$165,017</b>	<b>\$174,820</b>	<b>\$1,699</b>	<b>\$193,437</b>	<b>\$198,751</b>	<b>\$200,450</b>	<b>\$198,530</b>	<b>\$212,000</b>	<b>\$171,124</b>	<b>\$193,437</b>	<b>\$212,000</b>	<b>\$217,118</b>	<b>\$222,367</b>
Total Current Liabilities	76,092	68,265	(10,788)	79,006	84,130	73,342	71,518	84,970	80,610	79,006	84,970	90,035	95,232
Accounts Payable	33,312	25,098	(9,837)	37,294	38,510	28,573	31,236	44,473	35,490	37,294	44,473	49,293	54,245
Accrued Liabilities	33,021	32,669	(850)	30,107	31,628	30,778	30,282	30,496	34,121	30,107	30,496	30,742	30,988
Deferred Revenue - Current	8,989	9,461	(207)	8,080	7,889	7,682	7,648	7,636	8,940	8,080	7,636	7,660	7,682
Other Current Liabilities (accrued exp)	24,032	23,208	(643)	22,027	23,739	23,096	22,634	22,860	25,181	22,027	22,860	23,082	23,306
Current Portion LT Debt/commercial paper	9,759	10,498	(1)	11,605	13,992	13,991	10,000	10,000	10,999	11,605	10,000	10,000	10,000
LT Debt	53,204	69,374	10,974	75,427	73,557	84,531	84,531	84,531	53,463	75,427	84,531	84,531	84,531
Other LT Liabilities	35,721	37,181	1,513	39,004	41,064	42,577	42,481	42,499	37,051	39,004	42,499	42,552	42,604
Deferred Revenue - Non-Current	3,546	3,322	(56)	2,930	3,163	3,107	3,011	3,029	3,624	2,930	3,029	3,082	3,134
Deferred Tax Liabilities	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Non-Current Liabilities	32,175	33,859	1,569	36,074	37,901	39,470	39,470	39,470	33,427	36,074	39,470	39,470	39,470
<b>Shareholders' Equity</b>	<b>\$128,267</b>	<b>\$130,457</b>	<b>\$96,795</b>	<b>\$128,249</b>	<b>\$132,390</b>	<b>\$134,082</b>	<b>\$149,765</b>	<b>\$164,075</b>	<b>\$119,355</b>	<b>\$128,249</b>	<b>\$164,075</b>	<b>\$230,575</b>	<b>\$297,946</b>
Common Stock	28,253	29,484	1,435	31,251	32,144	33,579	33,579	33,579	27,416	31,251	33,579	33,579	33,579
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)	101,494	102,021	96,027	96,364	100,001	100,925	116,608	130,918	92,284	96,364	130,918	197,418	264,789
Other comprehensive income	(1,480)	(1,048)	(667)	634	245	(422)	(422)	(422)	(345)	634	(422)	(422)	(422)
Treasury Stock	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Liabilities &amp; Shareholders' Equity</b>	<b>293,264</b>	<b>305,277</b>	<b>98,494</b>	<b>321,686</b>	<b>331,141</b>	<b>334,532</b>	<b>348,295</b>	<b>376,075</b>	<b>290,479</b>	<b>321,686</b>	<b>376,075</b>	<b>447,693</b>	<b>520,313</b>
<b>Balance Sheet Statistics</b>													
Book Value per Share	\$22.93	\$23.54	\$17.69	\$23.78	\$24.85	\$25.48	\$28.74	\$31.79	\$20.60	\$23.32	\$31.31	\$45.78	\$61.60
Tangible Book Value per Share	\$21.30	\$21.90	\$17.72	\$22.18	\$23.30	\$23.96	\$27.18	\$30.22	\$19.06	\$21.75	\$29.76	\$44.17	\$59.93
Debt/Equity	49%	61%	11%	68%	66%	73%	63%	58%	54%	68%	58%	41%	32%
Net Cash & Investments	\$152,776	\$153,056	\$54,885	\$150,553	\$158,541	\$158,319	\$175,839	\$194,157	\$141,204	\$150,553	\$194,157	\$258,184	\$322,774
Net Cash & Investments per Share	\$27.31	\$27.62	\$10.03	\$27.91	\$29.76	\$30.09	\$33.74	\$37.62	\$24.37	\$27.37	\$37.05	\$51.26	\$69.01
Inventory Turns	75.4x	51.5x	50.7x	58.2x	79.2x	45.7x	46.0x	60.9x	62.6x	58.3x	61.0x	62.1x	63.9x
Days of Inventory	5	7	7	6	5	8	8	6	6	6	6	6	6
Days Accts. Receivable	18	22	25	26	17	22	24	25	26	27	27	26	26
Days payables	68	86	26	43	71	94	96	99	85	100	103	101	99
Cash cycle	(46)	(57)	6	(10)	(49)	(64)	(64)	(68)	(53)	(67)	(71)	(69)	(67)
Op. WC/Revenue	(6%)	(5%)	14%	(10%)	(7%)	(7%)	(9%)	(10%)	(7%)	(9%)	(10%)	(10%)	(9%)
ROE	59%	33%	27%	32%	55%	33%	24%	28%	44%	38%	34%	31%	25%
ROA	25%	14%	15%	17%	22%	13%	10%	12%	21%	17%	14%	14%	13%
<b>Drivers:</b>													
Inventory Turns	73.8x	53.4x	56.9x	54.1x	70.7x	44.1x	56.9x	54.1x	59.4x	61.3x	56.1x	59.0x	61.0x
Inventory Days	5	7	6	7	5	8	8	7	6	6	6	6	6
Days Accts. Receivable	15	22	25	30	16	20	25	30	26	26	29	27	27
Days Payables	66	74	(34)	116	72	80	100	116	92	103	112	107	103
Cash Cycle	(46)	(46)	66	(79)	(51)	(52)	(69)	(79)	(60)	(71)	(77)	(73)	(71)

Source: Company reports, BofA Merrill Lynch Global Research estimates

Figure 9: Apple Cash Flow Statement

	F2016E				F2017E			F2015	F2016	F2017E	F2018E	F2019E	
	12/15	3/16	6/16	9/16	12/16	3/17	6/17E						9/17E
<b>Cash Flow Statement</b>													
<b>Cash from Operating Activities</b>	<b>\$27,463</b>	<b>\$11,601</b>	<b>\$10,634</b>	<b>\$16,126</b>	<b>\$27,056</b>	<b>\$12,523</b>	<b>\$15,873</b>	<b>\$22,376</b>	<b>\$81,266</b>	<b>\$65,824</b>	<b>\$77,829</b>	<b>\$78,238</b>	<b>\$83,294</b>
Net Income	18,361	10,516	7,796	9,014	17,891	11,029	8,405	10,991	53,394	45,687	48,317	55,120	58,318
Depreciation and Amortization	2,954	2,477	2,526	2,548	2,987	2,332	2,389	2,447	11,257	10,505	10,155	9,492	11,085
Stock Based Compensation	1,078	1,048	1,054	1,030	1,256	1,217	1,217	1,217	3,586	4,210	4,907	5,288	5,708
Deferred Taxes	1,592	1,500	2,099	(253)	1,452	1,370	1,370	1,370	1,382	4,938	5,562	5,480	5,480
Other - Loss on disposition of PPE	0	0	0	0	(274)	65	0	0	0	0	(209)	0	0
<b>Change in Working Capital</b>	<b>3,478</b>	<b>(3,940)</b>	<b>(2,641)</b>	<b>3,787</b>	<b>3,744</b>	<b>(3,490)</b>	<b>2,492</b>	<b>6,351</b>	<b>11,647</b>	<b>484</b>	<b>9,096</b>	<b>2,850</b>	<b>2,702</b>
Accounts Receivable	3,896	724	515	(4,040)	1,697	2,486	(1,074)	(6,277)	611	1,095	(3,168)	(1,716)	(1,993)
Inventory	(102)	170	450	(301)	(580)	(198)	935	(567)	(238)	217	(410)	(276)	(283)
Other Current Assets	933	5,266	1,110	(6,270)	(1,821)	5,437	408	(200)	(3,914)	1,039	3,824	(196)	(198)
Accounts Payable	(852)	(8,623)	(147)	11,413	2,460	(9,322)	2,663	13,237	5,400	1,791	9,038	4,819	4,952
Deferred Revenue	(29)	248	(1,367)	(406)	42	(263)	(496)	214	1,042	(1,554)	(503)	246	246
Other Asset and Other Liabilities	(368)	(1,725)	(3,402)	3,391	1,946	(1,630)	55	(56)	8,746	(2,104)	315	(19)	(21)
<b>Cash from Investing Activities</b>	<b>(\$20,450)</b>	<b>(\$13,660)</b>	<b>(\$4,470)</b>	<b>(\$7,397)</b>	<b>(\$19,122)</b>	<b>(\$14,202)</b>	<b>(\$3,034)</b>	<b>(\$4,779)</b>	<b>(\$56,274)</b>	<b>(\$45,977)</b>	<b>(\$41,137)</b>	<b>(\$16,418)</b>	<b>(\$18,429)</b>
Capital Expenditures	(3,612)	(2,336)	(2,809)	(3,977)	(3,334)	(2,975)	(3,034)	(4,779)	(11,247)	(12,734)	(14,122)	(16,418)	(18,429)
Sale of PP&E	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds of investments	31,776	27,423	25,642	26,953	38,691	34,192	0	0	121,985	111,794	72,883	0	0
Purchase of Investments	(47,836)	(38,406)	(25,826)	(30,360)	(54,272)	(45,549)	0	0	(166,402)	(142,428)	(99,821)	0	0
Acquisitions/intang assets	(480)	(317)	(102)	(212)	(103)	(90)	0	0	(584)	(1,111)	(193)	0	0
Other/Strategic Investments	(298)	(24)	(1,375)	199	(104)	220	0	0	(26)	(1,498)	116	0	0
<b>Cash from Financing Activities</b>	<b>(\$11,444)</b>	<b>\$6,884</b>	<b>(\$9,441)</b>	<b>(\$6,482)</b>	<b>(\$12,047)</b>	<b>\$465</b>	<b>\$700</b>	<b>\$731</b>	<b>(\$17,716)</b>	<b>(\$20,483)</b>	<b>(\$10,151)</b>	<b>\$613</b>	<b>(\$2,135)</b>
Proceeds from the issuance of term debt, net	0	15,584	(100)	6,970	0	10,975	10,975	10,975	0	22,454	32,925	43,900	43,900
Repayments of term debt	0	0	0	0	0	0	0	0	0	0	0	0	0
Issuance of Common	1	246	0	248	0	273	0	0	543	495	273	0	0
Treasury Stock	(6,863)	(6,667)	(10,166)	(6,026)	(10,851)	(7,161)	(7,000)	(7,000)	(35,253)	(29,722)	(32,012)	(30,000)	(32,000)
Preferred Stock	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	(373)	(114)	(483)	(193)	(451)	(112)	0	0	(750)	(1,163)	(563)	0	0
Dividends	(2,969)	(2,902)	(3,187)	(3,092)	(3,130)	(3,004)	(3,275)	(3,244)	(11,561)	(12,150)	(12,653)	(13,287)	(14,035)
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
<b>Net Change in Cash</b>	<b>(\$4,431)</b>	<b>\$4,825</b>	<b>(\$3,277)</b>	<b>\$2,247</b>	<b>(\$4,113)</b>	<b>(\$1,214)</b>	<b>\$13,539</b>	<b>\$18,329</b>	<b>\$7,276</b>	<b>(\$636)</b>	<b>\$26,541</b>	<b>\$62,433</b>	<b>\$62,730</b>
Net Cash - Beginning Balance	21,120	16,689	21,514	18,237	20,484	16,371	15,157	28,696	13,844	21,120	20,484	47,025	109,458
Net Cash - Ending Balance	16,689	21,514	18,237	20,484	16,371	15,157	28,696	47,025	21,120	20,484	47,025	109,458	172,188
<b>Free Cash Flow</b>													
<b>Free Cash Flow</b>	<b>\$23,851</b>	<b>\$9,265</b>	<b>\$7,825</b>	<b>\$12,149</b>	<b>\$23,722</b>	<b>\$9,548</b>	<b>\$12,839</b>	<b>\$17,598</b>	<b>\$70,019</b>	<b>\$53,090</b>	<b>\$63,707</b>	<b>\$61,820</b>	<b>\$64,865</b>
Cash From Operations	27,463	11,601	10,634	16,126	27,056	12,523	15,873	22,376	81,266	65,824	77,829	78,238	83,294
Capital Expenditures	(3,612)	(2,336)	(2,809)	(3,977)	(3,334)	(2,975)	(3,034)	(4,779)	(11,247)	(12,734)	(14,122)	(16,418)	(18,429)
<b>Free Cash Flow Per Share</b>	<b>\$4.26</b>	<b>\$1.67</b>	<b>\$1.43</b>	<b>\$2.25</b>	<b>\$4.45</b>	<b>\$1.81</b>	<b>\$2.46</b>	<b>\$3.41</b>	<b>\$12.09</b>	<b>\$9.65</b>	<b>\$12.16</b>	<b>\$12.27</b>	<b>\$13.41</b>
Free Cash Flow (after acq.)	23,371	8,948	7,723	11,937	23,619	9,458	12,839	17,598	69,435	51,979	63,514	61,820	64,865
<b>Drivers</b>													
Depreciation & amortization	2,954	2,477	2,526	2,548	2,987	2,332	2,389	2,447	11,257	10,505	10,155	9,492	11,085
Cap Ex/Depreciation	1.2	0.9	1.1	1.6	1.1	1.3	1.3	2.0	1.0	1.2	1.4	1.7	1.7
Cap Ex/Sales	(5%)	(5%)	(7%)	(8%)	(4%)	(6%)	(7%)	(8%)	(5%)	(6%)	(6%)	(6%)	(189%)
Annual Dappr. % of PP&E (prior qtr)	53%	44%	44%	1561%	44%	35%	35%	35%	55%	425%	37%	30%	30%

Source: Company reports, BofA Merrill Lynch Global Research estimates

## Price objective basis & risk

### Apple Inc. (AAPL)

Our PO of \$155 is based on 14x our C2018 EPS estimate of \$11.14. Our target multiple compares to the long-term historical range of 9-14x (median 12x). We believe this multiple is justified given the anticipation of a strong upcoming iPhone 8 cycle where we expect smoother, more consistent growth in iPhone units. We also think a 14x multiple is justified given large cash balance and opportunity to diversify into other areas, 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.

### US - IT Hardware and Technology Supply Chain Coverage Cluster

Investment rating	Company	BofA Merrill Lynch ticker	Bloomberg symbol	Analyst
<b>BUY</b>				
	3D Systems Corporation	DDD	DDD 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
	Jabil Circuit, Inc.	JBL	JBL US	Ruplu Bhattacharya
	Nutanix Inc	NTNX	NTNX 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
<b>NEUTRAL</b>				
	Amphenol	APH	APH US	Wamsi Mohan
	Avnet Inc.	AVT	AVT US	Param Singh, CFA
	Corning Inc.	GLW	GLW US	Wamsi Mohan
	Hewlett-Packard Enterprise	HPE	HPE US	Wamsi Mohan
	NetApp Inc.	NTAP	NTAP US	Wamsi Mohan
<b>UNDERPERFORM</b>				
	Seagate Technology	STX	STX US	Wamsi Mohan
	Stratasys Ltd.	SSYS	SSYS US	Wamsi Mohan
	Vishay Intertechnology, Inc.	VSH	VSH US	Ruplu Bhattacharya

**iqmethod<sup>SM</sup> Measures Definitions**

<b>Business Performance</b>	<b>Numerator</b>	<b>Denominator</b>
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
<b>Quality of Earnings</b>		
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
<b>Valuation Toolkit</b>		
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

iqmethod<sup>SM</sup> 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 valuations. 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.

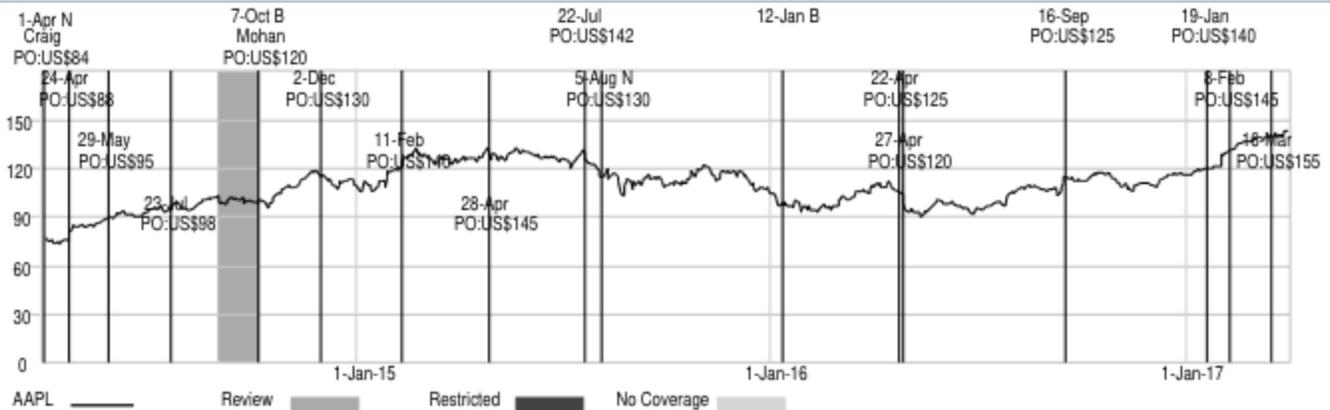
iqdatabase<sup>SM</sup> is our real-time global research database that is sourced directly from our equity analysts' earnings models and includes forecasted as well as historical data for income statements, balance sheets, and cash flow statements for companies covered by BofA Merrill Lynch.

iqprofile<sup>SM</sup>, iqmethod<sup>SM</sup> are service marks of Bank of America Corporation, iqdatabase<sup>SM</sup> is a registered service mark of Bank of America Corporation.

# 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 March 31, 2017 or such later date as indicated.

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

Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	126	59.43%	Buy	70	55.56%
Hold	35	16.51%	Hold	17	48.57%
Sell	51	24.06%	Sell	17	33.33%

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

Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	1578	51.33%	Buy	979	62.04%
Hold	690	22.45%	Hold	434	62.90%
Sell	806	26.22%	Sell	381	47.27%

\* 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.

**FUNDAMENTAL EQUITY OPINION KEY:** Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. **VOLATILITY RISK RATINGS**, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. **INVESTMENT RATINGS** reflect the analyst's assessment of a stock's: (i) absolute total return potential and (ii) attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). There are three investment ratings: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

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.

**INCOME RATINGS**, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8 - same/lower (dividend not considered to be secure) and 9 - pays no cash dividend. Coverage Cluster is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Merrill Lynch report referencing the stock.

Price charts for the securities referenced in this research report are available at <http://pricecharts.baml.com>, or call 1-800-MERRILL to have them mailed.

MLPF&S or one of its affiliates acts as a market maker for the equity securities recommended in the report: Apple Inc.

MLPF&S or an affiliate was a manager of a public offering of securities of this issuer within the last 12 months: Apple Inc.

The issuer is or was, within the last 12 months, an investment banking client of MLPF&S and/or one or more of its affiliates: Apple Inc.

MLPF&S or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: Apple Inc.

The issuer is or was, within the last 12 months, a non-securities business client of MLPF&S and/or one or more of its affiliates: Apple Inc.

MLPF&S or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: Apple Inc.

MLPF&S or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer or an affiliate of the issuer within the next three months: Apple Inc.

MLPF&S together with its affiliates beneficially owns one percent or more of the common stock of this issuer. If this report was issued on or after the 9th day of the month, it reflects the ownership position on the last day of the previous month. Reports issued before the 9th day of a month reflect the ownership position at the end of the second month preceding the date of the report: Apple Inc.

MLPF&S or one of its affiliates is willing to sell to, or buy from, clients the common equity of the issuer on a principal basis: Apple Inc.

The issuer is or was, within the last 12 months, a securities business client (non-investment banking) of MLPF&S and/or one or more of its affiliates: Apple Inc.

BofA Merrill Lynch Research Personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

## Other Important Disclosures

From time to time research analysts conduct site visits of covered issuers. BofA Merrill Lynch policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits.

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for the purpose of any recommendation in relation to: (i) an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report; or (ii) a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including Bank of America Merrill Lynch trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

Officers of MLPF&S or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at <http://go.bofa.com/coi>.

**"BofA Merrill Lynch" includes Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") and its affiliates. Investors should contact their BofA Merrill Lynch representative or Merrill Lynch Global Wealth Management financial advisor if they have questions concerning this report. "BofA Merrill Lynch" and "Merrill Lynch" are each global brands for BofA Merrill Lynch Global Research.**

**Information relating to Non-US affiliates of BofA Merrill Lynch and Distribution of Affiliate Research Reports:**

MLPF&S distributes, or may in the future distribute, research reports of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSF); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Investment Industry Regulatory Organization of Canada; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; Merrill Lynch (Japan): Merrill Lynch Japan Securities Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International Incorporated (Seoul Branch) regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; DSP Merrill Lynch (India): DSP Merrill Lynch Limited, regulated by the Securities and Exchange Board of India; Merrill Lynch (Indonesia): PT Merrill Lynch Sekuritas Indonesia, regulated by Otoritas Jasa Keuangan (OJK); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (Russia): OOO Merrill Lynch Securities, Moscow, regulated by the Central Bank of the Russian Federation; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Spain): Merrill Lynch Capital Markets Espana, S.A.S.V., regulated by Comisión Nacional del Mercado De Valores; Merrill Lynch (Brazil): Bank of America Merrill Lynch Banco Multiplo S.A., regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company, Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This research report has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK) and Bank of America Merrill Lynch International Limited, which are authorized by the PRA and regulated by the FCA and the PRA, and is distributed in the UK to retail clients (as defined in the rules of the FCA and the PRA) by Merrill Lynch International Bank Limited, London Branch, which is authorized by the Central Bank of Ireland and subject to limited regulation by the FCA and PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been considered and distributed in Japan by Merrill Lynch (Japan), a registered securities dealer under the Financial Instruments and Exchange Act in Japan; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSF (research reports containing any information in relation to, or advice on, futures contracts are not intended for issuance or distribution in Hong Kong and are not directed to, or intended for issuance or distribution to, or use by, any person in Hong Kong); is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by DSP Merrill Lynch (India); and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch International Bank Limited (Merchant Bank) (MLIBLMB) and Merrill Lynch (Singapore) (Company Registration Nos F 06872E and 198602883D respectively). MLIBLMB and Merrill Lynch (Singapore) are regulated by MAS. Bank of America N.A., Australian Branch (ARBN 064 874 531), AFS License 412901 (BANA Australia) and Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distribute this report in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of BANA Australia, neither MLEA nor any of its affiliates involved in preparing this research report is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this report in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Research reports prepared and issued by Merrill Lynch (DIFC) are done so in accordance with the requirements of the DFSA conduct of business rules. Bank of America Merrill Lynch International Limited, Frankfurt Branch (BAMLI Frankfurt) distributes this report in Germany and is regulated by BaFin.

This research report has been prepared and issued by MLPF&S and/or one or more of its non-US affiliates. MLPF&S is the distributor of this research report in the US and accepts full responsibility for research reports of its non-US affiliates distributed to MLPF&S clients in the US. Any US person receiving this research report and wishing to effect any transaction in any security discussed in the report should do so through MLPF&S and not such foreign affiliates. Hong Kong recipients of this research report should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities (and not futures contracts) or provision of specific advice on securities (and not futures contracts). Singapore recipients of this research report should contact Merrill Lynch International Bank Limited (Merchant Bank) and/or Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this research report.

**General Investment Related Disclosures:**

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Merrill Lynch.

This research report provides general information only. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This report is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of any specific person. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this report and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this report.

Securities and other financial instruments discussed in this report, or recommended, offered or sold by Merrill Lynch, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

BofA Merrill Lynch is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments, including ADRs, effectively assume currency risk.

UK Readers: The protections provided by the U.K. regulatory regime, including the Financial Services Scheme, do not apply in general to business coordinated by BofA Merrill Lynch entities located outside of the United Kingdom. BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at <http://go.bofa.com/coi>. MLPF&S or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. MLPF&S or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report. BofA Merrill Lynch, through business units other than BofA Merrill Lynch Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented in this report. Such ideas or recommendations reflect the different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Merrill Lynch is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this report.

In the event that the recipient received this report pursuant to a contract between the recipient and MLPF&S for the provision of research services for a separate fee, and in connection therewith MLPF&S may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom MLPF&S has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by MLPF&S). MLPF&S is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities mentioned in this report.

**Copyright and General Information regarding Research Reports:**

Copyright 2017 Bank of America Corporation. All rights reserved. iQmethod, iQmethod 2.0, iQprofile, iQtoolkit, iQworks are service marks of Bank of America Corporation. iQanalytics®, iQcustom®, iQdatabase® are registered service marks of Bank of America Corporation. This research report is prepared for the use of BofA Merrill Lynch clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Merrill Lynch. BofA Merrill Lynch Global Research reports are distributed simultaneously to internal and client websites and other portals by BofA Merrill Lynch and are not publicly-available materials. Any unauthorized use or disclosure is prohibited. Receipt and review of this research report constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained in this report (including any investment recommendations, estimates or price targets) without first obtaining expressed permission from an authorized officer of BofA Merrill Lynch.

Materials prepared by BofA Merrill Lynch Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Merrill Lynch, including investment banking personnel. BofA Merrill Lynch has established information barriers between BofA Merrill Lynch Global Research and certain business groups. As a result, BofA Merrill Lynch does not disclose certain client relationships with, or compensation received from, such issuers in research reports. To the extent this report discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this report. BofA Merrill Lynch Global Research personnel's knowledge of legal proceedings in which any BofA Merrill Lynch entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this report is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Merrill Lynch in connection with the legal proceedings or matters relevant to such proceedings.

This report has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of MLPF&S, any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Merrill Lynch Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Merrill Lynch and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This report may contain links to third-party websites. BofA Merrill Lynch is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this report and is not incorporated by reference into this report. The inclusion of a link in this report does not imply any endorsement by or any affiliation with BofA Merrill Lynch. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Merrill Lynch is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

Subject to the quiet period applicable under laws of the various jurisdictions in which we distribute research reports and other legal and BofA Merrill Lynch policy-related restrictions on the publication of research reports, fundamental equity reports are produced on a regular basis as necessary to keep the investment recommendation current.

Certain outstanding reports may contain discussions and/or investment opinions relating to securities, financial instruments and/or issuers that are no longer current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with MLPF&S or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Merrill Lynch nor any officer or employee of BofA Merrill Lynch accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this report or its contents.