

Apple

Limited Surprise Expected on iPhone Specs; iPhone Pricing and Other H/W Refreshes Are Watch Points for Tomorrow

The iPhone launch event is unlikely to be a material event for the shares given the limited surprise on the spec upgrades for the 2019 iPhones. Hence, we believe the key watch points for tomorrow's event will revolve around 2019 iPhone pricing, and announcements around other hardware products which have more opportunity to surprise relative to expectations. We expect pricing for the 2019 iPhones to remain consistent with 2018, with the firm prioritizing pricing levers relative to near-term volumes, and refresh of other products which can continue to drive upside for total hardware revenues.

- iPhone pricing a key watch point amidst noise around potential tariffs.** The limited updates to the three 2019 iPhones expected to be launched tomorrow would have made it an opportune year for Apple to repurpose typical supply chain savings as well as outsized decline in memory prices (relative to at the time of the launch of 2018 iPhones) towards lower prices across the line up. However, we expect Apple to maintain prices, driving additional levers relative to a potential tariff on iPhones, and in the absence of any tariffs a more moderate price increase for 5G enabled iPhones in Sep-20. While lower pricing for 2019 iPhones relative to our expectation could raise near-term volume outlook for C2019, it would drive medium-term risks relative to the impact of potential tariffs and 5G iPhone volume outlook.
- 2019 iPhones to have limited upgrades; surprises unlikely.** The minor upgrades expected to the 2019 iPhones that consumers will care most about are: **1) Camera:** Both OLED models will carry triple cameras; LCD model will go with dual camera; and **2) Wireless charging:** bilateral wireless charging which will enable one iPhone to charge other Qi-standard-compatible devices wirelessly. Other feature changes are detailed in a recent report from our Asia Technology team (see [report](#)).
- Forecast volumes for 2019 iPhones in C2019 to exceed 2018, largely on account of timing changes of launches relative to last year.** We forecast 2019 iPhone volumes sold in the remainder of this calendar year following general availability later this month to exceed volumes for 2018 iPhones in C2018 by roughly 4 mn units, largely driven by our expectation for general availability of all three new iPhones to be at the same time this year relative to a delay for the iPhone XR last year.
- Refresh and upgrade of Apple watch and other hardware devices are important in continuing to leverage large installed base and drive hardware revenues.** While growth in Services revenue through leverage of the large and growing installed base is key to the investment story for Apple, we believe Apple can still continue to drive growth in hardware revenues through continued increases in both volumes and pricing for an updated Apple watch and other hardware devices (including potentially HomePods).

Sources for: Style Exposure – J.P. Morgan Quantitative and Derivatives Strategy; all other tables are company data and J.P. Morgan estimates.

Overweight

AAPL, AAPL US

Price (06 Sep 19): \$213.26

Price Target (Dec-19): \$243.00

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Quarterly Forecasts (FYE Sep)

Adj. EPS (\$)	2018A	2019E	2020E
Q1	3.89	4.18A	4.34
Q2	2.73	2.46A	2.80
Q3	2.34	2.18A	2.73
Q4	2.91	2.89	3.38
FY	11.87	11.71	13.25

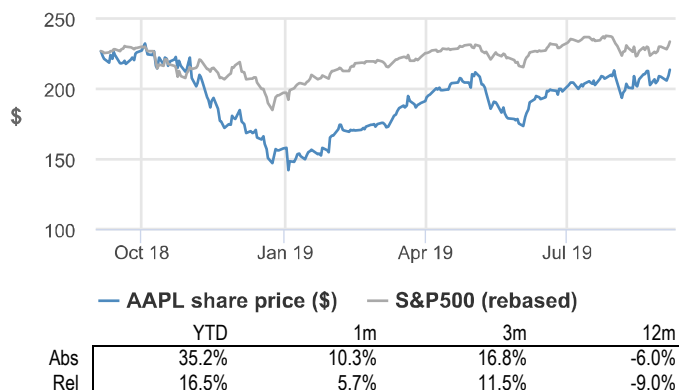
Style Exposure

Quant Factors	Current Rank	Historical Rank			
		6M	1Y	3Y	5Y
Value	54	46	55	34	65
Growth	74	73	75	82	76
Momentum	40	87	43	77	10
Quality	4	3	2	2	4
Low Vol	19	24	15	25	18
ESGQ	31	95	31	17	18

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

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Price Performance



Company Data

Shares O/S (mn)	4,601
52-week range (\$)	233.47-142.00
Market cap (\$ mn)	981,290.30
Exchange rate	1.00
Free float(%)	88.2%
3M - Avg daily vol (mn)	25.72
3M - Avg daily val (\$ mn)	5,203.8
Volatility (90 Day)	30
Index	S&P 500
BBG BUY HOLD SELL	23 21 5

Key Metrics (FYE Sep)

\$ in millions	FY18A	FY19E	FY20E	FY21E
Financial Estimates				
Revenue	265,595	258,982	273,172	296,749
Adj. EBIT	70,898	63,554	67,552	74,056
Adj. EBITDA	81,801	75,876	79,470	86,628
Adj. net income	59,531	54,463	56,933	62,259
Adj. EPS	11.87	11.71	13.25	15.45
BBG EPS	11.79	11.63	12.74	14.28
Cashflow from operations	77,434	73,852	84,831	86,542
FCFF	64,121	62,677	70,911	72,336
Margins and Growth				
Revenue growth	15.9%	(2.5%)	5.5%	8.6%
EBIT margin	26.7%	24.5%	24.7%	25.0%
EBIT growth	15.6%	(10.4%)	6.3%	9.6%
EBITDA margin	30.8%	29.3%	29.1%	29.2%
EBITDA growth	14.4%	(7.2%)	4.7%	9.0%
Net margin	22.4%	21.0%	20.8%	21.0%
Adj. EPS growth	29.2%	(1.3%)	13.1%	16.6%
Ratios				
Adj. tax rate	18.3%	16.3%	17.0%	17.1%
Interest cover	-	-	-	-
Net debt/Equity	0.8	0.7	1.2	2.2
Net debt/EBITDA	1.1	0.8	0.9	1.0
ROE	49.4%	56.4%	78.4%	128.2%
Valuation				
FCFF yield	6.0%	6.3%	7.7%	8.4%
Dividend yield	-	-	-	-
EV/EBITDA	10.5	11.3	10.8	9.9
Adj. P/E	18.0	18.2	16.1	13.8

Summary Investment Thesis and Valuation

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

Our December 2019 price target of \$243 is based on 17.0x blended P/E multiple (roughly in line with NTM trading multiple) on our earnings forecast. Our blended P/E is arrived at based on a SOTP methodology using 11.0x P/E for iPhones, 10.0x for Mac and iPad devices, 25x for Services, 20x for Apple Watch, and 10.0x for Other Products.

Performance Drivers

Market	29%
Sector	23%
Macro	17%
Style	8%
Idiosyn.	23%

Factors	6M Corr	1Y Corr
Market: MSCI US	0.76	0.65
Sect: Technology	0.66	0.66
Ind: Tech Hard Equip	0.91	0.85
Macro:		
Credit Spread	-0.32	-0.20
Crude Oil	0.02	0.14
US 10yr yield	-0.07	-0.10
Quant Styles:		
Size	0.24	0.24
Growth	-0.41	-0.14
Quality	-0.08	0.13

Sources for: Performance Drivers – Bloomberg, J.P. Morgan Quantitative and Derivatives Strategy; all other tables are company data and J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Apple Inc. (Overweight; Price Target: \$243.00)

Investment Thesis

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Valuation

Our December 2019 price target of \$243 is based on 17.0x blended P/E multiple (roughly in line with NTM trading multiple) on our earnings forecast. Our blended P/E is arrived at based on a SOTP methodology using 11.0x P/E for iPhones, 10.0x for Mac and iPad devices, 25x for Services, 20x for Apple Watch, and 10.0x for Other Products.

Key assumptions used in formulating the price target are:

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

Table 1: AAPL P/E-Based Price Target Analysis

\$ in millions, except per share amounts

	NTM Qtrs 1-4	CY20E
JPM Net Income	55,728	59,950
JPM EPS	\$12.75	\$14.28
P/E Multiple	16.7x	
JPM P/E Multiple		17.0x
Total Equity Value	981,290	1,019,143
Average Diluted Share Count	4,601.4	4,399.9
Implied Share Price	\$213.3	\$243.0
Current Value per Share	\$213.26	\$213.26
Upside vs. Current		14%
<u>Memo:</u>		
(-) Net Cash/(Debt)	102,192	94,083
Enterprise Value	879,098	925,060
JPM EBITDA	77,753	83,421
<i>Implied EV/EBITDA</i>	<i>11.3x</i>	<i>11.1x</i>

Source: J.P. Morgan estimates.

Risks to Rating and Price Target

Industry Downside Risks

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

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

Company-Specific Downside Risks

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

Key man risk around departure of chief executive officer. While risks related to departure of management executives appear considerably lower relative to the past, we believe the execution on strategic priorities under CEO Tim Cook's leadership does still present modest risk to the share price, although we see a strong group of executives to support business performance without disruptions.

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

Table 2: AAPL Summary Table

\$ mns

Sep Fiscal Year End	2017	1Q18	2Q18	3Q18	4Q18	2018	1Q19	2Q19	3Q19	4Q19E	2019E	1Q20E	2Q20E	3Q20E	4Q20E	2020E
Revenue	229,234	88,293	61,137	53,265	62,900	265,595	84,310	58,015	53,809	62,848	258,982	85,203	60,418	59,547	68,005	273,172
% chg y/y	6.6%	12.7%	15.6%	17.3%	19.6%	15.9%	-4.5%	-5.1%	1.0%	-0.1%	-2.5%	1.1%	4.1%	10.7%	8.2%	5.5%
Cost of Sales	141,048	54,381	37,715	32,844	38,816	163,756	52,279	36,194	33,582	38,894	160,949	53,231	37,028	36,544	42,032	168,836
Gross Margin	38.5%	38.4%	38.3%	38.3%	38.3%	38.3%	38.0%	37.6%	37.6%	38.1%	37.9%	37.5%	38.7%	38.6%	38.2%	38.2%
SG&A	15,261	4,231	4,150	4,108	4,216	16,705	4,783	4,458	4,426	4,431	18,098	4,601	4,713	4,764	4,760	18,838
as % of sales	6.7%	4.8%	6.8%	7.7%	6.7%	6.3%	5.7%	7.7%	8.2%	7.1%	7.0%	5.4%	7.8%	8.0%	7.0%	6.9%
R&D	11,581	3,407	3,378	3,701	3,750	14,236	3,902	3,948	4,257	4,274	16,381	4,644	4,290	4,526	4,488	17,947
as % of sales	5.1%	3.9%	5.5%	6.9%	6.0%	5.4%	4.6%	6.8%	7.9%	6.8%	6.3%	5.5%	7.1%	7.6%	6.6%	6.6%
Operating Income (COI)	61,344	26,274	15,894	12,612	16,118	70,898	23,346	13,415	11,544	15,249	63,554	22,727	14,388	13,713	16,724	67,552
operating margin	26.8%	29.8%	26.0%	23.7%	25.6%	26.7%	27.7%	23.1%	21.5%	24.3%	24.5%	26.7%	23.8%	23.0%	24.6%	24.7%
bp chg y/y	-89 bp	-6 bp	-65 bp	-4 bp	67 bp	-7 bp	-207 bp	-287 bp	-222 bp	-136 bp	-215 bp	-102 bp	69 bp	158 bp	33 bp	19 bp
Other income/(expense)	2,745	756	274	672	303	2,005	560	378	367	200	1,505	250	250	250	250	1,000
Pre-tax Income	64,089	27,030	16,168	13,284	16,421	72,903	23,906	13,793	11,911	15,449	65,059	22,977	14,638	13,963	16,974	68,552
Income Tax	15,738	6,965	2,346	1,765	2,296	13,372	3,941	2,232	1,867	2,557	10,597	3,895	2,481	2,367	2,877	11,620
tax rate %	24.6%	25.8%	14.5%	13.3%	14.0%	18.3%	16.5%	16.2%	15.7%	16.6%	16.3%	17.0%	17.0%	17.0%	17.0%	17.0%
Net Income	48,351	20,065	13,822	11,519	14,125	59,531	19,965	11,561	10,044	12,893	54,463	19,082	12,157	11,596	14,097	56,933
Diluted EPS	\$9.19	\$3.89	\$2.73	\$2.34	\$2.91	\$11.87	\$4.18	\$2.46	\$2.18	\$2.89	\$11.71	\$4.34	\$2.80	\$2.73	\$3.38	\$13.25
Diluted Shares (avg.)	5,263	5,158	5,068	4,927	4,848	5,016	4,773	4,701	4,601	4,468	4,651	4,400	4,335	4,252	4,172	4,298
EBITDA ex-equity income	71,501	29,019	18,633	15,277	18,872	81,801	26,741	16,455	14,477	18,203	75,876	25,453	17,227	16,869	19,920	79,470
% chg y/y	2.2%	10.1%	13.4%	16.4%	20.9%	14.4%	-7.9%	-11.7%	-5.2%	-3.5%	-7.2%	-4.8%	4.7%	16.5%	9.4%	4.7%
EBITDA margin	31.2%	32.9%	30.5%	28.7%	30.0%	30.8%	31.7%	28.4%	26.9%	29.0%	29.3%	29.9%	28.5%	28.3%	29.3%	29.1%
bp chg y/y	-134 bp	-76 bp	-58 bp	-22 bp	33 bp	-39 bp	-115 bp	-211 bp	-178 bp	-104 bp	-150 bp	-184 bp	15 bp	142 bp	33 bp	-21 bp
Cash	268,895	285,097	267,226	243,743	237,100	237,100	245,035	227,240	210,610	208,107	208,107	220,672	204,841	197,701	195,399	195,399
Debt	115,680	122,400	121,840	114,600	114,483	114,483	114,730	112,630	108,418	108,418	108,418	108,418	108,418	108,418	108,418	108,418
Gross Leverage (ttm)	1.6x	1.7x	1.6x	1.5x	0.9x	1.4x	1.4x	1.5x	1.4x	1.4x	1.4x	1.5x	1.4x	1.4x	1.4x	1.4x
Net Debt	(153,215)	(162,697)	(145,386)	(129,143)	(122,617)	(122,617)	(130,305)	(114,610)	(102,192)	(99,689)	(99,689)	(112,254)	(96,423)	(89,283)	(86,981)	(86,981)
Net Leverage (ttm)	-2.1x	-2.2x	-1.9x	-1.6x	-1.0x	-1.5x	-1.6x	-1.5x	-1.3x	-1.3x	-1.3x	-1.5x	-1.3x	-1.1x	-1.1x	-1.1x
Operating Cash Flow	63,598	28,293	15,130	14,488	19,523	77,434	26,690	11,155	11,636	24,371	73,852	28,911	11,108	19,936	24,876	84,831
Capital Expenditures	(12,451)	(2,810)	(4,195)	(3,267)	(3,041)	(13,313)	(3,355)	(2,363)	(2,000)	(3,457)	(11,175)	(2,982)	(3,625)	(3,573)	(3,740)	(13,920)
Free Cash Flow	51,147	25,483	10,935	11,221	16,482	64,121	23,335	8,792	9,636	20,914	62,677	25,929	7,483	16,364	21,135	70,911
Dividends	(12,769)	(3,339)	(3,190)	(3,653)	(3,530)	(13,712)	(3,568)	(3,443)	(3,629)	(3,417)	(14,057)	(3,364)	(3,314)	(3,504)	(3,437)	(13,619)
Share repurchases	(32,900)	(10,095)	(22,756)	(20,783)	(19,104)	(72,738)	(8,796)	(23,702)	(16,955)	(20,000)	(69,453)	(10,000)	(20,000)	(20,000)	(20,000)	(70,000)

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

Apple: Summary of Financials

Income Statement - Annual						Income Statement - Quarterly					
	FY17A	FY18A	FY19E	FY20E	FY21E		1Q19A	2Q19A	3Q19A	4Q19E	
Revenue	229,234	265,595	258,982	273,172	296,749	Revenue	84,310A	58,015A	53,809A	62,848	
COGS	(141,048)	(163,756)	(160,949)	(168,836)	(182,461)	COGS	(52,279)A	(36,194)A	(33,582)A	(38,894)	
Gross profit	88,186	101,839	98,033	104,337	114,288	Gross profit	32,031A	21,821A	20,227A	23,954	
SG&A	(15,261)	(16,705)	(18,098)	(18,838)	(20,646)	SG&A	(4,783)A	(4,458)A	(4,426)A	(4,431)	
Adj. EBITDA	71,501	81,801	75,876	79,470	86,628	Adj. EBITDA	26,741A	16,455A	14,477A	18,203	
D&A	(10,157)	(10,903)	(12,322)	(11,918)	(12,571)	D&A	(3,395)A	(3,040)A	(2,933)A	(2,954)	
Adj. EBIT	61,344	70,898	63,554	67,552	74,056	Adj. EBIT	23,346A	13,415A	11,544A	15,249	
Net Interest	-	-	-	-	-	Net Interest	-	-	-	-	
Adj. PBT	64,089	72,903	65,059	68,552	75,056	Adj. PBT	23,906A	13,793A	11,911A	15,449	
Tax	(15,738)	(13,372)	(10,597)	(11,620)	(12,797)	Tax	(3,941)A	(2,232)A	(1,867)A	(2,557)	
Minority Interest	-	-	-	-	-	Minority Interest	-	-	-	-	
Adj. Net Income	48,351	59,531	54,463	56,933	62,259	Adj. Net Income	19,965A	11,561A	10,044A	12,893	
Reported EPS	9.19	11.87	11.71	13.25	15.45	Reported EPS	4.18A	2.46A	2.18A	2.89	
Adj. EPS	9.19	11.87	11.71	13.25	15.45	Adj. EPS	4.18A	2.46A	2.18A	2.89	
DPS	-	-	-	-	-	DPS	-	-	-	-	
Payout ratio	-	-	-	-	-	Payout ratio	-	-	-	-	
Shares outstanding	5,263	5,016	4,651	4,298	4,031	Shares outstanding	4,773A	4,701A	4,601A	4,468	
Balance Sheet & Cash Flow Statement						Ratio Analysis					
	FY17A	FY18A	FY19E	FY20E	FY21E		FY17A	FY18A	FY19E	FY20E	FY21E
Cash and cash equivalents	20,289	25,913	49,648	36,940	25,641	Gross margin	38.5%	38.3%	37.9%	38.2%	38.5%
Accounts receivable	17,874	23,186	24,441	24,935	23,652	EBITDA margin	31.2%	30.8%	29.3%	29.1%	29.2%
Inventories	4,855	3,956	6,482	8,406	8,865	EBIT margin	26.8%	26.7%	24.5%	24.7%	25.0%
Other current assets	85,627	78,284	66,940	66,940	66,940	Net profit margin	21.1%	22.4%	21.0%	20.8%	21.0%
Current assets	128,645	131,339	147,512	137,222	125,099	ROE	36.9%	49.4%	56.4%	78.4%	128.2%
PP&E	33,783	41,304	38,139	40,141	41,775	ROA	13.9%	16.1%	15.6%	17.3%	19.4%
LT investments	194,714	170,799	114,375	114,375	114,375	ROCE	19.9%	24.6%	25.6%	31.0%	39.1%
Other non current assets	18,177	22,283	33,634	33,634	33,634	SG&A/Sales	6.7%	6.3%	7.0%	6.9%	7.0%
Total assets	375,319	365,725	333,660	325,371	314,883	Net debt/equity	0.7	0.8	0.7	1.2	2.2
Short term borrowings	18,473	20,748	23,482	23,482	23,482	P/E (x)	23.2	18.0	18.2	16.1	13.8
Payables	49,049	55,888	47,538	63,048	65,324	P/BV (x)	8.4	10.0	11.5	15.5	22.7
Other short term liabilities	33,292	40,230	40,629	43,517	52,128	EV/EBITDA (x)	12.0	10.5	11.3	10.8	9.9
Current liabilities	100,814	116,866	111,649	130,047	140,934	Dividend Yield	-	-	-	-	-
Long-term debt	97,207	93,735	84,936	84,936	84,936	Sales/Assets (x)	0.7	0.7	0.7	0.8	0.9
Other long term liabilities	43,251	47,977	51,143	51,143	51,143	Interest cover (x)	-	-	-	-	-
Total liabilities	241,272	258,578	247,728	266,126	277,013	Operating leverage	47.8%	98.2%	416.0%	114.8%	111.6%
Shareholders' equity	134,047	107,147	85,932	59,245	37,870	Revenue y/y Growth	6.6%	15.9%	(2.5%)	5.5%	8.6%
Minority interests	-	-	-	-	-	EBITDA y/y Growth	2.2%	14.4%	(7.2%)	4.7%	9.0%
Total liabilities & equity	375,319	365,725	333,660	325,371	314,883	Tax rate	24.6%	18.3%	16.3%	17.0%	17.1%
BVPS	25.47	21.36	18.48	13.79	9.40	Adj. Net Income y/y Growth	7.1%	23.1%	(8.5%)	4.5%	9.4%
y/y Growth	9.6%	(16.1%)	(13.5%)	(25.4%)	(31.8%)	EPS y/y Growth	12.3%	29.2%	(1.3%)	13.1%	16.6%
Net debt/(cash)	95,391	88,570	58,770	71,478	82,777	DPS y/y Growth	-	-	-	-	-
Cash flow from operating activities	63,598	77,434	73,852	84,831	86,542						
o/w Depreciation & amortization	10,157	10,903	12,322	11,918	12,571						
o/w Changes in working capital	(5,550)	34,694	2,876	15,980	11,711						
Cash flow from investing activities	(46,446)	16,066	43,237	(13,920)	(14,206)						
o/w Capital expenditure	(12,451)	(13,313)	(11,175)	(13,920)	(14,206)						
as % of sales	5.4%	5.0%	4.3%	5.1%	4.8%						
Cash flow from financing activities	(17,347)	(87,876)	(93,271)	(83,619)	(83,634)						
o/w Dividends paid	(12,769)	(13,712)	(14,057)	(13,619)	(13,634)						
o/w Net debt issued/(repaid)	29,014	432	(7,526)	0	0						
Net change in cash	(195)	5,624	23,818	(12,708)	(11,299)						
Adj. Free cash flow to firm	51,147	64,121	62,677	70,911	72,336						
y/y Growth	(3.7%)	25.4%	(2.3%)	13.1%	2.0%						

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

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

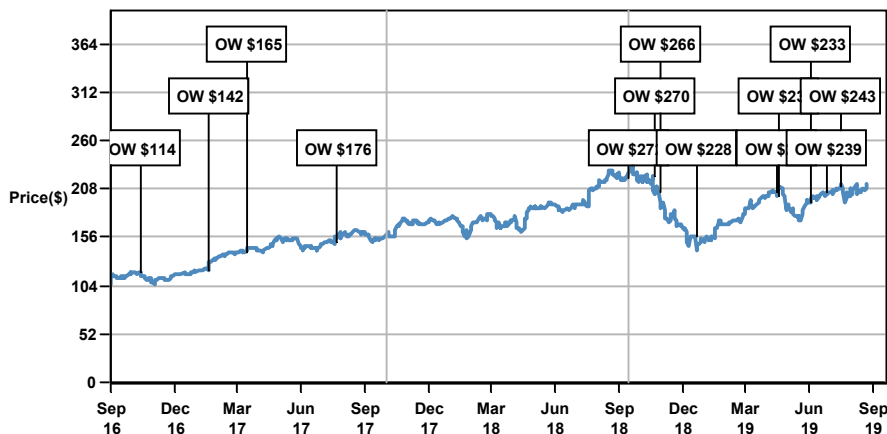
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Apple (AAPL, AAPL US) Price Chart



Date	Rating	Share Price (\$)	Price Target (\$)
26-Oct-16	OW	118.25	114
01-Feb-17	OW	121.35	142
26-Mar-17	OW	140.64	165
02-Aug-17	OW	150.05	176
27-Sep-18	OW	220.42	272
02-Nov-18	OW	222.22	270
12-Nov-18	OW	204.47	266
03-Jan-19	OW	157.92	228
29-Apr-19	OW	204.30	230
01-May-19	OW	200.67	235
17-Jun-19	OW	192.74	233
08-Jul-19	OW	204.23	239
30-Jul-19	OW	209.68	243

Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
Initiated coverage May 01, 1999. All share prices are as of market close on the previous business day.
Break in coverage Oct 13, 2017 - Sep 27, 2018.

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IB clients*	76%	65%	56%

*Percentage of subject companies within each of the "buy," "hold" and "sell" categories for which J.P. Morgan has provided investment banking services within the previous 12 months.

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