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10 April 2020

Apple

NYSE: AAPL

Recommendation: BUY, 8, \$2,143.92

Intrinsic Value: \$315.95



Investment Thesis

We are recommending the purchase of a 3% position in Apple (AAPL) for the CSUF SMIF portfolio with a target price of \$315.95, representing an undervaluation of 17.9%. We intend to fund the purchase through cash, allocating 3% weight into the new position. Apple is well-positioned to withstand the economic instability caused by the Coronavirus due to its \$207B cash on hand. Additionally, the company demonstrates strong growth within its services segment pushing operating margins to increase by 22-28% into 2024. The wearable hardware segment has captivated consumers and is projected to grow with a CAGR of 41% into 2023. Lastly, AAPL seeks opportunity to penetrate the \$3.5B health care

Price Performance



Key Statistics

Market Overview

Current Price:	\$267.99
52 Week High:	\$327.85
52 Week Low:	\$170.27
Volume:	42.58M
Shares Outstanding:	4.47M
Market Cap:	1,198.3B
Enterprise Value:	1,099.5B
Beta (3yr Adj):	1.13
Dividend:	\$3.08

Sector Overview

Sector:	Info Tech
Industry:	Electronic Tech

Financial Strength

Current Ratio:	1.5
Quick Ratio:	1.5
LT Debt to Equity	101.46%
Net Debt/FFO	0.10%
ROE:	55.90%

Valuation

Intrinsic Value (DCF):	\$277.22
P/E:	22.54
P/S:	4.79
EV/EBITDA:	14.75
Dividend Yield:	1.15%

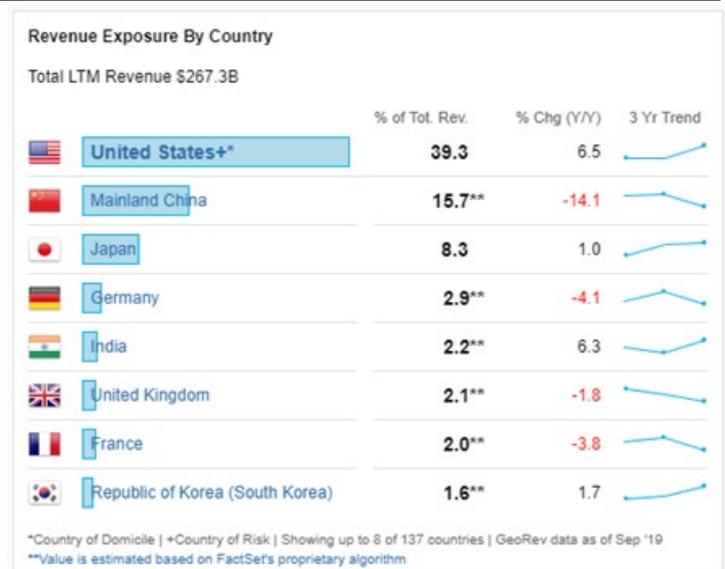
Highlights

- Services segment sees 30% increase in subscriptions during 4Q 2019 versus 4Q 2018
- Fixed cost structure for Services segment allows for margin expansion of 22-28% into 2024
- Wearables segment forecasted to grow at a CAGR of 41% into 2023
- Opportunity to expand within the health care industry capitalizing on \$3.5B market

Company Overview

Apple designs, manufactures, and sells smartphones, personal computers, tablets, wearables, accessories, and other variety of related services. Apple's product portfolio includes iPhone, Mac, iPod, Apple Watch, Apple TV. Its portfolio of consumer and professional software applications include iOS, macOS, watchOS and tvOS operating systems, iCloud, Apple Pay and a variety of accessory, service and support offerings. Apple sells and delivers digital content and applications through the iTunes Store, App Store, Mac App Store, TV App Store, iBooks Store and Apple Music.

The company's reportable segments consist of the Americas, Europe, Greater China, Japan and Rest of Asia Pacific.



Source: FactSet

Ecosystem

Apple's ecosystem of software and services allow users to do more with the products, incentivizing customers to invest further in the ecosystem. The ecosystem started with the App store when users would pay \$.99 to \$1.99 for new software designed to run on Apple devices. The company continued to build it out by changing the way products interacted with one another. It started with ability to use iMessage and FaceTime from an iPad, allowing for users to carry iPhone conversations via tablet and has evolved into launching a built-in "intelligent assistant", Siri, enabling users to speak natural voice language commands to operate mobile devices and apps. Services such as Apple Music, iCloud, etc. keep users locked in the ecosystem for prolonged periods of time – making it cumbersome to switch to a different provider.

Product and Services Performance

- iPhone net sales decreased due to lower iPhone unit sales
- Mac increased because of higher net sales of MacBook Air
- iPad increased from higher sales of the iPad Pro
- Wearables, Home and Accessories increased due to higher net sales of AirPods and Apple Watch
- Services net sales increased from higher sales in App Store, licensing and AppleCare

	2019	Change	2018	Change	2017
iPhone	142,381	-14%	164,888	18%	139,337
Mac	25,740	2%	25,198	-1%	25,569
iPad	21,280	16%	18,380	-2%	18,802
Wearables, Home and Accessories	24,482	41%	17,381	36%	12,826
Services	46,291	16%	39,748	22%	32,700

Source: Apple's 10-k

Catalysts

Growth in services segment

Services contributed to \$46B in annual revenue during fiscal 2019. It is Apple's fastest growing segment offering 18% revenue growth has of 4Q 2019 (\$12.5B) from the 13% in fiscal Q3. Growth was broad-based, resulting in double-digit revenue growth rates in all five of Apple's geographic segments. Revenue was strong across the company's different service offerings such as App Store, AppleCare, Music, cloud services and App Store search and business. Subscriptions have been a key driver for services, providing 450 million paid subscriptions (up from 330 million from 4Q 2018). Most recently, Apple has continued to broaden segment launching Apple News+, Apple Card, and Apple Arcade. The services segment's fixed cost structure allows for Apple monopolize on increasing subscription costs to expand their margins ~22-28% into 2024.

Growth in wearables segment

The Wearables segment started in 2015 and has quickly transformed into a \$20.8B business. Products within the segment consists of the Apple Watch and AirPods, which has seen 37% in growth during 4Q 2019 reaching \$10B in revenue. Consumer demand for AirPods remains high with the product continuously selling out despite production increases. According to IDC, global wireless earwear shipments are expected to grow from 139 million units in 2019 to 274 million units into 2023 at a 41% CAGR. Apple currently holds 50% market share in wireless headphone units and 71% of all wireless headphone revenue, benefitting substantially and contributing to revenue growth of 3-5% into 2023.



Source: Motley Fool

Health Care Penetration

Apple can capitalize on opportunities within health care with the Apple Watch. Morgan Stanley estimates that health for Apple will be ~\$15B in sales by 2021 from the Apple Watch's health features such as monitoring heart rate and steps. Apple has recruited 400,000 people in less than a year for the Apple Watch heart health study with Stanford University, suggesting that individuals are willing to share their medical information with Apple. The firm has signed deals with health insurers, such as Aetna, who are willing to pay for some portion of the Apple watch on behalf of their members. The company is also in the process of talks with Medicare plans to gain exposure to those over the age of 65.

Risks

Worldwide iPhone supply temporarily constrained

The outbreak of the Coronavirus has caused Foxconn, Apple's iPhone manufacturer, to temporarily halt production leading to a shortage in iPhone and iPhone replacement parts. Foxconn has approved to resume production in Zhengzhou, a key manufacturing plant in China, but only 10% of the work force has returned. This affects revenue projections for the upcoming quarters due to the delay in reopening facilities and an insufficient workforce causing revenues to be -2% in 2020 and steadily increasing to 2.5% in 2021. However, this only temporary and we believe Apple's revenue will improve from 2022 to 2024 growing from 4-5%.

Declining demand in China

	2019	2018	2017
Products	32.20%	34.30%	35.70%
Services	63.70%	60.80%	55.00%

Source: Apple's 10-k

According to the China Academy of Information and Communications Technology (CAICT), China iPhone sales dropped 61% YoY selling 494,000 units in February versus the 1.3 million sold February 2019 and are potentially linked to the Coronavirus. Additionally, Apple has experienced a loss in market share due to premium smartphones losing popularity. Competitive pressures have been increasing as cheaper alternatives Vivo and Oppo gain popularity. However, this does not pose as a long-term risk as Apple's management has stated the company is actively working towards relying less on their iPhone business, and focusing more on Services and Wearables. (see Appendix 7 for changes in business segment) Additionally, Service's gross margins have been increasing rapidly averaging at 59.83% from 2017-2019 versus Product's margins of 34.07%. Although demand for iPhones have been decreasing, the YoY margins for services offset the risk as Apple diversifies their revenue into more profitable segments.

Dodson Screener

Company Name	Current Ratio	Quick Ratio	LT Debt/Equity	Total Debt/EBITDA	Return on Equity	Return on Invested Capital	EBIT Margin	Dividends per Share	Price to Earnings	Price to Sales	PEG Ratio	Enterprise Value/EBITDA
Apple	1.60	1.56	112.00	1.43	55.47	28.71	24.51	7.80	18.11	3.82	1.52	13.28
HP	0.73	0.53	-	1.00	-	99.46	7.01	13.61	6.92	0.35	0.43	4.43
Samsung Electronics	2.89	2.47	1.24	0.32	8.69	8.62	12.05	-5.63	13.40	1.25	5.88	3.48
Alphabet	3.37	3.35	7.33	0.10	18.12	17.26	21.98	-	21.72	4.60	1.26	13.37
Microsoft	2.80	2.77	71.58	1.28	43.83	24.53	36.66	10.23	23.91	7.88	1.67	16.30

- Highest level of debt versus peers return on equity
- Second highest return on invested capital and EBIT margin

Correlation Matrix

If we look at Apple's correlation with our current holdings below, the only correlation over 0.5 is the VONG ETF.

	AAPL	BAC	COST	ITA	IWD	VONG	WM
AAPL	-						
BAC	0.369	-					
COST	0.423	0.232	-				
ITA	0.389	0.711	0.374	-			
IWD	0.481	0.819	0.455	0.858	-		
VONG	0.670	0.685	0.587	0.798	0.880	-	
WM	0.266	0.438	0.444	0.715	0.667	0.608	-

To the right, we also have a correlation matrix that includes all the proposed trades in the pipeline, but that have yet to be incorporated. Looking at this, we still see Apple being a positive addition to the portfolio with low correlation to most of the stocks being proposed.

	AAPL
AAPL	-
BAC	0.382
COST	0.441
CVS	0.127
DIS	0.284
ISRG	0.427
ITA	0.385
IWD	0.480
LVS	0.379
MRK	0.124
MSFT	0.600
PYPL	0.428
ROST	0.350
TSN	0.184
VONG	0.679
WM	0.295

Valuation

**Base Case:**

For our base case, we believe Apple to decline in revenue for 2020 due to the outbreak of Coronavirus disrupting the supply chain; however, we expect revenues to increase going forward as the AAPL recovers and continues to build upon their Services and Wearables segment.

Projected Cash Flows	2020	2021	2022	2023	2024	% of revenue
<i>Revenue Growth Rate</i>	0.57%	7.21%	7.92%	8.43%	8.43%	
<i>iPhone</i>	-4.00%	0.00%	1.00%	2.00%	2.00%	54.70%
<i>Mac</i>	-1.00%	1.00%	1.00%	1.00%	1.00%	9.90%
<i>iPad</i>	-5.00%	12.00%	14.00%	14.00%	14.00%	8.20%
<i>Wearables, Home & Accessories</i>	-5.00%	14.00%	14.00%	13.60%	13.60%	9.40%
<i>Services</i>	21.00%	27.00%	27.00%	27.00%	27.00%	17.80%
<i>Total Revenue</i>	261,660	280,512	302,718	328,223	355,877	
EBIT	65,415	70,128	78,707	88,620	99,645	
Less: Tax	(10,430)	(11,181)	(12,549)	(14,129)	(15,887)	
NOPAT	54,985	58,947	66,158	74,491	83,758	
Plus: Depreciation	11,651	12,491	13,480	14,615	15,847	
Less: Increase in Capital Expenditures	(10,466)	(11,220)	(12,109)	(13,129)	(14,235)	
<i>Net Working Capital</i>	57,565	61,713	66,598	72,209	78,293	
Less: Increase in Net Working Capital	464	(4,148)	(4,885)	(5,611)	(6,084)	
Free Cash Flow	56,634	56,070	62,643	70,366	79,286	
Terminal Growth Rate g (after 5 years)	2.50%					
WACC	7.14%					
Terminal Enterprise Value	1,749,936					
PV of Free Cash Flow at Time Zero	52,858	48,842	50,930	53,394	1,295,466	
Vo (\$)	1,501,489					
Net Debt (Current Debt + LT Debt - Cash)	88,570					
Equity Value (Vo - Net Debt)	1,412,919					
Number of Shares Outstanding	4,472					
Stock Price Based on DCF Method (\$)	315.95					
Current Stock Price (\$)	267.99					
% Over/ Undervalued	17.9%					

Best Case:

Our base case is contingent on a Coronavirus vaccine being discovered within this year. This will dampen the decrease in iPhone sales compared to our base case scenario. Additionally, we believe Apple will increase sales in Services and Wearables deriving to a share price of \$373.38.

Projected Cash Flows	2020	2021	2022	2023	2024	% of revenue
Revenue Growth Rate	0.81%	8.74%	9.46%	10.01%	10.01%	
iPhone	-4.00%	1.00%	2.00%	3.00%	3.00%	54.70%
Mac	-0.50%	2.00%	2.00%	2.00%	2.00%	9.90%
iPad	-5.00%	14.00%	15.00%	15.00%	15.00%	8.20%
Wearables, Home & Accessories	-3.00%	16.00%	17.00%	17.00%	17.00%	9.40%
Services	21.00%	30.00%	30.00%	30.00%	30.00%	17.80%
Total Revenue	262,278	285,193	312,172	343,411	377,776	
EBIT	57,701	65,594	81,165	92,721	105,777	
Less: Tax	(9,200)	(10,458)	(12,941)	(14,783)	(16,865)	
NOPAT	48,501	55,136	68,224	77,938	88,912	
Plus: Depreciation	11,679	12,699	13,901	15,292	16,822	
Less: Increase in Capital Expenditures	(2,623)	(2,852)	(3,122)	(3,434)	(3,778)	
Net Working Capital	57,701	62,742	68,678	75,550	83,111	
Less: Increase in Net Working Capital	600	(5,041)	(5,935)	(6,873)	(7,560)	
Free Cash Flow	58,157	59,942	73,067	82,923	94,396	
Terminal Growth Rate g (after 5 years)	2.50%					
WACC	7.14%					
Terminal Enterprise Value	2,083,436					
PV of Free Cash Flow at Time Zero	54,280	52,215	59,404	62,922	1,542,354	
Vo (\$)	1,771,175					
Net Debt (Current Debt + LT Debt - Cash)	88,570					
Equity Value (Vo - Net Debt)	1,682,605					
Number of Shares Outstanding	4,472					
Stock Price Based on DCF Method (\$)	376.25					
Current Stock Price (\$)	267.99					
% Over/ Undervalued	40.4%					

Worst Case:

In the worst-case scenario a vaccine is not discovered, and the Coronavirus wreaks havoc leading to a possibility of an economic slowdown. This causes all of Apple's segments to decrease drastically except for their Services segment deriving to a share price of \$212.02.

Projected Cash Flows	2020	2021	2022	2023	2024	% of revenue
Revenue Growth Rate	-7.35%	-7.34%	-6.39%	-6.22%	-5.01%	
iPhone	-17.00%	-17.00%	-17.00%	-17.00%	-15.00%	54.70%
Mac	-2.00%	0.00%	1.00%	1.00%	1.00%	9.90%
iPad	-8.00%	-8.00%	0.00%	1.00%	1.25%	8.20%
Wearables, Home & Accessories	-8.00%	-10.00%	-8.00%	-7.00%	-6.00%	9.40%
Services	20.00%	20.00%	20.00%	20.00%	20.00%	17.80%
Total Revenue	241,064	223,382	209,104	196,106	186,286	
EBIT	53,034	51,378	54,367	52,949	52,160	
Less: Tax	(8,456)	(8,192)	(8,668)	(8,442)	(8,316)	
NOPAT	44,578	43,186	45,699	44,507	43,844	
Plus: Depreciation	10,734	9,947	9,311	8,732	8,295	
Less: Increase in Capital Expenditures	(2,411)	(2,234)	(2,091)	(1,961)	(1,863)	
Net Working Capital	53,034	49,144	46,003	43,143	40,983	
Less: Increase in Net Working Capital	(4,067)	3,890	3,141	2,860	2,160	
Free Cash Flow	48,835	54,789	56,060	54,137	52,436	
Terminal Growth Rate g (after 5 years)	2.50%					
WACC	7.14%					
Terminal Enterprise Value	1,157,332					
PV of Free Cash Flow at Time Zero	45,579	47,727	45,577	41,079	856,765	
Vo (\$)	1,036,728					
Net Debt (Current Debt + LT Debt - Cash)	88,570					
Equity Value (Vo - Net Debt)	948,158					
Number of Shares Outstanding	4,472					
Stock Price Based on DCF Method (\$)	212.02					
Current Stock Price (\$)	267.99					
% Over/ Undervalued	-20.9%					

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Appendix

Appendix 1: WACC Calculation

OUTPUTS

Market Value of Equity	E	1,198,451	92%
Re = Cost of Equity = rf + Beta x (rM - rf)	Re	7.51%	
Market Value of Debt	D	108,047	8%
Cost of Debt	Rd	3.67%	
Corporate Tax Rate	Tc	15.94%	
V = E + D	V	1,306,498	
$(E/V) \times Re + (D/V) \times Rd \times (1 - Tc) = WACC$		7.14%	

Appendix 2: SWOT ANALYSIS

Strength Technological Innovation Distribution Channels Financial Performance	Weakness Legal Proceedings High Dependence on iPhone and iPad Product Lines
Opportunity Focus on Services Sector to Lessen Reliance on iPhone Product Line Exploring AI Technology Investment in HealthTech	Threat Risks Associated with Trade War between the US and China Foreign Exchange Risks Intensifying Rivalry

Source: MarketLine

Appendix 3: Income Statement

	2019	2018	2017	2016	2015
Sales	267,317	259,968	265,809	228,572	214,226
Cost of Goods Sold (COGS) incl. D&A	166,383	162,264	163,826	141,702	131,506
Gross Income	100,934	97,704	101,983	86,870	82,720
SG&A Expense	35,425	34,462	30,941	26,842	24,239
EBIT (Operating Income)	65,509	63,242	71,042	60,028	58,481
Nonoperating Income - Net	5,711	6,071	5,101	6,384	3,799
Interest Expense	3,471	3,576	3,240	2,323	1,456
Unusual Expense - Net	-	-	-	-	-548
Income Taxes	10,222	10,481	13,372	15,738	15,685
Consolidated Net Income	57,527	55,256	59,531	48,351	45,687
Net Income	57,527	55,256	59,531	48,351	45,687

All figures in millions of U.S. Dollar except per share items.

Appendix 4: Balance Sheet

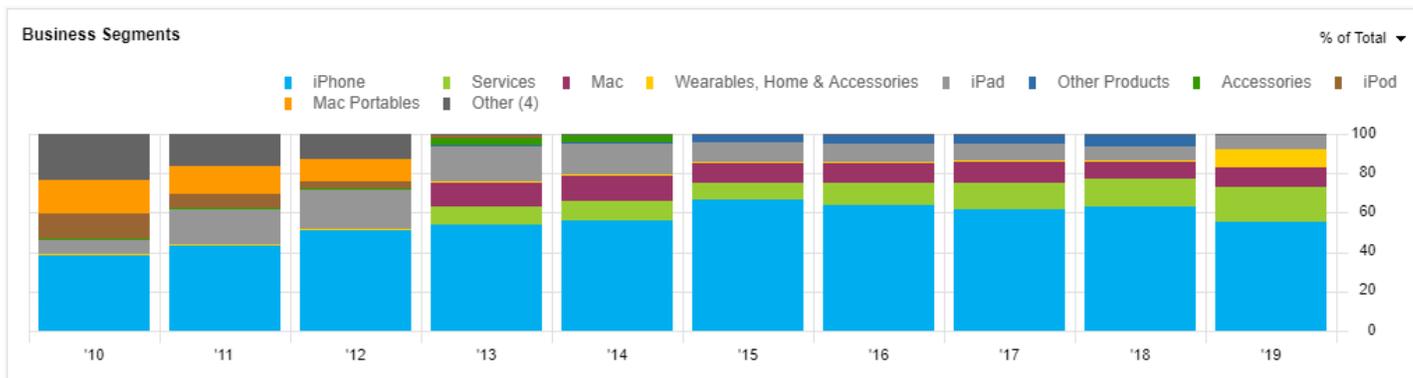
	2019	2018	2017	2016	2015
Assets					
Cash & Short-Term Investments	100,580	66,301	74,181	67,155	41,601
Short-Term Receivables	45,804	48,995	35,673	29,299	30,343
Inventories	4,106	3,956	4,855	2,132	2,349
Other Current Assets	12,329	12,087	13,936	8,283	15,085
Total Current Assets	162,819	131,339	128,645	106,869	89,378
Net Property, Plant & Equipment	37,378	41,304	33,783	27,010	22,471
Total Investments and Advances	106,698	170,799	194,714	170,430	164,065
Intangible Assets	-	-	8,015	8,620	9,009
Other Assets	31,621	22,283	10,162	8,757	5,556
Total Assets	338,516	365,725	375,319	321,686	290,479
Liabilities & Shareholders' Equity					
ST Debt & Curr. Portion LT Debt	16,240	20,748	18,473	11,605	10,999
Accounts Payable	46,236	55,888	49,049	37,294	35,490
Other Current Liabilities	43,242	40,230	33,292	30,107	34,121
Total Current Liabilities	105,718	116,866	100,814	79,006	80,610

Appendix 5: Statement of Cash Flows

	2019	2018	2017	2016	2015
Operating Activities					
Net Income / Starting Line	57,527	55,256	59,531	48,351	45,687
Depreciation, Depletion & Amortization	11,968	12,547	10,903	10,157	10,505
Deferred Taxes & Investment Tax Credit	-742	-340	-32,590	5,966	4,938
Other Funds	5,479	5,416	4,896	4,674	4,210
Funds from Operations	74,232	72,879	42,740	69,148	65,340
Changes in Working Capital	-1,015	-3,488	34,694	-5,550	484
Net Operating Cash Flow	73,217	69,391	77,434	63,598	65,824
Investing Activities					
Capital Expenditures	-9,247	-10,495	-13,313	-12,795	-13,548
Net Assets from Acquisitions	-1,415	-624	-721	-329	-297
Purchase/Sale of Investments	38,198	58,093	30,845	-33,147	-30,634
Other Funds	-1,152	-1,078	-745	-175	-1,498
Net Investing Cash Flow	26,384	45,896	16,066	-46,446	-45,977
Financing Activities					
Cash Dividends Paid	-14,090	-14,119	-13,712	-12,769	-12,150
Change in Capital Stock	-78,024	-66,116	-72,069	-32,345	-29,227
Issuance/Reduction of Debt, Net	-7,594	-7,819	432	29,014	22,057
Other Funds	-2,999	-2,922	-2,527	-1,247	-1,163
Net Financing Cash Flow	-102,707	-90,976	-87,876	-17,347	-20,483
Net Change in Cash	-3,106	24,311	5,624	-195	-636
Free Cash Flow					
Free Cash Flow per Share	14	13	13	10	10
Free Cash Flow Yield (%)	4.96	5.79	5.68	6.32	8.56

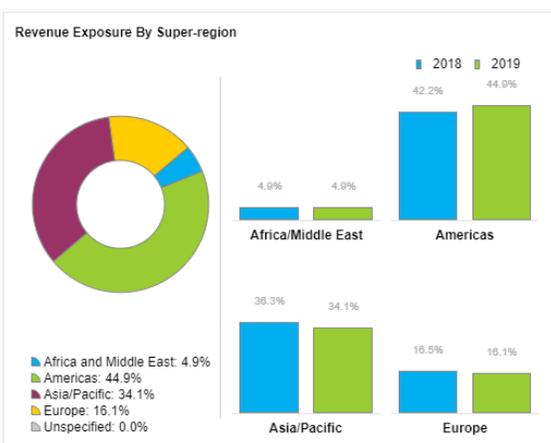
All figures in millions of U.S. Dollar except per share items.

Appendix 6: Business Segment Breakdown YoY



Source: FactSet

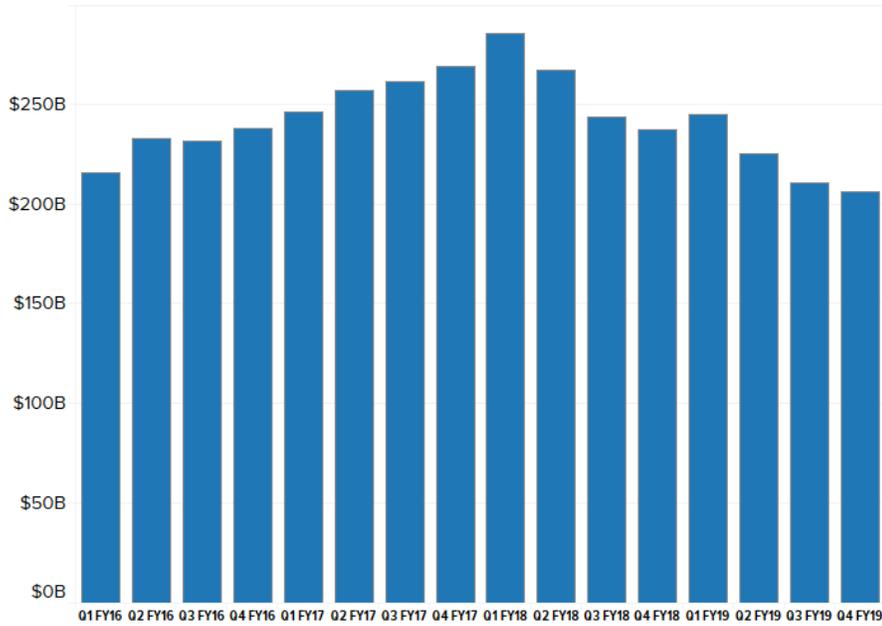
Appendix 7: Revenue Exposure



Source: FactSet

Appendix 8: Apple's Cash Position

Apple cash pile



SOURCE: Company reports

