

Apple Inc (NASDAQ: AAPL)

RADIO, TV BROADCAST, COMM EQ

Communication

MARKET VALUE (\$BIL) \$1,321.56
SHARES OUTS (MIL): 4,443
AVG DAILY VOL (000): 26,307

YIELD: 1.0%
P/E: 22.8X
BETA: 1.24X

January 6, 2020

Price:
\$297.43

OVERALL RATING

AAPL is expected to continue to be a major Value Builder reflecting capital returns that are forecasted to be above the cost of capital. Apple has a current Value Trend Rating of B (Positive). This rating combines inconsistent signals from two proprietary PTR measures of a stock's attractiveness. Apple has a neutral Appreciation Score of 43 but a very high Power Rating of 92, with the Positive Value Trend Rating the result. (See *PTR RatingMap™* and comments below).

APPRECIATION SCORE (POTENTIAL PRICE CHANGE TO TARGET)

Apple's stock is selling above targeted value. The current stock price of \$297.43 compares to targeted value 12 months forward of \$271. This neutral appreciation potential results in an appreciation score of 43 (57% of the universe has greater appreciation potential.)

POWER RATING (LIKELIHOOD OF FAVORABLE PERFORMANCE)

Apple has a Power Rating of 92. (Apple's very high Power Rating indicates that it has a higher likelihood of achieving favorable investment performance over the near to intermediate term than all but 8% of companies in the universe.) Factors contributing to this very high Power Rating include: recent price action has been extremely favorable; and the recent trend in Apple's earnings estimates has been favorable. An offsetting factor is is currently in an unfavorable positi.

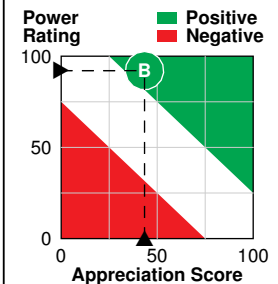
POSITIVE
RATING



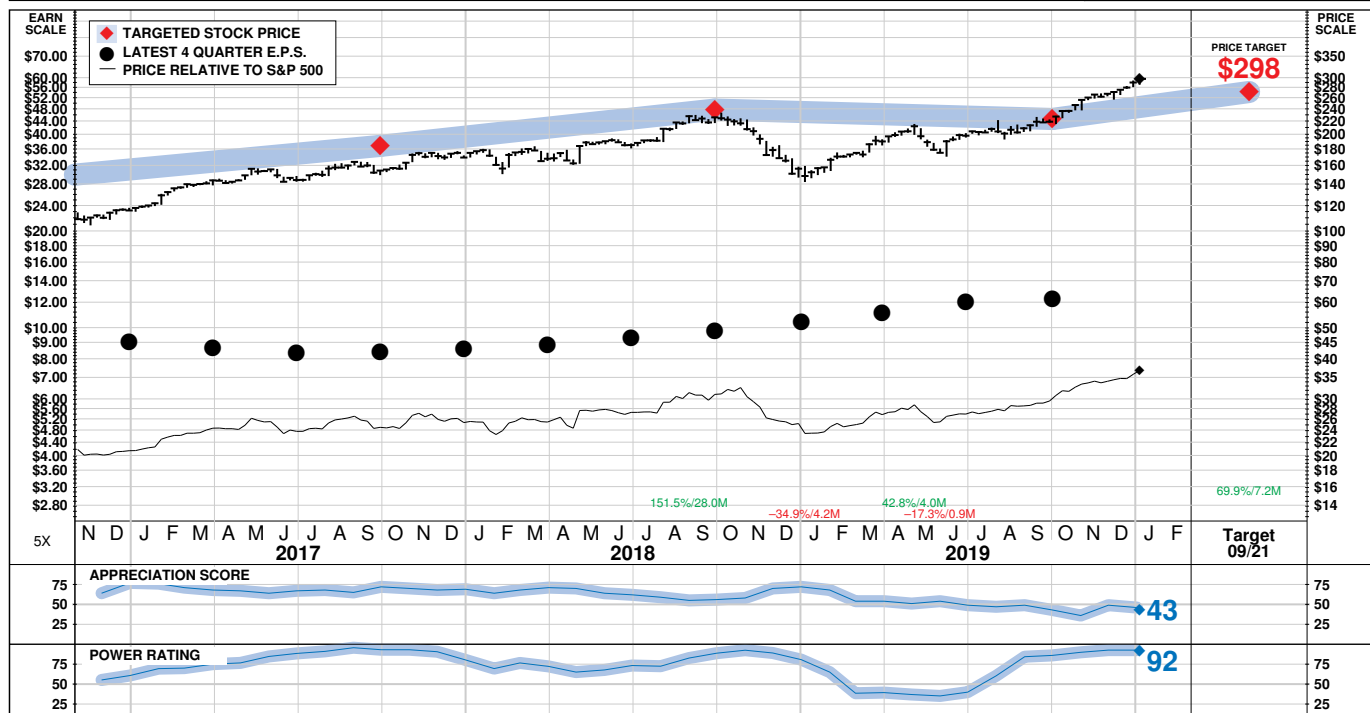
Appreciation
Score
43

Power
Rating
92

PTR RatingMap™



(The Appreciation Score and Power Rating are percentile rankings relative to a universe of 8,000 companies. 0=lowest score; 100=highest. See last page for details.)



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Investment Profile

BUSINESS DESCRIPTION

Apple Inc. designs, manufactures, and markets mobile communication and media devices, and personal computers to consumers, and small and mid-sized businesses; and education, enterprise, and government customers worldwide. The company also sells related software, services, accessories, networking solutions, and third-party digital content and applications. It offers iPhone, a line of smartphones; iPad, a line of multi-purpose tablets; and Mac, a line of desktop and portable personal computers, as well as operating systems comprising iOS, macOS, watchOS, and tvOS. The company also provides iWork, an integrated productivity suite that helps users create, present, and publish documents, presentations, and spreadsheets; and other application software, such as Final Cut Pro, Logic Pro X, and FileMaker Pro.

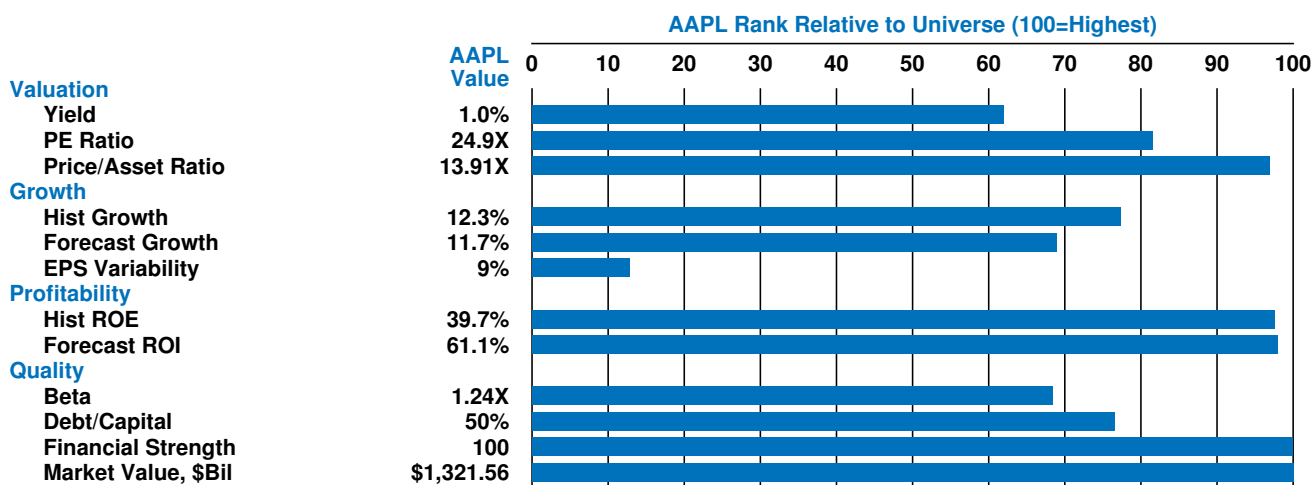
APPLE INC PEER LIST	
3M Co (NYSE: MMM)	Microsoft Corp (NASDAQ: MSFT)
Alibaba Group Holding Ltd (NYSE: BABA)	NVIDIA Corp (NASDAQ: NVDA)
Alphabet Inc (NASDAQ: GOOG)	Roche Holding AG (OTCMKTS: RHHBY)
Apple Inc (NASDAQ: AAPL)	Taiwan Semiconductor Manufacturi (NYSE: TSM)
Booking Holdings Inc (NASDAQ: BKNG)	Texas Instruments Inc (NASDAQ: TXN)
Intel Corp (NASDAQ: INTC)	Visa Inc (NYSE: V)
Mastercard Inc (NYSE: MA)	Walt Disney Co (The) (NYSE: DIS)

SUITABILITY

Apple's "suitability" for an investor's specific investment objectives is reflected in twelve investment variables that together define its investment profile relative to an 8,000 company universe. These variables measure how well Apple aligns with an investor's income orientation, risk tolerance, and need for marketability/liquidity.

Apple's financial strength is exceptional. Financial strength rating is 100.

Relative to the S&P 500 Composite, Apple Inc has significant Growth characteristics; its appeal is likely to be to investors heavily oriented toward Capital Gains; the perception is that AAPL is lower risk. High stock price volatility is a relative weakness for Apple. Apple's valuation is moderate: moderate dividend yield, moderate P/E ratio, and high price/book ratio. AAPL has unusually high market capitalization.

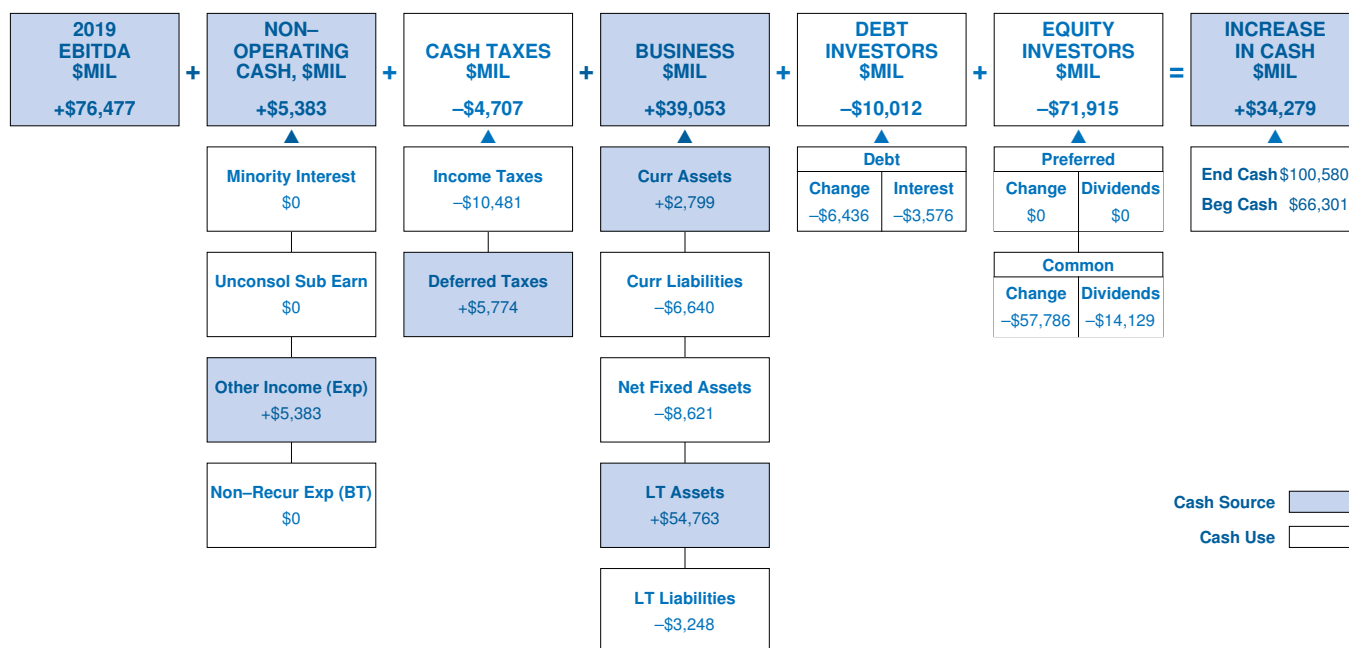


(Universe Rank is Apple's percentile rank relative to 8,000 company universe)

Cash Flow Components

CASH FLOW COMPONENTS

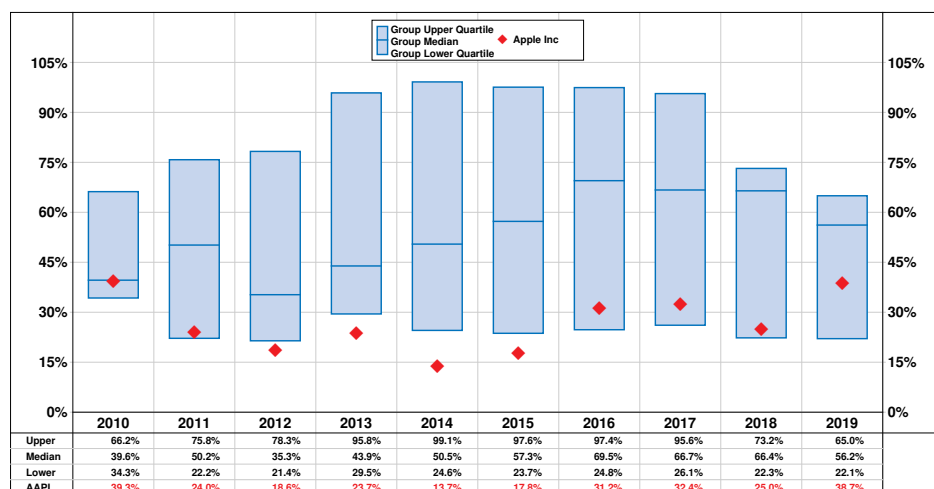
In 2019, Apple generated a very significant increase in cash of +\$34,279 million (+52%). Sources of cash were much larger than uses. Cash generated from 2019 EBITDA totalled +\$76,477 million. Non-operating sources contributed +\$5,383 million (+7% of EBITDA). Cash taxes consumed -\$4,707 million (-6% of EBITDA). Withdrawal of investment from the business totalled +\$39,053 million (+51% of EBITDA). On a net basis, debt investors pulled out -\$10,012 million (-13% of EBITDA) while equity investors withdrew -\$71,915 million (-94% of EBITDA).



Cash Flow Distribution traces the impact of operating cash flow (EBITDA) and five key components on Apple's cash balance. Non-Operating Cash includes minority interests, unconsolidated subsidiary earnings, other income and non-recurring income before tax. Cash Taxes are actual cash tax payments. Business includes all investments in net assets. Debt and Equity Investors include all cash distributions to lenders, preferred and common stock holders. Increase In Cash is net change in the cash balance between periods. Cash Sources in blue; Uses in white.

BENCHMARKS

Apple's Cash, %Revenue has exhibited a volatile overall uptrend over the period. This improvement was accompanied by a similar trend for the Apple Inc Peer Group. In most years, Apple was in the third quartile and lower quartile. Currently, Apple is below median at +39%.



Cash as a percent of revenue is the ratio of cash and equivalents to net revenue. On an annual basis, historical and forecasted cash as a percent of revenue for Apple Inc Peer Group is percentiled. High end of bar represents group upper quartile value. Lower end represents lower quartile value. Middle line represents group median. Apple forecasts are represented by red diamonds.

Growth Rates

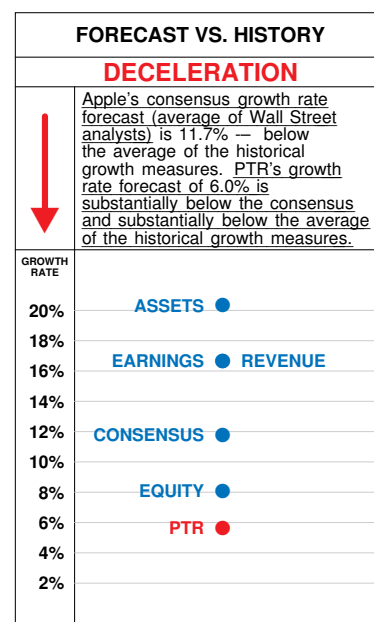
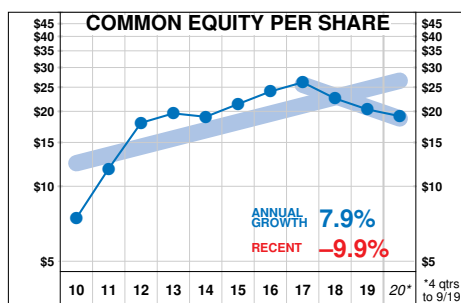
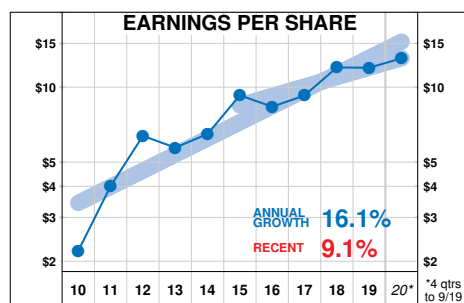
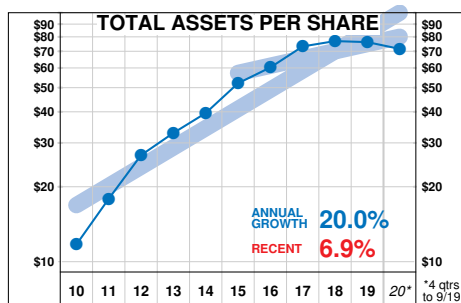
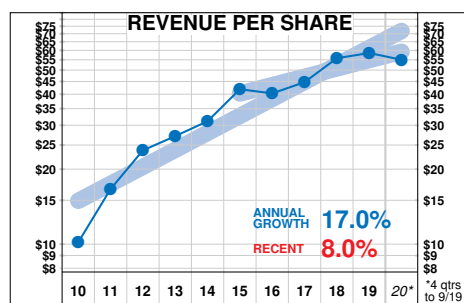
HISTORICAL GROWTH AND CONSENSUS FORECAST

Overall, Apple's growth rate has slowed very considerably in recent years.

Apple's historical income statement growth and balance sheet growth have diverged. Revenue growth has paralleled asset growth; earnings growth has exceeded equity growth.

Annual revenue growth has been 17.0% per year. (More recently it has been 8.0%.) Total asset growth has been 20.0% per year. (More recently it has been 6.9%.) Annual E.P.S. growth has been 16.1% per year. (More recently it has been 9.1%.) Equity growth has been 7.9% per year. (More recently it has been -9.9%.)

Apple's consensus growth rate forecast (average of Wall Street analysts) is 11.7% — below the average of the historical growth measures.



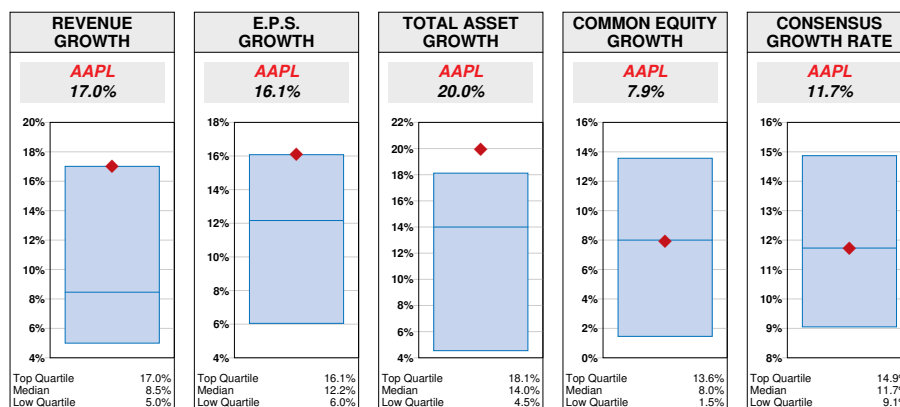
Selected historical data property of Standard and Poor's

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Longer term growth rates in revenue, net income, total assets, and common equity are derived from a least-squares statistical analysis of Apple's historical performance and are on a per share basis. (Where indicated, a significantly different shorter term trend is also presented.) Note that the consensus growth rate forecast is the average of available Street forecasts.

BENCHMARKS

Relative to the Apple Inc Peer Group, Apple's historical growth measures are generally top quartile. Total asset growth (20.0%) has been upper quartile. Revenue growth (17.0%) has been at the upper quartile. E.P.S. growth (16.1%) has been at the upper quartile. Equity growth (7.9%) has been at median. Consistent with this pattern, consensus growth forecast (11.7%) is also at median.



Growth rates for companies in Apple Inc Peer Group are percentiled and compared to AAPL values. High end of bar represents Apple Inc Peer Group upper quartile value. Lower end represents lower quartile value. Middle line represents group median. AAPL value is represented by diamond.

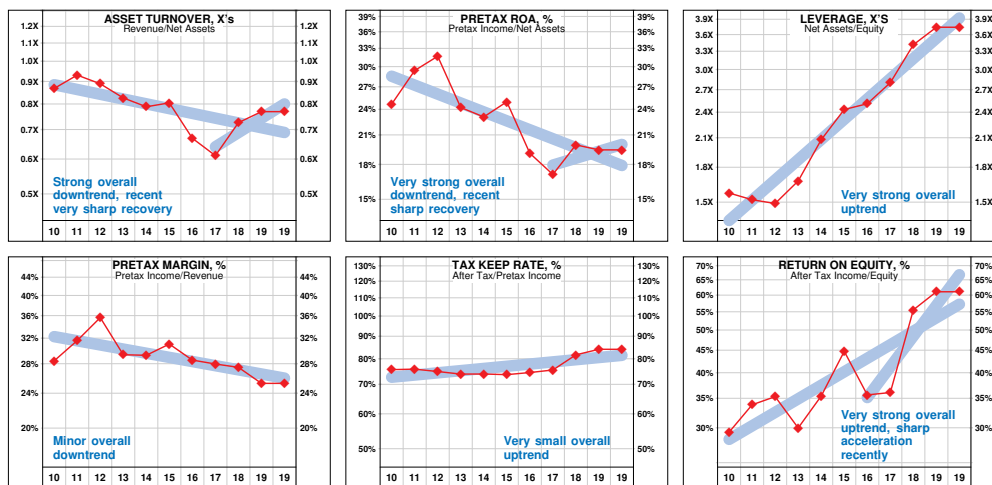
Profitability Measures

HISTORICAL PROFITABILITY

Apple's return on equity reached a new post-2010 high in 2019. A major analytical focus for AAPL is a very strong negative trend in pretax operating return a significantly offset by very strong positive trend in non-operating factors.

The productivity of Apple's assets declined over the full period 2010-2019: asset turnover has suffered a strong overall downtrend even as it experienced a very sharp recovery after the 2017 low.

Non-operating factors (income taxes and financial leverage) had a very significant positive influence on return on equity.



Selected historical data property of Standard and Poor's
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Asset turnover: the revenue "productivity" of a firm's assets. **Pretax profit margin:** the profitability of each \$ of sales. **Pretax return on assets:** profitability before differences in tax liability. **Tax "keep" rate:** the percentage of pretax income retained after taxes. **Leverage (asset equity ratio):** in asset terms rather than the traditional financing focus. **Return on equity:** ratio of net income to common equity.

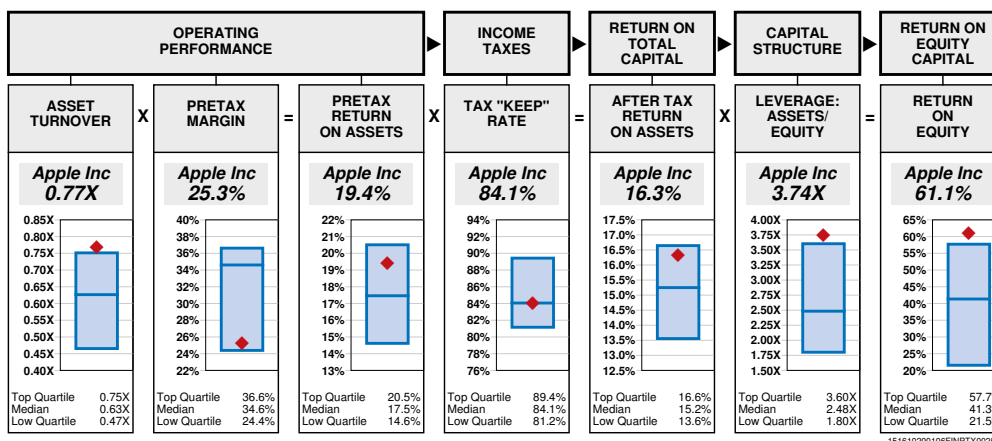
BENCHMARKS

Apple's return on equity is upper quartile (61.1%) for the four quarters ended September, 2019.

Operating performance (pretax return on assets) is above median (19.4%) reflecting asset turnover that is upper quartile (0.77X) and substantially below median pretax margin (25.3%).

Tax "keep" rate (income tax management) is at median (84.1%) resulting in after tax return on assets that is at the upper quartile.

Financial leverage (leverage) is upper quartile (3.74X).

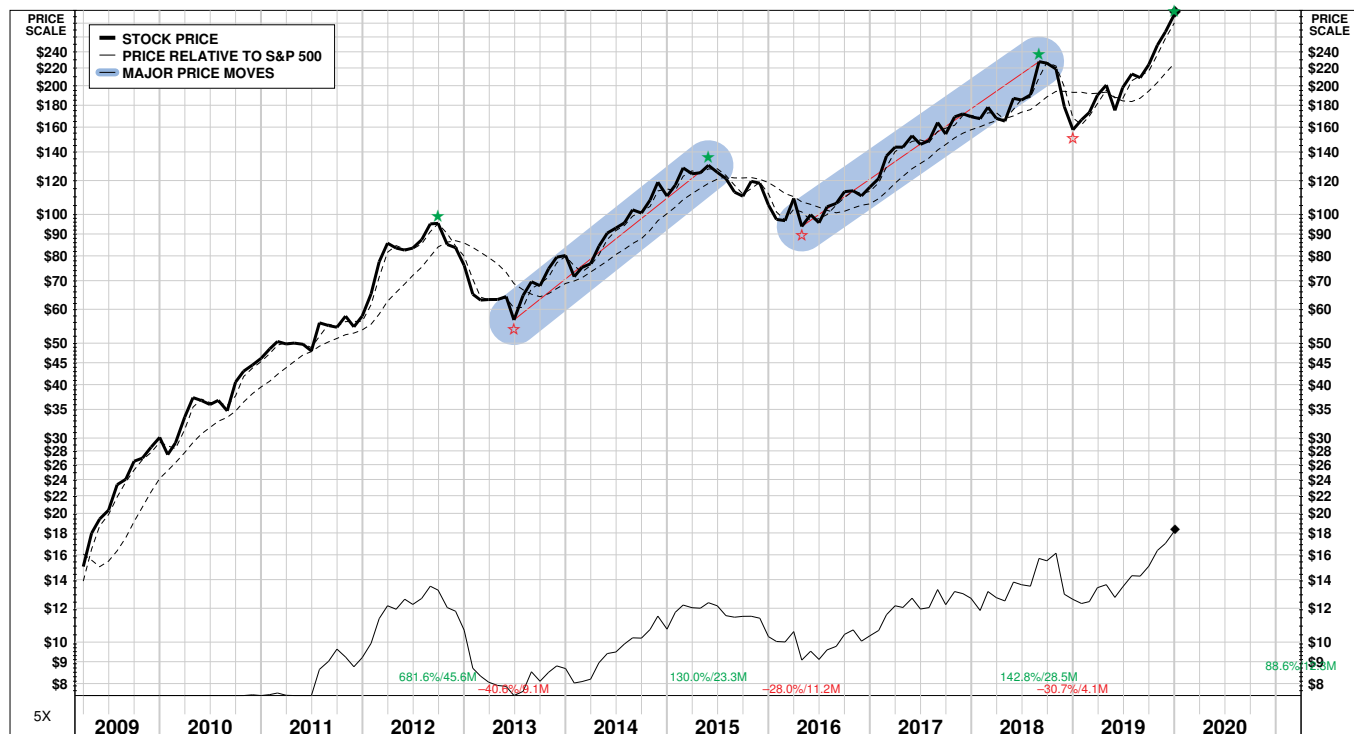


Individual operations variables for Apple Inc Peer Group are percentiled and compared to AAPL values. High end of bar represents Apple Inc Peer Group upper quartile value. Lower end represents lower quartile value. Middle line represents group median. AAPL value is represented by diamond.

Price History and Investment Returns

PRICE HISTORY

Over the full time period, Apple's stock price performance has been exceptional. Between March, 2009 and January, 2020, Apple's stock price rose +1881%; relative to the market, this was a +389% gain. Significant price moves during the period: 1) April, 2016 – August, 2018: +143%; and 2) June, 2013 – May, 2015: +130%.

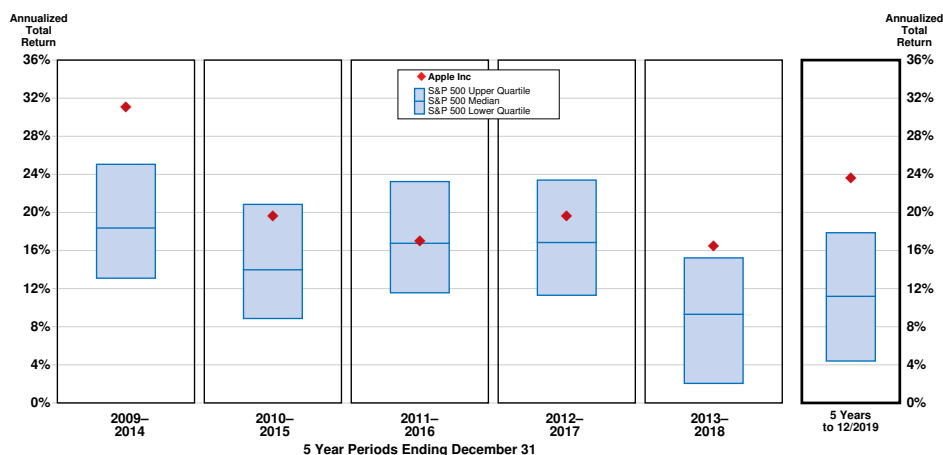


TOTAL RETURNS

Current annual total return performance of 89.0% is upper quartile relative to the S&P 500 Composite. In addition to being upper quartile relative to S&P 500 Composite, current annual total return performance through December, 2019 of 89.0% is upper quartile relative to Apple Inc Peer Group.

Current 5-year total return performance of 23.7% is upper quartile relative to the S&P 500 Composite.

Through December, 2019, with upper quartile current 5-year total return of 23.7% relative to S&P 500 Composite, Apple's total return performance is above median relative to Apple Inc Peer Group.



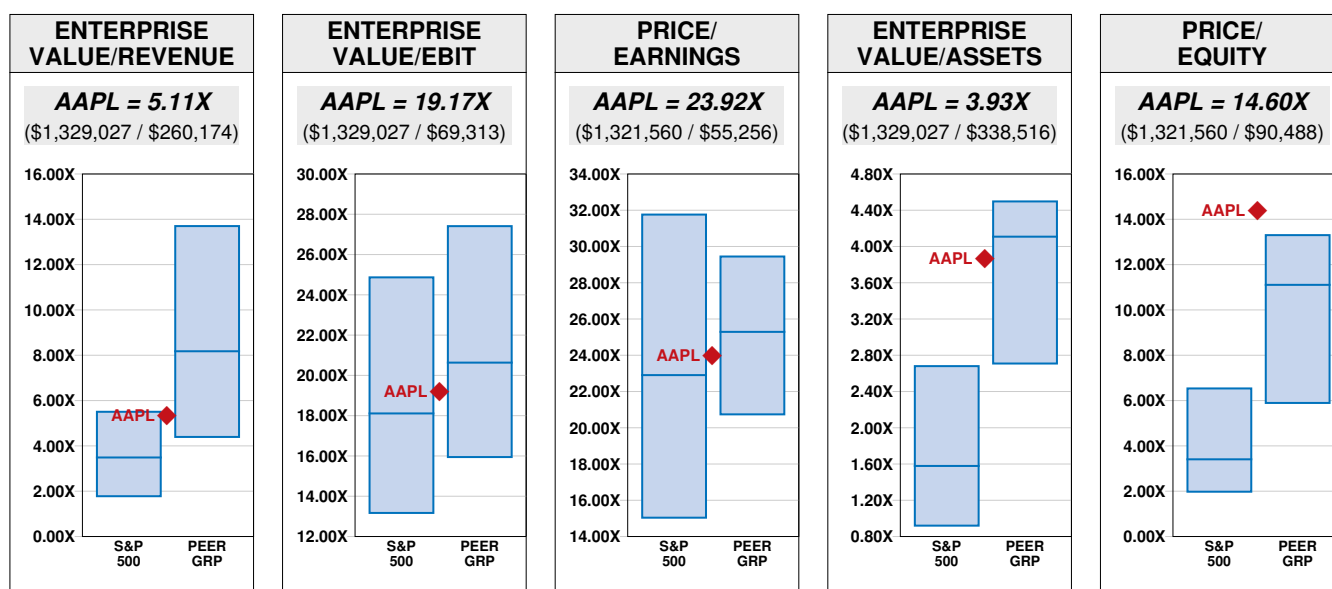
Total returns are annualized and include price appreciation and common dividends accumulated during each period. Apple returns represented by diamonds; S&P 500 Composite upper quartile by upper end of bar; lower quartile by lower end; median returns by the line.

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Valuation Benchmarks

Relative to S&P 500 Composite, AAPL's overall valuation is quite high. The highest factor, the price/equity ratio, is upper quartile. Ratio of enterprise value/assets is upper quartile. Ratio of enterprise value/revenue is near the upper quartile. Ratio of enterprise value/earnings before interest and taxes is slightly above median. The lowest factor, the price/earnings ratio, is slightly above median.

Relative to Apple Inc Peer Group, AAPL's overall valuation is normal. The highest factor, the price/equity ratio, is upper quartile. Ratio of enterprise value/assets is slightly below median. Price/earnings ratio is below median. Ratio of enterprise value/earnings before interest and taxes is below median. The lowest factor, the ratio of enterprise value/revenue, is near the lower quartile.



Individual valuation measures for each group are percentiled and compared to Apple values. High end of bar represents group upper quartile value. Lower end represents lower quartile value. Middle line represents group median. Apple value is represented by diamond.

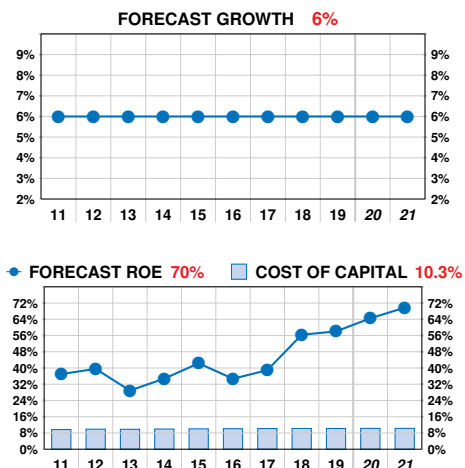
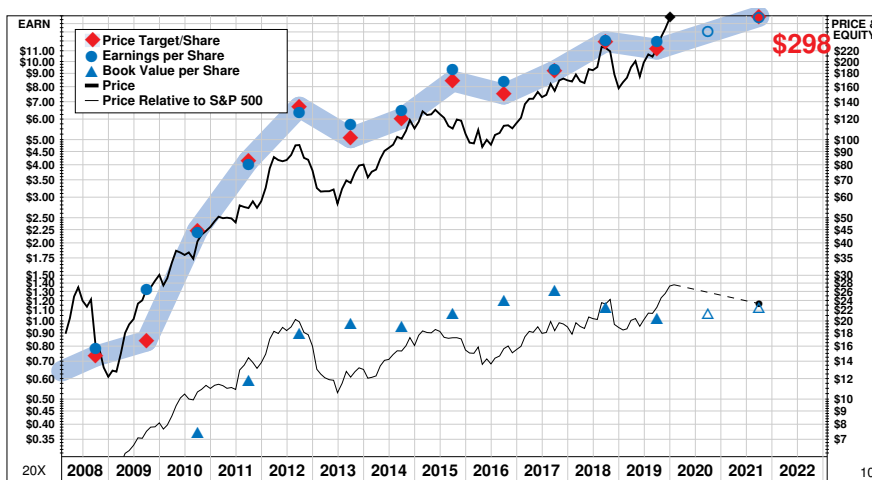
Apple has a major value gap compared to the median valuation. For AAPL to rise to median valuation, its current ratio of enterprise value/revenue would have to rise from the current level of 5.11X to 8.18X. If AAPL's ratio of enterprise value/revenue were to rise to 8.18X, its stock price would be lower by \$180 to \$477.

For AAPL to hit lower quartile valuation relative to the Apple Inc Peer Group, its current ratio of enterprise value/revenue would have to fall from the current level of 5.11X to 4.39X. If AAPL's ratio of enterprise value/revenue were to fall to 4.39X, its stock price would decline by \$42 from the current level of \$297.

Value Targets

AAPL is expected to continue to be a major Value Builder reflecting capital returns that are forecasted to be above the cost of capital. Apple's current Price Target of \$298 is little changed from the current price of \$297.43. This neutral appreciation potential results in an appreciation score of 43 (57% of the universe has greater appreciation potential.) With this neutral Appreciation Score of 43, the high Power Rating of 92 results in an Value Trend Rating of B.

Apple's current Price Target is \$298 (+34% from the 2019 Target of \$223 and +0% from the 01/03/20 price of \$297.43). This dramatic rise in the Target is the result of a +10% increase in the equity base and a +21% increase in the price/equity multiple. One Driver has a positive impact on the price/equity multiple, one has a negative impact, and one has no effect. The forecasted increase in return on equity has a very large positive impact on the price/equity multiple. The forecasted flat growth has no impact. The forecasted increase in cost of equity has a very slight negative impact.



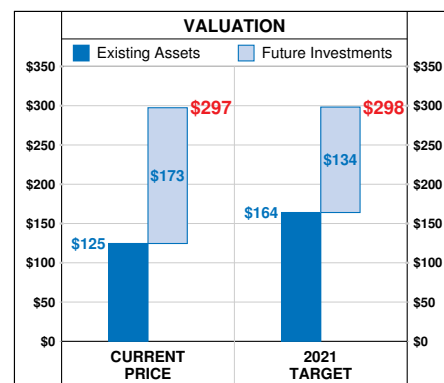
PTR's return on equity forecast is 69.7% -- substantially above our recent forecasts. Forecasted return on equity enjoyed a dramatic, erratic increase between 2011 and 2019. The current forecast is significantly above the 2013 low of 29%.

PTR's growth forecast is 6.0% -- in line with our recent forecasts. Forecasted growth erratic but little changed between 2011 and 2019. The current forecast is steady at the 2011 low of 6%.

PTR's cost of equity forecast is 10.3% -- in line with recent levels. Forecasted cost of equity exhibited a slight, steady increase between 2011 and 2019. The current forecast is steady at the 2011 low of 9.7%.

At Apple's current price of \$297.43, investors are placing a positive value of \$173 on its future investments. This view is consistent with the company's most recent performance that reflected a growth rate of 6.0% per year, and a return on equity of 58.0% versus a cost of equity of 10.2%.

PTR's 2021 Price Target of \$298 is based on these forecasts and reflects an estimated value of existing assets of \$164 and a value of future investments of \$134.



Rating Methodology

PriceTarget Research's **Value Trend Ratings** — quantitative ratings of relative attraction — for 8,000 stocks are updated weekly. These Value Trend Ratings combine a stock's current appreciation potential as reflected in its **Appreciation Score** and current market dynamics as measured by its **Power Rating**.

Our rating methodology recognizes two realities. First, as fundamentally based and meaningful as the Price Target and resulting Appreciation Score are, the underlying forecasts can be "off the mark" in some cases. Second, as important as technical measures and the Power Rating can be for a company, they can sometimes carry too far, "overshooting" warranted value, and resulting in an unusually speculative investment.

By combining deep fundamentals and market factors, the Appreciation Score acts as a "governor" on the Power Rating during periods of high investor enthusiasm and the Power Rating can signal caution when market attitudes are out of line with forecasts and the Appreciation Score.

In cases where the Power Rating and Appreciation Score don't agree (Cells 2 and 4), the forecasts that support the Price Target and Appreciation Score need to be reviewed for reasonableness:

- Cell 2 stocks may well have forecasts that are too optimistic.
- Forecasts for Cell 4 stocks may be too pessimistic.

		Power Rating	
		Low	High
Appreciation Score	High	2 Forecasts too High?	1 Confirm Attractive
	Low	3 Confirm Unattractive	4 Forecasts too Low?

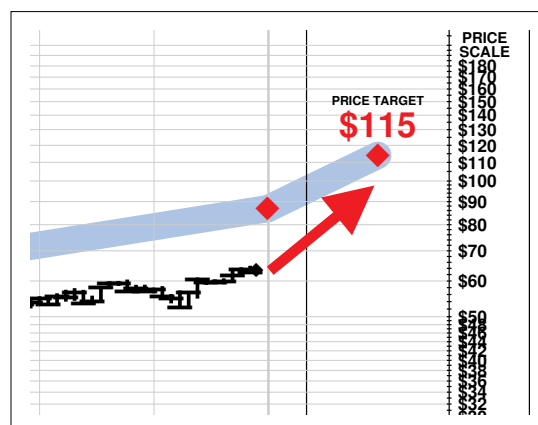
The Value Trend Rating separates stocks selling below warranted value into those with the potential to get "less cheap" sooner (Cell 1) versus those with little likelihood of a significant price move over the near to intermediate term (Cell 2). PTR's proprietary research clearly demonstrates that when a stock's high Appreciation Score is corroborated by a high Power Rating (a Cell 1 company), investment results are superior to results from companies where only the Appreciation Score or Power Rating is high (Cells 2 and 4). Integration of a disciplined stock valuation framework and consideration of current market dynamics yields important performance benefits.

Value Trend Rating. PTR's Value Trend Rating is a letter grade derived from the combination of the Appreciation Score and Power Rating. Stocks rated as A (Highest Rating) and B (Positive Rating) — 15% of the universe in each case — generally have high Appreciation Scores and high Power Ratings and are expected to outperform the general market over the following 12–24 months. Those rated F (Lowest Rating) and D (Negative Rating) (15% each) are expected to under perform the general market and generally have lower Appreciation Scores and Power Ratings. Stocks rated C (Neutral Rating and 40% of the universe) are anticipated to perform in line with the general market.

Rating	% of Univ	Anticipated Future Performance
A (Highest Rating)	15%	Strongly Outperform
B (Positive)	15%	Outperform
C (Neutral)	40%	Neutral
D (Negative)	15%	Underperform
F (Lowest Rating)	15%	Strongly Underperform

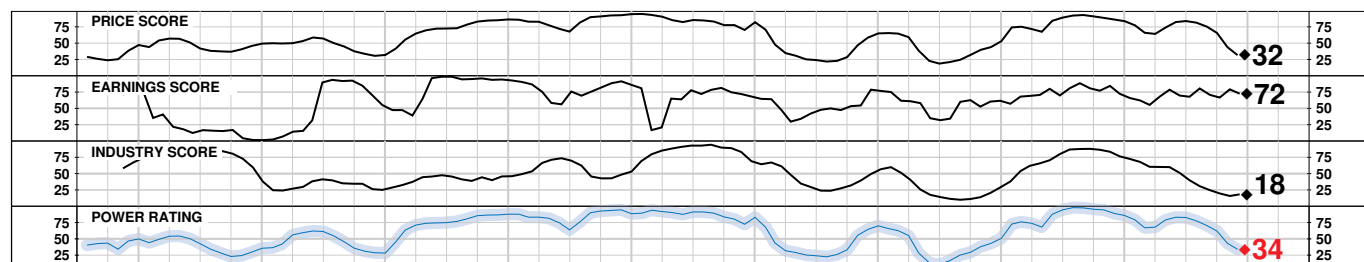
Appreciation Score. The Appreciation Score represents the degree to which a stock is attractively priced relative to the universe. Each company's warranted market value — or Price Target — is derived from PTR forecasts of return on equity, long term growth, and cost of capital. The percentage change from the stock's current price to the Price Target is calculated and percentiled relative to the universe (0=the lowest appreciation potential; 100=highest). In the example:

- Price Target is \$115
- Current Price is \$63.50
- Appreciation Potential = $\$115 / \$63.50 = +81.1\%$
- Resulting Appreciation Score = 84 (%ile rank when compared to the universe)



Rating Methodology (Continued)

Power Rating. The Power Rating measures the "timeliness" of a stock for purchase. Because the Price Target, appreciation potential, and Appreciation Score are forecasts, other information is used to serve either as confirmation of the Price Target or to highlight cases in which the forecasts are not credible. (It includes the stock's price performance, behavior of other companies in the same industry group, and the trend in earnings' expectations. Percentiled relative to a universe of 8,000 companies. 0=the lowest power rating; 100=highest.) In the case below the weak Price and Industry Scores offset the higher Earnings' Score resulting in a mediocre Power Rating of 34.



Rating Results. In addition to the regular publication of its stock ratings, PriceTarget Research constantly assesses how well the Value Trend Ratings perform over prior periods. Performance for each rating category and the overall universe is measured over longer historical periods as well as for shorter intermediate periods with the focus on three key aspects of performance. The first is how well the ratings **discriminate** between outperforming and underperforming stocks -- i.e., whether high rated stocks outperform the universe and low rated stocks underperform. The second consideration is how **well-ordered** this performance data is. Well-ordered performance occurs when A-rated stocks outperform B-rated stocks that, in turn, outperform C-rated stocks, and so on. Clearly, the most desirable outcome is for performance data to be well-ordered over the full period as well as for each individual year. Finally, **persistence** of ratings is measured. At each month end over the full historical periods, each stock's rating is recorded and the number of subsequent months in which this initial rating was maintained calculated. From this information, the likelihood that a specific rating (A, B, C, D, or F) is sustained over future periods is derived.

While past performance is no guarantee of future results, the evidence continues to indicate that PTR's Overall Rating discriminates well between stocks that outperformed and stocks that underperformed over historical time periods. Moreover, this performance was well-ordered and consistently superior from period to period: in most years, A-rated stocks outperformed Cs and C-rated stocks outperformed Fs. Finally, the Value Trend Rating provided an exploitable, persistent appraisal of relative attractiveness: the average duration of individual ratings exceeded 12 months. (For a PDF report on the Investment Performance of PriceTarget Research's Stock Ratings, please see: <http://pricetargetresearch.com/backtest.jsp>.)

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