S&P
CAPITAL IQ

QUANTITATIVE RESEARCH
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Case Study:
S&P Capital IQ - The Platform for Investment Decisions

Ten years ago, Apple (NASDAQ: AAPL) traded just below $12 and closed at $583.98 on April 30, 2012. That is an average annual return of 48.1% over the period. During this same time the S&P 500 grew at an annual rate of only 2.65%. On April 2nd, Topeka Capital Markets initiated coverage of AAPL with a price target of $1001. If achieved, this would make AAPL the first company to ever reach a $1 trillion market cap. In this case study, we highlight some key S&P Capital IQ functionality in analyzing AAPL hypothetically reaching $1000:

- Earnings & Revenues Analysis
- Institutional Ownership Analysis
- S&P Capital IQ Intelligent Estimates Model
- S&P Capital IQ Securities Lending Market Model
- S&P Capital IQ Alpha Models
- Growth Duration Model Analysis
- Historical Total Returns Analysis
- Comparison to Large Companies in the Past Within The S&P500
- More Food for Thought: Supply Chain & Cash

Articles Sourced from S&P Capital IQ News, Events & Filings on the Platform

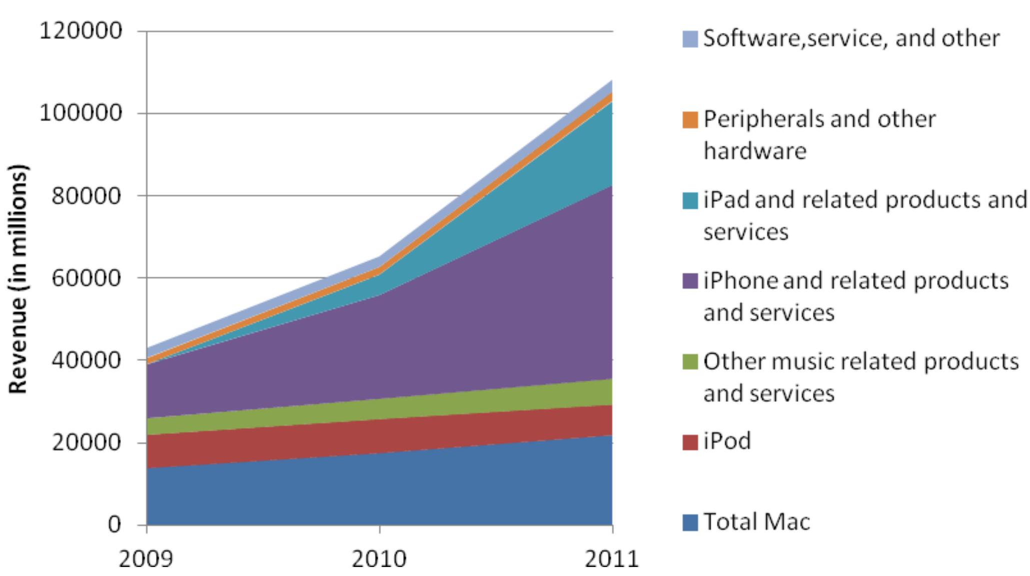
Earnings & Revenues Analysis – Can Apple growth justify $1000?

We can directly view AAPL's financial statements on Capital IQ's platform, download the information into Excel, or view AAPL's original financial statements through links. Examining AAPL's 10-K, we find that a few fast growing segments make up nearly 90% of AAPL's revenue. In fact, AAPL can be viewed as a catalyst of innovation in many of these segments, including Smartphones, Tablets, PCs, and MP3 players.

Even at its current trading price, AAPL's P/E ratio stands at 14, placing it in the lower 29th percentile of S&P 500 companies in terms of P/E, according to S&P Capital IQ's Alpha Factor Library. With constant earnings and a hypothetical share price of $1000, AAPL would have a P/E ratio of 28, which would move AAPL's P/E to the 80th percentile of the S&P 500.

AAPL's earnings are expected to grow in 2012. Over 60% of AAPL's revenue comes from markets (Smartphones and Tablets) that are projected to grow next year at an average rate of 44% by International Data Corp (IDC). If AAPL's revenue in these two segments grows in line with the projected rates, while revenue in its other, more mature market segments grows at its 2011 rate, then AAPL's revenues would grow by 34%, and its EPS would increase by 13.4% in 2012. At the hypothetical $1000 share price, this would lead to a P/E of 25, or the 75th percentile of S&P 500 companies. For AAPL to maintain its current P/E, its earnings would have to jump by 71.2% in 2012.

Figure 1: AAPL's Revenue by Market Segment



Institutional Ownership Analysis – Are there Marginal Buyers?

How can the S&P Capital IQ platform help us view what Smart Money thinks about potential investments and their growth prospects? We use S&P Capital IQ's Public Fund Profile view to find actively managed large cap growth funds' top holdings from several of the largest money managers. We are looking to see whether their portfolios were overweight on AAPL, underweight, or neutrally weighted when compared to their defined benchmark.

Table 1: Relative Weight of AAPL in Money Manager Growth Funds (funds are bench-marked to the Russell 3000 Growth Index and were identified from fund prospectus)

Name	Portfolio Date	Portfolio Weight (%)	Index Weight (%)	Rel Weight (%)
BlackRock Capital Appreciation	12/31/2011	7.43	5.82	1.61
Vanguard Growth Equity Fund	12/31/2011	6.1	5.82	0.28
Vanguard U.S. Growth Fund Investor Shares	12/31/2011	7.5	5.82	1.68
Northern Funds Large Cap Growth Fund	12/31/2011	7.3	5.82	1.48
JNL/Invesco Large Cap Growth B	12/31/2011	8.72	5.82	2.90
JP Morgan Large Cap Growth Fund	2/29/2012	7.7	7.04	0.66
The Hartford Growth Fund (sub-advised by Wellington)	2/29/2012	8.57	7.04	1.53
SC WMC Large Cap Growth Fund (sub-advised by Wellington)	2/29/2012	7.7	7.04	0.66
UBS US Growth Fund B Acc	2/29/2012	7.98	7.04	0.94
Allianz RCM Large-Cap Growth Fund A	2/29/2012	9.01	7.04	1.97
Wells Fargo Advantage Large Cap Growth Fund	3/31/2012	7.35	7.55	-0.20

Many money managers are overweight AAPL, six of them greater than 1%, though there is not complete consensus among all fund managers.

Intelligent Estimate Model (IE)

S&P Capital's Intelligent Estimates looks at various attributes of accurate forecasts (Age of Estimate, Broker Size, Forecast Horizon, and Tenure) to forecast the error in analysts' earnings forecasts. The analyst forecasts are weighted accordingly to arrive at an Intelligent Estimates forecast.

The Intelligent Estimates model predicts an EPS of 46.87 in 2012 for AAPL, similar to the consensus EPS estimates of 46.96. Based on a constant P/E of 14, both these estimates imply a share price of $667. AAPL's 2012 EPS needs come in at 70.24 for the company to hit the hypothetical $1000 price target (assuming P/E remains constant at 14).

Securities Lending Market (SLM) Model

S&P Capital IQ has developed a Securities Lending Market (SLM) Model using daily securities lending data from our partner, Data Explorers. The security lending data provides detailed daily information on short selling activities. Looking to the securities lending market may provide us with some additional insight as to investor sentiment about a given company. The SLM helps both long-short and long-only investors to improve their alpha strategies by identifying securities with high negative sentiment. Companies that our model views as having significant short side potential are placed into quintiles 4 or 5 of our SLM Model.

AAPL has not been ranked a 4 or 5 in the entire history (going back to 2006), while it has been ranked in the top 2 quintiles (implying minimal negative investor sentiment) over 75% of time during this period. Based on market sentiment, the SLM Model does not support a near-term reversal in AAPL's price.

S&P Capital IQ Alpha Models

S&P Capital IQ has four US stock selection models, Growth Benchmark, Value Benchmark, Quality, and Price Momentum.

The US Growth Benchmark Model is comprised of seven components that each look at a different aspect of stock selection. These are earnings momentum, liquidity, quality, growth, value, capital efficiency, and price momentum. AAPL scores well in almost all of these component categories. This leads to AAPL being scored in the very top percentile of our growth model.

Table 2: US Growth Model Component Scores for AAPL, 4/30/2012

Model Component Scores	
Type	Score
Earnings Momentum	4
Liquidity/Visibility	59
Quality	2
Growth	1
Value	11
Capital Efficiency	3
Price Momentum	1

Similarly, AAPL scored well in each of our other models, the 10th percentile for the US Momentum Model, the 14th percentile for the US Value Model, and 12th percentile for the US Quality Model.

Given that AAPL ranked in the top decile in terms of the "growth" composite across all our stock selection models, we decided to confirm how AAPL ranks based on several of the growth indicators we have in our Alpha Factor Library. AAPL ranks in the top decile across a number of our growth factors. Growth in cash flow and earnings appear to be the main drivers of AAPL's attractiveness within the growth composites used in the S&P Capital IQ stock selection models.

Table 3: Growth Factor Scores for AAPL in S&P 500, 4/30/2012

Factor Name	Factor Score (%)
1 Year Change in Asset Adjusted Cash Flow	1
1 Year Change in Asset Adjusted EPS	1
1 Year Change in Asset Adjusted Free Cash Flow	1
1 Year Change in Asset Adjusted Operating Cash Flow	1
1 Year Change in Cash Flow per Share	3
1 Year Change in EPS	7
1 Year Change in Operating Cash Flow per Share	5
1 Year Change in Operating Margin	8
3 Year Change in Asset Adjusted Cash Flow	2
3 Year Change in Asset Adjusted EPS	3
3 Year Change in Asset Adjusted Free Cash Flow	1
3 Year Change in Asset Adjusted Operating Cash Flow	1
3 Year Change in Cash Flow per Share	2
3 Year Change in EPS	2
3 Year Change in Free Cash Flow per Share	7
3 Year Change in Operating Cash Flow per Share	2
3 Year Earnings Growth	10
3 Year Sales Growth	1
5 Year Expected Earnings Growth	10
EPS Stability	7

Growth Duration Model Analysis

The Growth Duration Model relates the P/E ratio (PE), growth rate (G), and dividend yield (D) of a rapidly growing company to the expected duration of that growth (T). Investors can find all the necessary information to perform this analysis on S&P Capital IQ. We start with a 28 P/E (hypothetical $1000 price and constant earnings), 20% expected growth rate (the consensus long term growth estimate from S&P Capital IQ Estimates), and an expected dividend rate (D) of 1.7% for AAPL. We assumed the following numbers for the S&P 500, P/E of 15.7, expected growth rate of 6%, and dividend yield of 1.96%, and plugged them into the Growth Duration Model equation below.

$$T = \frac{Log(PE_{AAPL}/PE_{SP500})}{Log[(1 + G_{AAPL} + D_{AAPL})/(1 + G_{SP500} + D_{SP500})]}$$

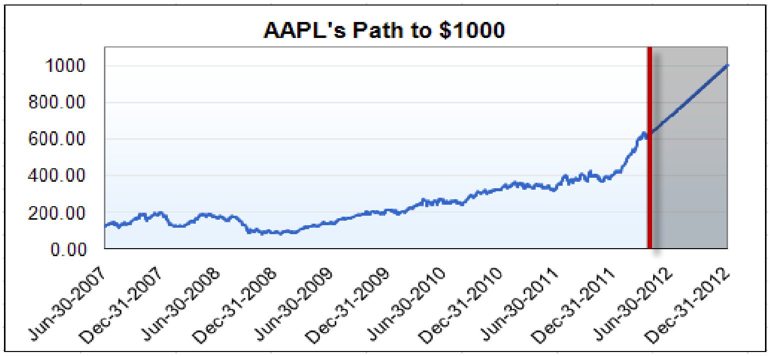
We find that time (T) equals 4.83 years. In other words, to achieve a share price of $1000, AAPL would have to maintain its current growth rate of 20% for the next 5 years and then grow at the market rate thereafter. We should note that this does assume risk neutrality.

Historical Total Returns Analysis – Is there Historical Precedent?

In order to reach the hypothetical $1000 price target, AAPL's price would have to rise by 147% in 2012.

Figure 2: Historical and Projected Share Price of AAPL, 6/30/2007-12/31/2012

Source Data: S&P Capital IQ Pricing



We searched for other instances of companies that had experienced these types of returns. In fact, this has occurred hundreds of times since 1964. During the tech bubble, AOL's best 12 month period was 760.8% return in the 12 months ending in March 1999. However, there are many times outside the tech bubble where companies achieved returns of this magnitude or higher, e.g. Tonka in 1985, Chrysler in 1992, and Chipotle in 2010.

But what about longer-term 4 year performance? From AAPL's most recent low in Dec 2008 to the hypothetical $1000 target in Dec 2012, AAPL would have achieved a 1066% 4 year return. Has this ever happened before in the S&P 500? In fact, twenty-five different companies have done the same since 1964.

Table 4: S&P 500 Constituents and their best 4 years ever

Rank	Company's Best 48 month total return	Period End Date	Company Name
1	3972%	Aug-2000	EMC CORP/MA
2	3791%	Mar-2007	ALLEGHENY TECHNOLOGIES INC
3	1997%	Jul-1995	DSC COMMUNICATIONS CORP
4	1767%	Aug-2000	SUN MICROSYSTEMS INC
5	1753%	Dec-2007	APPLE INC
6	1716%	Dec-1980	GLOBALSANTAFE CORP
7	1611%	Oct-1994	ORACLE CORP
8	1432%	Sep-1978	METROMEDIA INC
9	1425%	Sep-2006	CORNING INC
10	1368%	Mar-1986	CHRYSLER CORP
11	1326%	Sep-1978	MGM GRAND HOTELS INC
12	1269%	Feb-2000	TEXAS INSTRUMENTS INC
13	1265%	Nov-1970	FEDDERS CORP
14	1249%	Oct-2006	WILLIAMS COS INC
15	1236%	Aug-2000	NORTEL NETWORKS CORP
16	1226%	Aug-1978	COLUMBIA PICTURES INDS
17	1201%	Oct-1998	US AIRWAYS GROUP INC-OLD
18	1173%	May-1996	ANDREW CORP
19	1165%	Aug-1978	HILTON HOTELS CORP
20	1151%	May-1983	RADIOSHACK CORP
21	1146%	Aug-1986	TONKA CORP
22	1142%	Oct-2006	AES CORP
23	1120%	Apr-1999	TJX COMPANIES INC
24	1078%	Jan-1999	MICROSOFT CORP
25	1066%	Aug-2000	SCIENTIFIC-ATLANTA INC

Returns of the magnitude AAPL would need to achieve are possible (albeit rare). Interestingly, AAPL has accomplished both of these feats previously. AAPL achieved a yearly return of 312% in the 12 months ending in May 1983 and 1753% in the 4 years ending Dec 2007.

Comparison to Large Companies in the Past

S&P Capital IQ users can view current index constituents and their index weights for many indices. In January 2012, AAPL's weight in the S&P 500 passed 4%. What happened subsequently when companies reached this level in the past? Using ClariFI, we identified every occasion a company's market cap crossed 4% of the market cap of the S&P 500 since 1980. This occurred four times, Microsoft in Jan 1999, General Electric in Dec 1999, Cisco in Mar 2000, and Exxon Mobil in Feb 2008. Utilizing the Chart Builder on S&P Capital IQ, it is easy to view 12 month returns, realized, index, and benchmarked (summarized below), following the dates these companies passed 4% in the S&P 500.

Table 5: Past Companies to Achieve 4% Market Cap in the S&P 500

	% of S&P 500 at start date	Time Period	12 Month Return of Stock	12 Month Return of SP500	Relative Stock Return
EXXON MOBIL CORP	4.08%	2/29/2008-2/28/2009	-21.96%	-44.76%	22.79%
GENERAL ELECTRIC CO	4.12%	12/31/1999-12/31/2000	-6.97%	-10.14%	3.16%
MICROSOFT CORP	4.18%	1/31/1999-1/31/2000	12.29%	6.29%	5.99%
CISCO SYSTEMS INC	4.17%	3/31/2000-3/31/2001	-79.55%	-22.57%	-56.98%

In three of the four occurrences the company had a negative return over the following 12 months. However, only CISCO had a negative return relative to the S&P 500, so size has historically not been a deterrent to a firm outperforming its peers. Market direction in 2012 will most likely have an influence on the ability of AAPL's price to top the hypothetical $1000 target.

More Food for Thought

Supply Chain

The S&P Capital IQ news page makes it easy to view relationships between companies, such as customers, suppliers, and strategic alliances. Using this resource, we found several news stories published recently concerning the conditions of production facilities abroad for companies that are AAPL suppliers. Foxconn, an AAPL supplier, has played a starring role in many of these stories. Given the increased scrutiny, the question becomes how much would a restructuring of suppliers' employee payment and work hours affect AAPL's profitability? Using the Corporate Tree and S&P Capital IQ Business Relationships information on the platform, we bridge the gap from Foxconn to Hon Hai (parent company) to AAPL (customer). We find that labor is only 4% of Hon Hai's cost of goods sold. Given this, it seems unlikely that any labor restructuring of Foxconn will have a significant effect on AAPL's costs.

Cash

An analysis of AAPL's balance sheet shows the firm has substantial cash reserves. Given this substantial cash level, AAPL decided to issue a dividend to shareholders, as well as initiate a $10 billion share buyback program starting in October. AAPL can use this cash for strategic acquisitions (such as the acquisition of Siri Inc in 2010), and it also provides the company with the resources to contest antitrust and patent infringement issues. However, protracted legal battles, with the government and competitors might be a distraction to AAPL's management and also negatively impact investor enthusiasm for the stock.

Summary

Using analytics driven by S&P Capital IQ, we examined AAPL from a number of different angles: Earnings & Revenues, Institutional Ownership, Intelligent Estimates, Securities Lending, Alpha Factors/Models, Growth Duration, Historical Returns, etc. Fund managers and financial analysts expect AAPL's growth to continue. According to S&P Capital IQ Detailed Estimates, 47 out of 54 analysts have issued Buy or Outperform recommendations on AAPL. Each of our models also scores AAPL well. Will AAPL reach $1000 this year? We can't say for certain, but S&P Capital IQ provides the tools for you to perform the necessary analysis. Only time will tell if AAPL should be a $1 trillion company.

Appendix A – AAPL's Market Segments

Smartphones

- iPhone has 6.60% market share in mobile phones (Trefis)
- iPhone sales comprise 43.47% of Apple's revenue (Apple 10k)
- Apple has a 53% profit margin on iPhones (Trefis)
- Smartphone market is projected to grow roughly 34% in 2012 (IDC)

Tablets

- iPad has a 54.1% market share (IDC)
- iPad sales comprise 18.81% of Apple's revenue (Apple 10K)
- Apple has a 30.1% profit margin on iPads (Trefis)
- Tablet market is projected to grow 54% (IDC)

Portable Computers

- Mac Notebook has 6.74% market share (Trefis)
- Mac Notebook sales comprise 14.17% of Apple's revenue (Apple 10k)
- Apple has a 30.2% profit margin on Mac Notebooks (Trefis)
- Portable Computer market projected to grow at 8.10% in 2012 (IDC)

Desktop Computers

- Mac Desktop has 3.57% market share (Trefis)
- Mac Desktop sales comprise 5.95% of Apple's revenue (Apple 10k)
- Apple has a 24.6% profit margin on Mac Desktops (Trefis)
- Desktop Computer market projected to grow at 0.4% in 2012 (IDC)

MP3 Players

- iPod has 22.9% market share (Trefis)
- iPod sales comprise 6.89% of Apple's revenue (Apple 10k)
- Apple has a 25.8% profit margin on iPods (Trefis)

Our Recent Research

March 2012: Exploring Alpha from the Securities Lending Market – New Alpha Stemming from Improved Data
Numerous studies have examined the information content of short interest and found that heavily shorted stocks tend to underperform and liquid stocks with low levels of short interest subsequently outperform. Most studies relied on short interest data obtained directly from the exchanges available with a significant delay.

January 2012: S&P Capital IQ Stock Selection Model Review – Understanding the Drivers of Performance in 2011
In this report, we review the performance of S&P Capital IQ's four U.S stock selection models in 2011. These models were launched in January 2011, and this analysis will assess the underlying drivers of each model's performance over the last 12 months.

January 2012: Intelligent Estimates – A Superior Model of Earnings Surprise
As residual stakeholders, equity investors place enormous importance on a company's earnings. Analysts regularly forecast companies' future earnings. The prospects for a company's future earnings then become the basis for the price an investor will pay for a company's shares. Market participants follow sell side analysts' forecasts closely, identifying those analysts that demonstrate forecasting prowess and track those analysts' forecasts going forward.

December 2011: Factor Insight – Residual Reversal
Many investors employ price reversal strategies (strategies that buy "losers" and sell "winners" based on short-term price changes) in their stock selection decisions. One popular reversal strategy is constructed as the change in 1-month stock price over the most recent month. This report compares the performance of this factor to a "residual reversal" signal proposed by Blitz, Huij, Lansdorp and Verbeek in their 2011 paper, "Short-Term Residual Reversal".

November 2011: Research Brief: Return Correlation and Dispersion – All or Nothing

October 2011: The Banking Industry
Investors can improve model and portfolio risk adjusted returns using various approaches, including incorporating new alpha signals in an existing investment process. In this research piece, we build on our earlier work (See "Is your Bank Under Stress? Introducing our Dynamic Bank Model", November 2010), to determine if bank specific data provided by financial institutions regulatory bodies (FFIEC standardized data), can yield alpha signals orthogonal to those found in most stock selection models.

September 2011: Methods in Dynamic Weighting
In this report, we introduce a powerful discovery tool in Alphaworks and provide a pragmatic survey covering the identification and potential dynamic techniques to handle financial regimes and security level context. With increasingly volatile factor performance, the ability to implement adaptive strategies is paramount in maximizing factor efficacy.

September 2011: Research Brief: Return Correlation and Dispersion - Tough Times for Active Managers

July 2011: Research Briefs- A Topical Digest of Investment Strategy Insights
Investors must sort through a constant stream of information in order to identify opportunities, structural changes, and market risks. Wading through information quickly and efficiently is critical as investors must understand how their strategy and exposures are impacted. Typical classes of questions include: What strategy should I use in response to a regime shift? How do I invest in a specific industry? Do other markets behave differently than the US market? In this report we highlight several classes of questions that investors are routinely interested in and share our thoughts on these topics.

June 2011: A Retail Industry Strategy: Does Industry Specific Data tell a different story?
Investors are on a constant quest for new investment insights. A more complete understanding of the dynamics that shape an industry is integral to this search. As S&P Capital IQ's quantitative research begins a more thorough examination industry specific sources of alpha, we turn our attention first to the retail industry utilizing the Compustat database. Many of the strategies validate common investor best practice when looking at the retail space. In this paper we develop several new retail specific factors and use them to construct a 6-factor retail specific model.

May 2011: Introducing S&P Capital IQ's Global Fundamental Equity Risk Models

May 2011: Topical Papers That Caught Our Interest

April 2011: Can Dividend Policy Changes Yield Alpha?

April 2011: CQA Spring 2011 Conference Notes

March 2011: How Much Alpha is in Preliminary Data?

February 2011: Industry Insights – Biotechnology: FDA Approval Catalyst Strategy

January 2011: US Stock Selection Models Introduction

January 2011: Variations on Minimum Variance

January 2011: Interesting and Influential Papers We Read in 2010

November 2010: Is your Bank Under Stress? Introducing our Dynamic Bank Model

October 2010: Getting the Most from Point-in-Time Data

October 2010: Another Brick in the Wall: The Historic Failure of Price Momentum

July 2010: Introducing S&P Capital IQ's Fundamental US Equity Risk Model