Apple Inc AAPL [XNAS] | ★★★★

Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Stewardship	Morningstar Credit Rating	Industry
449.98 USD	600.00 USD	360.00 USD	930.00 USD	High	Narrow	Standard	AA-	Computer Systems

Apple's Plan to Return Cash to Shareholders a Plus, but Soft Forecast and Margins Still a Concern

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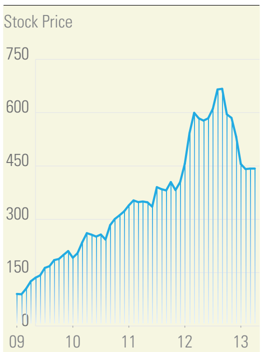
Senior Stock Analyst
Analyst covering this company do not own its stock.

Pricing as of May 03, 2013.
Rating as of May 03, 2013.

Currency amounts expressed with "$" are in U.S. dollars (USD) unless otherwise denoted.



Analyst Note Apr. 23, 2013

Apple's AAPL fiscal second-quarter results were in line with our expectations. We're modestly concerned about the company's third-quarter forecast until we gain further clarity on the timing of a new iPhone launch. Perhaps the biggest news, however, came from Apple's announcement of a 15% dividend increase, and an additional $50 billion stock buyback plan, as Apple distributes more of its vast cash cushion to investors. We're maintaining our $600 fair value estimate and narrow moat rating. The 37 million-unit iPhone shipments in the March quarter were slightly better than the 35 million units sold during the year-ago quarter, which coincided with the iPhone 4S launch. However, a 4% decline in iPhone average selling prices, or ASPs, points toward shifting consumer preferences toward older, cheaper models. At 19.5 million, iPad unit sales were strong. However, a mix shift toward lower-priced iPad Minis led to a 4% decline in iPad ASPs. Mac unit sales were down only 3% sequentially, as Apple caught up to unmet demand in the December quarter, helping to offset an otherwise dismal PC demand environment. Corporate gross margins of 37.5% were at the low end of the company's forecast, reflecting the less favorable product mix stemming from Apple's focus on emerging market growth. We're also encouraged by the apparent new boldness in Apple's capital allocation plans, and think that tapping the debt markets in a low interest rate environment to fund a portion of its stock buybacks and dividend increase is a wise move. We view Apple's June outlook of $34.5 billion in revenue and just over $7 in EPS as a dismal forecast. However, if an exciting iPhone 5S were to arrive this summer, as some of Apple's chip suppliers have hinted, we'd consider the weak guidance to be less of a concern. However, CEO Tim Cook's comment about "really great stuff coming in the fall" clearly tempers such enthusiasm, and the forecast implies that June iPhone unit sales may be worse than the year-ago quarter. While we still foresee long-term iPhone growth as Apple grows in China and garners repeat sales to iOS customers in the U.S. and elsewhere, near-term iPhone sluggishness may place greater importance on Apple's ability to deliver a follow-up iPhone hit later this year.

Thesis Apr. 12, 2013

We believe Apple's strength lies in its experience and expertise in integrating hardware, software, services, and third-party applications into differentiated devices that allow Apple to capture a premium on hardware sales. Although Apple has a robust product pipeline and ample opportunity to gain share in its various end markets, short product life cycles and intense competition will prevent the firm from resting on its laurels or carving out a wide economic moat, in our opinion.

We believe Apple has developed a narrow economic moat, thanks to switching costs related to a variety of attributes around the iOS platform that may make current iOS users more reluctant to stray outside the Apple ecosystem for future purchases. However, much of Apple's exponential growth in recent years has stemmed not from the firm's moat, but from the achievement of building the first truly revolutionary smartphone, the iPhone, that integrated hardware and software, as well as a robust apps store and ecosystem that attracted new users to platform. Apple's first-mover advantage may be diminishing, and "easy growth" coming from early smartphone adopters may be winding down as the smartphone market moves up the adoption curve and competition ramps up from Samsung and others. Yet we still foresee future iPhone growth, coming from both attracting new customers to iOS (mostly in emerging markets, although we still see U.S. growth as well) and retaining Apple's existing premium iPhone customers, where we think the company's moat will play an increasingly important role.

Ultimately, we think future smartphone and tablet competition will stem from software and services, as hardware is already approaching commoditization, similar to the PC market today. Even after the firm's first-mover advantage in the development of iOS and a solid third-party

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Close Competitors	Currency (Mil)	Market Cap	TTM Sales	Oper Income	Net Income
Google, Inc.	USD	280,581	53,499	12,848	11,193
Microsoft Corporation	USD	279,679	76,012	20,883	16,406
Hewlett-Packard Co	USD	40,105	118,680	-11,347	-12,886
Dell Inc	USD	23,256	56,940	3,012	2,372

apps store, ongoing enhancements such as FaceTime, iCloud, and Siri have helped differentiate Apple from Google's Android platform thus far, and we expect many more software differentiators in the future. Even if Samsung were to catch up to Siri with its S-Voice service today, Apple's integration of Siri with third-party apps (such as gathering restaurant reviews from Yelp) may make for a more robust service that could become a clear iOS differentiator. We also view iCloud as especially important in terms of switching costs; customers who own an iPhone and other iOS products (perhaps an iPad or Mac) may become more reluctant to buy a new device that doesn't sync with the rest of the ecosystem. Rumors of an Apple iWatch may evolve into another product that could be extremely important in terms of keeping current iOS users invested in Apple's products into the future. Although iCloud and iOS won't provide Apple users with insurmountable switching costs, especially if the company's products are perceived to be stale or boring, the firm has done a much better job than predecessors (BlackBerry comes to mind) that failed to lock in customers when they were king of the hill. Apple's recent growth may have come from new users in the early phase of smartphone market adoption, but the company's ability to generate repeat purchases will be critical for future iPhone growth in the years ahead.

Regardless, Apple will have to continually develop superior products on all fronts (hardware, software, services, and third-party apps) while fending off many strong rivals in end markets highlighted by short product life cycles and intense competition. In hardware, Samsung's popular Galaxy smartphones and Note phablets (phone/tablets) offer larger screen sizes that have resonated with consumers, but a larger iPhone could someday negate Samsung's advantage.

In terms of pricing, we expect Apple to remain a premium supplier of devices and addressing lower price points with older iPhone models, essentially ignoring very low-end smartphone buyers ($300 and below) in emerging markets. In services, as Apple's Maps fiasco may show, it's unlikely that any single firm can provide first-class solutions in all aspects of the smartphone experience, so we expect Apple to continue to partner with key third parties like Facebook and others, to offer iOS users a superior experience. Finally, in software, we expect iOS to remain one of the two predominant ecosystems, fending off threats from Microsoft and BlackBerry while battling head-to-head against Android. Despite Apple's nice revenue streams from iTunes, Apple's current and future profitability won't come from add-on purchases, but rather from the premium captured on the sale of its hardware, even though Android-based rivals will likely compete on price. In order to justify and maintain this hardware premium over Android devices, however, Apple's products will have to be thought of as best-in-class (either in perception or reality) based on all of these hardware, software, and services aspects, and the company can afford very few missteps along the way.

Valuation, Growth and Profitability

Our fair value estimate for Apple is $600 per share, which implies fiscal 2013 (ending September 2013) price/earnings of 14 times, and only 11 times after excluding $145 per share of cash on hand as of December 2012. We project revenue growth of 16% in fiscal 2013, thanks to the success of the iPhone 5, iPad and iPad Mini, and a variety of Mac computers. However, we project slower revenue growth in 2014 and beyond, as iPhone and iPad unit sales increases are mostly offset by pricing declines and an unfavorable mix toward lower-priced models. We currently model 10% revenue growth in fiscal 2014 and midsingle-digit growth thereafter.

We still project healthy long-term iPhone unit growth, as in the near term, Apple should still attract late smartphone adopters in developed markets and new customers in emerging markets, especially once the firm eventually strikes a partnership with China Mobile. Longer-term, as more and more consumers are previous smartphone owners, we think Apple has a good chance to retain a sizable portion of its iOS user base today, and perhaps gain further share at the high end of the market. However, the next big wave of smartphone adoption will likely come from low-end phones sold in emerging markets, and we don't foresee Apple being a major player in the low end. We also foresee a less favorable mix shift toward older, lower-priced iPhones that may weigh on gross margins.

We project robust long-term iPad revenue growth, as this device both displaces PCs and is purchased as a third device alongside PCs and phones. However, a mix shift toward lower-priced iPad Minis will partially offset this strong unit sales growth. We assume Apple's line of Mac PCs will see minimal revenue growth, as Macs gain share in the large but slow-growth (at best) PC market. We also do not make any profitability assumptions for an Apple TV or iWatch, but recognize that future innovations may provide upside to our valuation.

We anticipate that Apple's gross margins peaked at 44% in fiscal 2012, but fall to 38% in fiscal 2013 and down to the mid-30% range in the long term. In turn, operating margins of 35% in fiscal 2012 will fall to the mid-20% range five years out. Our fair value uncertainty rating for Apple is high.

Risk

We believe a large, well-diversified company like Apple faces several risks. Smartphone and tablet competition is rising, as Samsung, in particular, has developed compelling iPhone alternatives in the premium smartphone space. Meanwhile, we anticipate that a greater portion of smartphone sales come from low-end devices in emerging markets where Apple does not participate. If these devices turn out to offer only a slightly worse user experience than iOS products, Apple may be unable to capture an adequate premium on future hardware sales.

Despite its intentions to control as much of the user experience as possible for its products, Apple still relies on a robust app developer base and strong partnerships with third parties. Its decision to use an in-house mapping solution (and subsequent apology) may have diminished Apple's reputation and its customers' user experience, at least in the near term, and switching costs around other iOS products might not be enough to retain unsatisfied customers. We think it is unlikely that a further split from Google involving search is next, as we believe Apple's and Google's map differences pertained to specific creative user interface differences around mapping features, whereas search has a much simpler user interface (i.e., typing in the search bar).

If Apple were to falter and its exceptional brand be diminished as customers departed iOS in droves, we don't think Apple could use its cash to buy its way out of any problem. As a premium phone supplier, Apple also runs the risk that wireless carriers could reduce or eliminate the subsidies that they provide their customers on the iPhone, in turn raising customers' up-front costs and perhaps making other smartphones appear to be better alternatives. Finally, Apple lost cofounder and visionary Steve Jobs in October 2011, and while we believe CEO Tim Cook is a more-than-capable leader, Apple runs the risk that its unique culture and sense of innovation may diminish over time.

Bulls Say

- Gartner expects the smartphone market to essentially double from 2011 to 2014, so Apple could see tremendous revenue growth even if it only grew at the market rate.
- The iPad has been Apple's fastest-growing product line

ever, which is a tremendous achievement given previous hits like the iPod and iPhone.

- For each iOS device purchased, customers may be less likely to switch to another provider and more likely to buy another Apple product, which could be a good sign for Mac sales, even in a soft PC environment.
- Apple's retail stores provide a platform for exposing new consumers to the breadth of the company's expanding product lines.

Bears Say

- Few firms have been able to maintain Apple's strong position in the handset market, as short product cycles and intense competition typically lead to new, innovative products that have historically prevented any single firm from dominating the marketplace.
- Apple faces a strong, well-capitalized competitor in Samsung in the premium smartphone space, and we view the high-end smartphone industry as a two-horse race between these two firms in the future.
- Apple may have lost much of its vision and creativity with the passing of cofounder Steve Jobs in October 2011.
- Apple is reliant on partnerships with third-party software providers like Google and Facebook, and it may struggle to sell premium products if it severs ties with these partners or offers inferior substitutes to these apps.

Financial Overview

Financial Health:As of December, Apple held about $43 billion in cash and investments in the U.S. that can be used for dividend payments, stock repurchases, and domestic acquisitions. Apple held another $94 billion in overseas cash and investments that it cannot repatriate to the U.S. without paying additional taxes. The company has no debt. We are not concerned about Apple's financial health.

Company Overview

Profile: Apple designs consumer electronic devices, including PCs (Mac), tablets (iPad), phones (iPhone), and portable music players (iPod). Apple's products run internally developed software, and this integration of hardware and software often allows the firm to maintain premium pricing for its devices. Apple's products are distributed online as well as through company-owned stores and third-party retailers.

Management: We view Apple as a good steward of shareholder capital. Arthur Levinson, former chairman and CEO of Genentech, is chairman of Apple's board of directors. Tim Cook became CEO in August 2011 after cofounder, longtime CEO, and visionary Steve Jobs stepped down from the CEO role before passing away in October 2011. Cook was considered to be Jobs' right-hand man and served in various operations roles with Apple before becoming COO in 2005. We believe Jobs' passing was a blow to the firm, as he was a one-of-a-kind leader and creative mind.

Although Tim Cook was a highly effective COO, one could question his leadership in the top spot thus far. Apple's formal apology after parting ways with Google Maps in iOS 6 and launching Apple Maps with a variety of bugs and errors may have put management in the spotlight. Given Cook's reputation as an operations guru, we're also modestly concerned with Apple's inability to build enough supply of a host of new products (especially iMacs) in the December 2012 quarter, potentially leaving revenue on the table. Also, Apple recently hinted that a 4" screen is an adequate screen size for a smartphone, yet Samsung has done quite well in recent quarters with its much larger Galaxy S III (4.8" screen) and Note II (5.5") products, and we fear that Apple may miss out on part of the premium smartphone market if it fails to build a larger-screen iPhone. Finally, Apple's capital allocation has come under question. Although we applauded Cook's decision to initiate a dividend and stock buyback plan in early 2012, we recognize that may investors may be impatient and hope the firm distributes more of its $137 billion cash hoard (as of December) to shareholders.

Nonetheless, Apple continues to generate operating margins and cash flow well above its peers in various hardware industries. We also appreciate that Apple's frugality may be frustrating to some investors regarding capital allocation, but is quite admirable in terms of acquisitions. Apple's strategy of focusing on smaller tuck-in deals and developing products in-house, rather than splashy but questionable deals like Microsoft's purchase of Skype or Google's foray into hardware by acquiring Motorola Mobility, appears to have served investors quite well in recent years.

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Analyst Notes

Report Says Apple May Move Away From Intel for Macs, but This Is Far From a Done Deal Nov. 06, 2012
On Monday, a story from Bloomberg reported that Apple AAPL may be looking to switch from Intel INTC processors to its own in-house designed chips based on the ARM ARMH architecture to power its Mac line of computers. While such a move is possible, we believe it is hardly a done deal, though it's worth keeping an eye on in the next several years. Although Apple is a key customer, a switch would not be devastating to Intel, as we estimate Apple accounts for just 3% of total revenue.

Apple has been using Intel microprocessors for its Mac product line since 2005, after previously using PowerPC chips, which were backed by an alliance among IBM IBM, Motorola, and Apple. The firm made the switch because PowerPC could no longer keep up with Intel's processors in terms of performance. However, Apple uses its own internally designed A-series processors, which are based on the ARM architecture, to power its iPhones and iPads. The Bloomberg story indicated that the firm may also look to design ARM-based processors to replace Intel in its Macs a few years from now. We believe it is likely that Apple is looking into alternatives, but such inquiries are common research and development practices at tech companies, as it is necessary for firms to investigate various options before choosing the best technology solution. For example, the firm was rumored to have considered using Advanced Micro Devices' AMD Fusion processors for its MacBook Air notebooks last year.

We think the biggest obstacle to a possible switch is that Apple will need to be convinced that it will be able to come up with a better processor technology road map than Intel for years to come, or it will face the risk of having Mac products that aren't as competitive with PCs that incorporate Intel chips. This is a tall task, given that Intel, as the world's largest chipmaker, has a large R&D budget and the most advanced semiconductor manufacturing technologies at its disposal to focus on creating the most cutting-edge processors. The knock on Intel in recent years has been that its chips are too performance driven and lack the power efficiency that ARM-based chips can provide for mobile devices, such as smartphones and tablets. While this is given in the article as a reason behind a possible switch by Apple down the road, performance remains a paramount consideration in computers, which would play to Intel's strength. In addition, Intel has made significant strides in increasing the power efficiency of its chips in recent years, and we expect it to become more competitive with ARM's solutions on that front in the coming quarters. Even if Apple were to turn to internally developed processors in the years ahead, we suspect that it would do so in consumer-focused Macs, such as the MacBook Air, while continuing to rely on Intel's most advanced processors for Macs that require extensive computing power, such as MacBook Pro. Such a scenario would be similar to Microsoft's MSFT Windows 8 launch, where some less functional Windows RT devices are powered by ARM-based processors while Intel continues to be the processor of choice in more powerful Win8 products.

Bloomberg said Apple may eventually use its in-house A-series chips for Macs, in order to offer a unified user experience based on a single operating system among the Mac, iPhone, and iPad, which would be possible with a common processor architecture. While we recognize the value of a unified user experience, it probably wouldn't make much sense for Apple to entirely switch away from Intel if it would be a detriment to the performance of its Mac computers. While the Bloomberg article highlights a potential risk for Intel, we believe the issue is far from decided. Nonetheless, it is something that bears following

Analyst Notes (continued)

over the next several years. We estimate that Apple currently accounts for roughly 3% of Intel's total revenue. Therefore, Intel wouldn't be significantly affected if Apple did make a switch, though it would certainly be egg on the face for the firm.

Maintaining Our Fair Value Estimate for Apple Despite Stock Price Volatility Dec. 06, 2012

We are maintaining our fair value estimate for Apple AAPL despite a 6% stock decline Wednesday and a bout of recent selling pressure and stock price volatility. We believe many factors are at play regarding the stock price decline from an intraday high of $705.07 on Sept. 21 to an intraday low of $505.75 on Nov. 16. Primarily, we believe investors have been taking gains in Apple, as the September price of $705 represented a 74% gain in nine months. We believe that such profit-taking was exacerbated in early November by U.S. President Barack Obama's re-election, which appears to have heightened concerns about the U.S. fiscal cliff and higher tax rates on investment capital gains. Since Apple was probably the largest investment holding and/or the biggest 2012 winner for many investors, we suspect the stock has likely been a casualty of any profit-taking or trimming of holdings by large investors. More recently, we suspect that technical investors are steering the Apple boat, as evidenced by the massive recovery in the 12 trading hours following the Nov. 16 low of $505, as the stock catapulted back to $566 by the end of the following trading day.

Other nontrading data points have come out in recent days that may have contributed to Wednesday's slide. Taiwanese trade paper DigiTimes reported that Apple's component suppliers may expect a 20% drop in component orders in the March quarter, thereby hinting at a sharp decline in Apple production and, ultimately, sell through. We aren't sounding the alarms for Apple on the basis of this report, as DigiTimes' sources have not always exhibited an accurate record and component orders are always subject to change based on improving or deteriorating forecast product demand. Another potential negative catalyst was Nokia's NOK agreement with China Mobile CHL to sell the Windows-based Nokia Lumia 920T on the carrier's TD-SCDMA 3G network. We don't believe that this deal prohibits Apple from someday selling the iPhone with China Mobile, which is a key catalyst in our thesis for further iPhone growth in the long term, given China Mobile's massive subscriber base of more than 700 million people. At the same time, we are taking a wait-and-see approach toward Nokia and Windows phones in general, and availability with a given carrier is not a guarantee of future success.

Finally, at an investor conference Wednesday, the CEO of AT&T Mobility T, Ralph de la Vega, hinted that the carrier expects to sell 26 million smartphones in 2012, which implies 9.3 million devices in the fourth quarter, about equal to smartphones sold in the fourth quarter of 2011. Given the high proportion of iPhones sold by AT&T as a percentage of total smartphones, one could interpret this to presume that the iPhone 5 launch is not faring significantly better than the 4S launch in 2011. We view this data point as a slight negative, as it would imply that Apple and its loyal base of iPhone customers with AT&T might not wildly exceed expectations. However, we certainly don't see this news as a death blow either, as we think these comments still point to solid iPhone 5 sales with the carrier.

More important, the comparison with the year-ago quarter at AT&T and Apple is not exactly apples-to-apples, as the iPhone 5 was launched Sept. 21 and initial sales were included in AT&T's third-quarter results, versus the 4S launch Oct. 14 where opening weekend sales were captured in the fourth quarter. Additionally, while AT&T is a key iPhone

Analyst Notes (continued)

carrier and the U.S. is Apple's most important iPhone market today, we can see a scenario where iPhone sales at Verizon VZ or Sprint S exceed expectations and contribute to an overall strong iPhone 5 launch. We also have not seen enough evidence that Nokia's Windows phones, Google's GOOG Nexus 4 phones made by LG, or Samsung's relatively older Galaxy S III phones are putting a serious dent in Apple's iPhone 5 momentum just yet. We keep a close eye on the competitive dynamics of the smartphone market, especially during this important holiday season, but we are maintaining our fair value estimate for Apple at this time.

Apple Reportedly Cuts Component Orders; We Maintain our Fair Value Estimate Jan. 14, 2013

We are maintaining our fair value estimate for Apple AAPL after reports from the Wall Street Journal and Japan's Nikkei news service indicate that Apple has cut component orders for the March quarter by as much as half for the iPhone 5. The implication is that demand for the iPhone, especially in emerging markets, is weaker than anticipated, thus adding risk to Apple's near-term earnings and perhaps its long-term growth potential. However, we believe that such bad news is more than baked into Apple's share price today. We certainly recognize these headlines as adding another layer of risk to Apple's forecast for the March quarter, which will be announced on Jan. 23. However, we don't see the news as having much of an effect on Apple's December quarterly results. AT&T's T and Verizon's VZ recent announcements of strong smartphone unit sales in the December quarter bode well for a healthy iPhone 5 launch in the December quarter, at least in the United States.

Regarding the component order cuts, the news articles cite that Apple's forecast was for 65 million iPhone screens in the March quarter. If accurate, we suspect that such a forecast would have been unrealistically high to begin with and that some degree of order cuts should have been expected. Using rough calculations, and without knowledge of screen orders in either prior or future quarters, if we assume that Apple made a similar forecast for the prior quarter for at least 65 million screens (which seems reasonable, if not conservative, given the timing of the iPhone 5 launch), and considering consensus estimates for roughly 50 million iPhones to be sold in the December quarter, Apple could have 15 million excess units of screen inventory on hand entering the March quarter, even with a solid iPhone 5 launch. If Apple in fact cut its March screen orders in half to the 35-million-unit range, this implies that Apple could still be reasonably expected to sell at least 40 million iPhones, if not 50 million, in the March quarter, which we would consider to be a strong number. We should also note that screens were believed to be an area of component shortages for Apple just a couple of months ago. As is common in the handset component supply chain, shortages one quarter may lead to double ordering and, thus, order cancellations once supply and demand come back in to balance. The forecast of 65 million units may imply double ordering across Apple's multiple suppliers, believed to be Sharp, Japan Display, and LG Display. The reports indicate that Japan Display will cut its orders by 80% from the December quarter, while orders to Sharp will decline by 40%. Given Sharp's recent financial struggles, double ordering from the other two screen suppliers may have been a case of reasonable risk management, with perhaps additional orders with Japan Display being the backup plan that is now being canceled. We cannot rule out the risk that these supply chain issues may truly be a result of tepid demand for the iPhone 5, especially in emerging markets, and perhaps the news reports rule out the chance of an absolute blowout March quarter for Apple, but we also believe there is a good chance that these supply chain bumps may not be all that closely related to Apple's sales to end customers, and that such a possibility is not factored into Apple's stock price.

Analyst Notes (continued)

More importantly, we believe that these news reports are already priced into Apple's stock price at this point, and we still view the stock as attractively valued today. We believe that a scenario with a tepid iPhone 5 launch with only modest annual growth is already priced into Apple's stock price in the low $500 range. While these news reports provide some evidence of such a bearish launch, we think that Apple's stock price implies that there is no chance that these supply chain issues are just noise and will not hamper iPhone demand in early 2013, and we're fond of such a risk/reward opportunity today. Given the $128 per share of cash that Apple has on hand, our estimates of at least $48 of EPS over each of the next five years, the potential for better-than-expected iPad growth, and perhaps new innovations like Apple TV products, we still see Apple as attractively valued today.

Apple's Soft March Forecast Makes Us Take a Bite From Our Fair Value Estimate Jan. 24, 2013

We'll reduce our fair value estimate for Apple AAPL by 22% following its fiscal first-quarter results, reported Wednesday. Apple's latest quarterly earnings report was decent, in our view, and in line with both Wall Street's, and our own, expectations. However, Apple's highly disappointing March-quarter forecast implies slowing iPhone sales momentum, giving us less certainty about robust iPhone growth in the years ahead.

iPhone unit shipments of 47.8 million during the December quarter reflect a 29% increase from the 37 million iPhone 4S shipments during the year-ago period, but was modestly below consensus estimates of roughly 50 million. iPhone average selling prices (ASPs) of $642 each were fairly solid, in our view. iPad unit sales of 22.9 million were about in line with our estimates, but also below consensus estimates of approximately 24 million, and failed to provide the robust, exponential growth that some growth investors were seeking. iPad average selling prices of $467 each reflects a 21% decline from the prior year. In our view, this implies a sharp shift in product mix toward the iPad Mini. Apple will need to see tremendous iPad unit growth to make up for the negative mix shift toward these lower-priced tablets. In our view, Macs were the quarter's biggest disappointment. At only 4.1 million units, Mac sales were down 18%, sequentially. This marks a far cry from the bright spot they represented during the September quarter, when Apple's management noted that they couldn't build enough iMacs to meet demand. PC cannibalization from iPads and an overall soft PC market were also likely headwinds. Revenue of $54.5 billion, gross margins of 38.6% and earnings per share (EPS) of $13.81 all beat Apple's traditionally conservative forecasts, but were relatively in line with our expectations and the Street's. Apple's March-quarter forecast is the bigger concern. First, the company provided a projected revenue range of $41 billion-$43 billion. This marks a departure from past practice, when management would give a single -- usually extremely conservative -- sales target that investors never took too seriously. Not only is this range below our prior estimates (and the Street's) of almost $46 billion, but management's comments regarding a revenue range indicates that investors should expect revenue to fall within the range, rather than exceed a single data point. We think this approach is meant to temper expectations for a possible upside surprise. Given Apple's launch of several new products, we're disappointed that management expects sales to trail off so quickly. iPad, Mac and iPod sales should dip due to seasonal weakness after the holiday season, but we think the forecast also implies a sharp retreat in iPhone sales to the mid-30 million unit range, which may bode poorly for the allure of the iPhone 5, and perhaps hints at a stale product line, or a lack of innovation. In late 2011,

Analyst Notes (continued)

Apple's iPhone 4S launch was a stellar success that led to its meteoric stock rise in early 2012, bolstered by a strong December launch of 37 million units, and a surprisingly robust follow up of 35 million units in the March 2012 quarter. Now, Apple's forecast implies that no such follow up is expected with the iPhone 5 launch. Furthermore, Apple noted that the iPhone 5, iPhone 4, iPad Mini, and iMacs all faced supply constraints in the December quarter, and the company was unable to meet demand. Yet, Apple's forecast doesn't suggest that the company will make up for these lost sales in the following quarter, but perhaps miss out on these opportunities entirely. Tim Cook's experience as an operations guru makes this issue all the more puzzling to us: Innovation, rather than supply chain hiccups, would have been our biggest concern around Apple's management after the passing of Steve Jobs. Longer term, we're cutting our iPhone unit sales estimates. The company's March forecast, along with iPhone 4 shortages and Verizon's commentary that half of its December iPhone sales were of older models, among other data points, raise our fears that the iPhone 5 will fail to live up to our previously lofty expectations, and that consumers might be less willing to pay up for Apple's premium devices. If the 4S launch provides a historical perspective, iPhone ASPs will also likely decline in 2013 until a new product transition occurs. In turn, we have modestly trimmed our iPhone gross margin assumptions, which will lead to lower long-term EPS projections. Apple may be keeping its new product information close to the vest, but the firm also reiterated that a four-inch screen is the right size for a smartphone. In turn, Apple may concede sales of 4.8-inch and larger devices to firms like Samsung, which may end up costing the firm if screen size becomes a real differentiator among premium smartphone buyers. We also project lower long-term iPad and Mac unit sales, as future growth may come off of a lower sales base in 2013. Finally, we lowered our terminal long-term growth rate to account for the possibility that EPS may stagnate in 2017 and beyond if pricing and gross margin declines offset revenue growth in certain product categories. We should note that our fair value estimate does not account for any revolutionary Apple TV products or new innovations, but we recognize the optionality potential associated with Apple's ability to build a groundbreaking new product. In short, we may not see a strong catalyst for Apple (outside of increased cash distribution to shareholders) until its next wave of product launches, which may come in mid-2013 rather than year-end, but we certainly think there is a chance that Apple can bounce back from a potentially ho-hum early 2013. We should also note that Apple's forecast a year ago, in March 2012, was for a 30% sequential revenue decline. Instead, the firm offered up one of its biggest earnings beats, seeing only a 15% decline. If Apple's projected 22% sales decline in March 2013 turns out to be similarly conservative, bullish investors may benefit from the sort of blowout quarter that Apple regularly reported in prior periods. Longer-term, we anticipate that an eventual iPhone introduction with China Mobile CHL could provide Apple with a strong unit sales boost, and we still fail to see many iPhone killers on the market today, although Samsung's Galaxy S III's and Note's may come close. Despite the recent slate of negative news, we still believe that Apple has a narrow economic moat and a positive moat trend. Apple's gloomy March forecast may imply that iPhone growth may not live up to our lofty expectations, but certainly doesn't indicate that consumers are abandoning the platform in droves. We still believe that Apple has a loyal customer base that will continue to buy iOS products, rather than switch to Android, in order to benefit from iCloud, synchronized content, and operating system familiarity. Apple will have to promote these advantages to future potential smartphone and tablet customers, but we think such switching costs provide a bit of a floor on future iOS product sales, unless new devices are a complete flop in

Analyst Notes (continued)

the marketplace.

Our Take on Apple's Capital Allocation Feb. 08, 2013
We are maintaining our $600 fair value estimate for Apple AAPL in light of the firm's press release stating that Apple is actively discussing whether to return additional cash to shareholders.

As of December, Apple held $137 billion of cash on hand, or $145 per share. About $94 billion, or $99 per share, is held overseas and is thus unavailable to shareholders in the way of dividends, buybacks, or U.S. acquisitions unless the firm pays additional repatriation taxes, which would probably be in the neighborhood of 30%. We believe Apple has used and will continue to use this offshore cash for supply-chain-type purchases, such as capital expenditures at its outsourced manufacturers like Foxconn or large component purchases like NAND flash memory or screen displays. For the most part, however, we consider this cash to be somewhat stuck overseas unless U.S. federal tax policy changes so that it can be brought back to the United States without additional taxes. Given that lobbying efforts with the Obama administration have been unproductive so far, we're skeptical that a solution to this problem, which plagues many leading technology firms, is on the immediate horizon.

Apple's onshore cash, which can be used for dividends, buybacks, and domestic acquisitions, stands at $43 billion, or $46 per share. This balance, plus future U.S.-generated cash flows, should be more than sufficient to fund Apple's current 2% yield and $10 billion stock-repurchase program. We project that the company will not expand its buyback in future years, other than to perhaps offset equity dilution similar to its current $10 billion plan. Rather, we project decent dividend increases to $3.90 per share per quarter by 2017. Thanks to these distributions, as well as onshore capital spending, we currently project that a substantial majority of Apple's cash balance will be in overseas accounts by 2017, as the firm distributes U.S. cash to investors while overseas cash piles up. We believe the board could alleviate this longer-term issue by issuing debt (presumably at low interest rates) that would be collateralized with offshore cash but would boost Apple's U.S. cash balance, thus allowing the firm to substantially increase its dividend or share-repurchase program. Still, we have no insight into the board's discussions at this time, and we would not anticipate changing our fair value estimate solely because of future changes to Apple's capital structure.

Samsung Galaxy S 4 Poised to Be Worthy IPhone Competitor Mar. 15, 2013
Samsung announced its long-awaited Galaxy S 4 smartphone Thursday, and at first glance, we're impressed by some of the new and innovative services associated with the device and expect it to be a worthy challenger to Apple's AAPL iPhone in the premium smartphone market. Initial reviews from a variety of tech websites have been mixed thus far, but we anticipate that if nothing else, Samsung's brand and marketing muscle will probably make the GS4 the premier Android-based phone in the market. Samsung intends to launch the phone in 155 countries, beginning at the end of April.

We have two key takeaways from the announcement. First, Samsung didn't focus much on hardware, but rather a host of innovative services that differentiate the device from not only the iPhone but also other Android handsets. This is indicative of our long-term thesis that software, not hardware, will be the more important differentiator in the smartphone market. Some examples include S Translator, S Voice Drive for navigation, Story Album for photo sharing, and Samsung Hub, which allows for syncing of content among devices.

Analyst Notes (continued)

Second, the GS4 launch did not mention Google GOOG or highlight its Android operating system, and no third-party apps partners were highlighted, as they took a back seat to more gadgetlike product features built internally by Samsung.

Our initial take is that the GS4 will continue to make the premium smartphone market a two-horse race between Samsung and Apple. We certainly see the GS4 as a compelling device for new smartphone adopters and current Android users, and it may crush the efforts of HTC, Blackberry BBRY, and Nokia NOK to regain share in the premium smartphone market. Since the iPhone 5 will be more than seven months old by the time the GS4 arrives, Samsung may again do a great job of capitalizing on a window of opportunity between iPhone cycles and raising the bar that Apple must hurdle with its new product launches. That said, we believe a slowdown in iPhone 5 sales over the next few months, as well as the competitive threat from Samsung, is already baked into Apple's stock price today, and we think the shares remain attractively valued. We maintain our fair value estimate for Apple.

We Are Raising Our Apple Fair Value Uncertainty Rating to High Apr. 12, 2013

We have taken a fresh look into our thesis and valuation assumptions for Apple AAPL. We will maintain our fair value estimate of $600 per share and narrow moat rating for the firm. However, we are raising our fair value uncertainty rating for the firm to high from medium, driven by changes in market dynamics.

We believe that much of Apple's outsize growth in recent years has stemmed not from the firm's narrow economic moat, but rather from a first mover advantage associated with the creation of a truly revolutionary smartphone and associated ecosystem. Looking at the near-term picture, we still view the Apple story as focused on enticing new customers away from basic flip phones and competing platforms, instead of relying on switching costs to retain current iPhone users. Ultimately, we think this story will begin to evolve over the next several quarters, as more and more potential iPhone customers come from repeat buyers, and we think Apple's moat will play a critical role in retaining these iOS users. In the meantime, however, we see greater uncertainty around the firm's ability to attract new users. Some uncertainty stems from greater competition from Android, and especially Samsung, in the premium smartphone space. Yet the greater uncertainty, in our view, comes from Apple's ability to attract late smartphone adopters and increasingly price-sensitive first-time smartphone buyers to the iOS platform, as we fear that Apple's premium pricing strategy may leave the company unable to sell into this segment of handset subscribers. Again, we believe Apple's narrow moat will enable the firm to retain a good portion of its iOS user base in the years ahead, but our projections about the ultimate size of this user base has become increasingly cloudy in recent months, which has spurred us to raise our uncertainty rating. Put in perspective, our new uncertainty rating of high puts Apple's rating in line with other large-cap smartphone software providers such as Google GOOG.

Cirrus Logic's Warning Weighs on Apple, but May Point to a Summer iPhone 5S Launch Apr. 17, 2013

We are maintaining our fair value estimate and moat rating for Apple AAPL after one of its tightest chip suppliers, Cirrus Logic CRUS, issued an earnings warning that included a dismal outlook for the June quarter and a hefty inventory write-off that points to soft demand for the iPhone 5. On the surface, Cirrus' announcement can only be construed as a negative for Apple, but perhaps not a catastrophe. Cirrus'

Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Stewardship	Morningstar Credit Rating	Industry
449.98 USD	600.00 USD	360.00 USD	930.00 USD	High	Narrow	Standard	AA-	Computer Systems

Analyst Notes (continued)

comments also may indicate that an Apple iPhone refresh might come in the summer months.

Cirrus' revenue for the March quarter of $207 million was modestly below the midpoint of the company's forecast range of $200 million-$220 million announced in late January. We view these sales levels as another data point that indicates that Apple will be hard-pressed to report a blowout March quarter as in years' past, but since sales levels were not out of Cirrus' forecast range, we also don't think that iPhone sales unexpectedly fell off a cliff in the March quarter, either. The bigger news came from Cirrus' write-off of $20.7 million of inventory pertaining to Apple components in the March quarter, as well as dreadful revenue guidance for the June quarter, expecting $150 million-$170 million versus Street estimates of $195 million.

If Apple's product mix were to stay the same through the summer, we'd be highly disappointed by these comments. However, we view Cirrus' remark that the customer (that is, Apple) is migrating to newer components as an indicator of Apple's product mix changing, which may mean that a summer iPhone 5S launch is on the way and would understandably reduce demand for the iPhone 5. If these new parts carry lower prices, Cirrus' sales may take a more pronounced hit that has less to do with Apple's unit sales. Furthermore, as Apple prepares to sell the iPhone 5 at lower prices once the 5S is launched, the company may use cheaper Cirrus parts in the iPhone 5 going forward in order to cut costs and still earn solid gross margins on the device. Thus, Apple may have failed to sell as many iPhone 5s as initially expected (hardly surprising), but we're hesitant to declare that Cirrus' warning is a sign that iPhone 5 sales are continuing to fall at an even faster pace.

Apple's Plan to Return Cash to Shareholders a Plus, but Soft Forecast and Margins Still a Concern Apr. 23, 2013

Apple's AAPL fiscal second-quarter results were in line with our expectations. We're modestly concerned about the company's third-quarter forecast until we gain further clarity on the timing of a new iPhone launch. Perhaps the biggest news, however, came from Apple's announcement of a 15% dividend increase, and an additional $50 billion stock buyback plan, as Apple distributes more of its vast cash cushion to investors. We're maintaining our $600 fair value estimate and narrow moat rating. The 37 million-unit iPhone shipments in the March quarter were slightly better than the 35 million units sold during the year-ago quarter, which coincided with the iPhone 4S launch. However, a 4% decline in iPhone average selling prices, or ASPs, points toward shifting consumer preferences toward older, cheaper models. At 19.5 million, iPad unit sales were strong. However, a mix shift toward lower-priced iPad Minis led to a 4% decline in iPad ASPs. Mac unit sales were down only 3% sequentially, as Apple caught up to unmet demand in the December quarter, helping to offset an otherwise dismal PC demand environment. Corporate gross margins of 37.5% were at the low end of the company's forecast, reflecting the less favorable product mix stemming from Apple's focus on emerging market growth. We're also encouraged by the apparent new boldness in Apple's capital allocation plans, and think that tapping the debt markets in a low interest rate environment to fund a portion of its stock buybacks and dividend increase is a wise move. We view Apple's June outlook of $34.5 billion in revenue and just over $7 in EPS as a dismal forecast. However, if an exciting iPhone 5S were to arrive this summer, as some of Apple's chip suppliers have hinted, we'd consider the weak guidance to be less of a concern. However, CEO Tim Cook's comment about "really great stuff coming in the fall" clearly tempers such enthusiasm, and the forecast implies that June iPhone unit

Analyst Notes (continued)

sales may be worse than the year-ago quarter. While we still foresee long-term iPhone growth as Apple grows in China and garners repeat sales to iOS customers in the U.S. and elsewhere, near-term iPhone sluggishness may place greater importance on Apple's ability to deliver a follow-up iPhone hit later this year.

Apple Inc(USD) AAPL

Last Close $	Sales $Mil	Mkt Cap $Mil	Industry	Currency
$442.78	$169,104	$415,615	Computer Systems	USD

Apple Inc designs, manufactures, and markets personal computers, mobile communication devices, and portable digital music and video players and sells a variety of related software, services, peripherals, and networking solutions.

Morningstar Rating	Fair Value Uncertainty	Fair Value	Economic Moat	Style	Sector
★★★★ As of 04-30-2013	High	$600.00	Narrow	Large Growth	Technology

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2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YTD	
12.51	34.79	75.46	93.16	202.96	200.26	213.95	326.66	426.70	705.07	555.00	Annual Price High
6.36	10.59	31.30	50.25	81.90	79.14	78.20	190.25	310.50	405.00	385.10	Low
		2:1									Recent Splits

Price Volatility
Monthly High/Low
Rel Strength to S&P 500
52 week High/Low $
705.07-385.10
10 Year High/Low $
705.07-6.36
Trading Volume Million

Growth Rates Compound Annual

Grade: A	1 Yr	3 Yr	5 Yr	10 Yr
Revenue %	44.6	53.9	45.5	39.2
Operating Income %	63.5	67.6	65.8	124.5
Earnings/Share %	59.5	69.4	62.2	85.8
Dividends %	—	—	—	—
Book Value/Share %	52.7	53.0	49.8	36.3
Stock Total Return	-23.2	19.7	20.0	51.2
+/- Industry	-6.3	8.9	9.9	38.4
+/- Market	-38.3	7.2	15.3	43.4

Profitability Analysis

Grade: A	Current	5 Yr Avg	Ind	Mkt
Return on Equity %	33.3	36.7	38.8	19.8
Return on Assets %	23.0	23.6	14.4	8.1
Revenue/Employee $K	2322.9	1482.9	—	1044.2
Fixed Asset Turns	14.2	16.2	11.9	7.0
Inventory Turns	87.2	69.1*	21.2	12.5
Gross Margin %	39.5	39.8	34.9	43.0
Operating Margin %	30.9	28.9	11.5	18.4
Net Margin %	23.5	21.5	13.6	13.1
Free Cash Flow/Rev %	26.0	24.6	15.0	11.6
R&D/Rev %	2.2	2.6	3.3	—

Financial Position (USD)

Grade: B	09-12 $Mil	03-13 $Mil
Cash	10746	12053
Inventories	791	1245
Receivables	18692	13336
Current Assets	57653	63337
Fixed Assets	15452	15026
Intangibles	5359	5536
Total Assets	176064	194743
Payables	22710	16522
Short-Term Debt	—	—
Current Liabilities	38542	35508
Long-Term Debt	—	—
Total Liabilities	57854	59253
Total Equity	118210	135490

Valuation Analysis

	Current	5 Yr Avg	Ind	Mkt
Price/Earnings	10.6	15.6	24.0	16.6
Forward P/E	9.3	—	—	14.3
Price/Cash Flow	7.6	10.7	7.7	9.7
Price/Free Cash Flow	9.5	12.5	9.9	38.1
Dividend Yield %	1.8	—	1.8	2.3
Price/Book	3.1	4.4	3.6	2.3
Price/Sales	2.5	3.3	1.5	2.6
PEG Ratio	0.8	—	—	1.9

*3Yr Avg data is displayed in place of 5 Yr Avg

Stock Performance

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YTD	Stock Performance
49.1	201.4	123.3	18.0	133.5	-56.9	146.9	53.1	25.6	32.7	-17.0	Total Return %
20.4	190.5	118.3	2.2	128.0	-19.9	120.4	38.0	23.4	16.7	-28.6	+/- Market
22.2	188.0	123.9	0.0	99.0	-17.7	72.8	32.3	10.7	17.3	-9.9	+/- Industry
—	—	—	—	—	—	—	—	—	1.0	1.8	Dividend Yield %
7858	25893	60587	72901	173427	75997	190983	297089	377519	499696	415615	Market Cap $Mil

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	TTM	Financials (USD)
6207	8279	13931	19315	24006	37491	42905	65225	108249	156508	169104	Revenue $Mil
27.5	27.3	29.0	29.0	34.0	35.2	40.1	39.4	40.5	43.9	39.5	Gross Margin %
-1	313	1643	2453	4409	8327	11740	18385	33790	55241	52285	Oper Income $Mil
0.0	3.8	11.8	12.7	18.4	22.2	27.4	28.2	31.2	35.3	30.9	Operating Margin %
69	266	1328	1989	3496	6119	8235	14013	25922	41733	39672	Net Income $Mil
0.10	0.36	1.56	2.27	3.93	5.36	9.08	15.15	27.68	44.15	41.89	Earnings Per Share $
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65	7.95	Dividends $
727	775	857	878	889	902	907	925	937	945	947	Shares Mil
5.89	7.20	9.94	13.07	19.19	25.73	39.47	59.35	96.61	135.62	144.35	Book Value Per Share $
289	934	2535	2220	5470	9596	10159	18595	37529	50856	55255	Oper Cash Flow $Mil
-164	-176	-260	-657	-986	-1199	-1213	-2121	-7452	-9402	-11218	Cap Spending $Mil
125	758	2275	1563	4484	8397	8946	16474	30077	41454	44037	Free Cash Flow $Mil

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	TTM	Profitability
1.1	3.6	13.6	13.9	16.4	19.9	19.7	22.8	27.1	28.5	23.0	Return on Assets %
1.7	5.7	21.2	22.9	28.5	33.2	30.5	35.3	41.7	42.8	33.3	Return on Equity %
0.95	1.11	1.42	1.35	1.13	1.22	1.03	1.06	1.13	1.07	0.98	Asset Turnover
1.1	3.2	9.5	10.3	14.6	16.3	19.2	21.5	24.0	26.7	23.5	Net Margin %
1.6	1.6	1.6	1.7	1.7	1.6	1.5	1.6	1.5	1.5	1.4	Financial Leverage

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	03-13	Financial Health (USD)
—	—	—	—	—	—	—	—	—	—	—	Long-Term Debt $Mil
4223	5076	7428	9984	14532	22297	31640	47791	76615	118210	135490	Total Equity $Mil
—	—	—	—	—	—	—	—	—	—	—	Debt/Equity
3530	4404	6813	8038	12657	18645	20049	20956	17018	19111	27829	Working Capital $Mil

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	TTM	Valuation
57.5	50.5	38.8	30.8	43.5	15.8	20.5	18.0	11.5	12.1	10.6	Price/Earnings
0.0	0.0	—	—	0.0	0.0	0.0	0.0	—	0.0	0.6	P/E vs. Market
1.2	2.6	3.8	3.6	6.7	2.3	4.1	3.9	3.0	3.1	2.5	Price/Sales
1.8	4.5	7.2	6.5	10.3	3.3	5.3	5.4	4.2	3.9	3.1	Price/Book
19.7	17.2	30.1	19.8	27.5	7.2	16.0	13.2	8.4	8.9	7.6	Price/Cash Flow

Quarterly Results (USD)

Revenue $Mil	Jun	Sep	Dec	Mar
Most Recent	35023.0	35966.0	54512.0	43603.0
Previous	28571.0	28270.0	46333.0	39186.0

Rev Growth %	Jun	Sep	Dec	Mar
Most Recent	22.6	27.2	17.7	11.3
Previous	82.0	39.0	73.3	58.9

Earnings Per Share $	Jun	Sep	Dec	Mar
Most Recent	9.32	8.67	13.81	10.09
Previous	7.79	7.05	13.87	12.30

Close Competitors

	Mkt Cap $Mil	Rev $Mil	P/E	ROE%
Microsoft Corporation	276422	76012	17.1	22.6
Google, Inc. Class A	273564	53499	23.8	16.3

Major Fund Holders

	% of shares
Vanguard Total Stock Mkt Idx	1.34
Fidelity Contrafund	1.08
PowerShares QQQ	0.95

Morningstar's Approach to Rating Stocks

Our Key Investing Concepts
- Economic Moat™ Rating
- Discounted Cash Flow
- Discount Rate
- Fair Value
- Uncertainty
- Margin of Safety
- Consider Buying/Consider Selling
- Stewardship Grades

At Morningstar, we evaluate stocks as pieces of a business, not as pieces of paper. We think that purchasing shares of superior businesses at discounts to their intrinsic value and allowing them to compound their value over long periods of time is the surest way to create wealth in the stock market.

We rate stocks 1 through 5 stars, with 5 the best and 1 the worst. Our star rating is based on our analyst's estimate of how much a company's business is worth per share. Our analysts arrive at this "fair value estimate" by forecasting how much excess cash--or "free cash flow"--the firm will generate in the future, and then adjusting the total for timing and risk. Cash generated next year is worth more than cash generated several years down the road, and cash from a stable and consistently profitable business is worth more than cash from a cyclical or unsteady business.

Stocks trading at meaningful discounts to our fair value estimates will receive high star ratings. For high-quality businesses, we require a smaller discount than for mediocre ones, for a simple reason: We have more confidence in our cash-flow forecasts for strong companies, and thus in our value estimates. If a stock's market price is significantly above our fair value estimate, it will receive a low star rating, no matter how wonderful we think the business is. Even the best company is a bad deal if an investor overpays for its shares.

Our fair value estimates don't change very often, but market prices do. So, a stock may gain or lose stars based just on movement in the share price. If we think a stock's fair value is $50, and the shares decline to $40 without much change in the value of the business, the star rating will go up. Our estimate of what the business is worth hasn't changed, but the shares are more attractive as an investment at $40 than they were at $50.

Because we focus on the long-term value of businesses, rather than short-term movements in stock prices, at times we may appear out of step with the overall stock market. When stocks are high, relatively few will receive our highest rating of 5 stars. But when the market tumbles, many more will likely garner 5 stars. Although you might expect to see more 5-star stocks as the market rises, we find assets more attractive when they're cheap.

We calculate our star ratings nightly after the markets close, and issue them the following business day, which is why the rating date on our reports will always be the previous business day. We update the text of our reports as new information becomes available, usually about once or twice per quarter. That is why you'll see two dates on every Morningstar stock report. Of course, we monitor market events and all of our stocks every business day, so our ratings always reflect our analyst's current opinion.

Economic Moat™ Rating

The Economic Moat™ Rating is our assessment of a firm's ability to earn returns consistently above its cost of capital in the future, usually by virtue of some competitive advantage. Competition tends to drive down such

Morningstar Research Methodology for Valuing Companies

Competitive Analysis → **Economic Moat™ Rating** → Company Valuation → **Fair Value Estimate** → Uncertainty Assessment → ★★★★★

Competitive Analysis: Analyst conducts company and industry research:
- Management interviews
- Conference calls
- Trade-show visits
- Competitor, supplier, distributor, and customer interviews

Economic Moat™ Rating: The depth of the firm's competitive advantage is rated:
- None
- Narrow
- Wide

Company Valuation: Analyst considers company financial statements and competitive position to forecast future cash flows.

Assumptions are input into a discounted cash-flow model.

Fair Value Estimate: DCF model leads to the firm's Fair Value Estimate, which anchors the rating framework.

Uncertainty Assessment: An uncertainty assessment establishes the margin of safety required for the stock rating.

★
★★
★★★
★★★★
★★★★★

The current stock price relative to fair value, adjusted for uncertainty, determines the rating.

economic profits, but companies that can earn them for an extended time by creating a competitive advantage possess an Economic Moat. We see these companies as superior investments.

Discounted Cash Flow

This is a method for valuing companies that involves projecting the amount of cash a business will generate in the future, subtracting the amount of cash that the company will need to reinvest in its business, and using the result to calculate the worth of the firm. We use this technique to value nearly all of the companies we cover.

Discount Rate

We use this number to adjust the value of our forecasted cash flows for the risk that they may not materialize. For a profitable company in a steady line of business, we'll use a lower discount rate, also known as "cost of capital," than for a firm in a cyclical business with fierce competition, since there's less risk clouding the firm's future.

Fair Value

This is the output of our discounted cash-flow valuation models, and is our per-share estimate of a company's intrinsic worth. We adjust our fair values for off-balance sheet liabilities or assets that a firm might have--for example, we deduct from a company's fair value if it has issued a lot of stock options or has an under-funded pension plan. Our fair value estimate differs from a "target price" in two ways. First, it's an estimate of what the business is worth, whereas a price target typically reflects what other investors may pay for the stock. Second, it's a long-term estimate, whereas price targets generally focus on the next two to 12 months.

Uncertainty

To generate the Morningstar Uncertainty Rating, analysts consider factors such as sales predictability, operating leverage, and financial leverage. Analysts then classify their ability to bound the fair value estimate for the stock into one of several uncertainty levels: Low, Medium, High, Very High, or Extreme. The greater the level of uncertainty, the greater the discount to fair value required before a stock can earn 5 stars, and the greater the premium to fair value before a stock earns a 1-star rating.

Margin of Safety

This is the discount to fair value we would require before recommending a stock. We think it's always prudent to buy stocks for less than they're worth.The margin of safety is like an insurance policy that protects investors from bad news or overly optimistic fair value estimates. We require larger margins of safety for less predictable stocks, and smaller margins of safety for more predictable stocks.

Consider Buying/Consider Selling

The consider buying price is the price at which a stock would be rated 5 stars, and thus the point at which we would consider the stock an extremely attractive purchase. Conversely, consider selling is the price at which a stock would have a 1 star rating, at which point we'd consider the stock overvalued, with low expected returns relative to its risk.

Stewardship Grades

Our corporate Stewardship Rating represents our assessment of management's stewardship of shareholder capital, with particular emphasis on capital allocation decisions. Analysts consider companies' investment strategy and valuation, financial leverage, dividend and share buyback policies, execution, compensation, related party transactions, and accounting practices. Corporate governance practices are only considered if they've had a demonstrated impact on shareholder value. Analysts assign one of three ratings: "Exemplary," "Standard," and "Poor." Analysts judge stewardship from an equity holder's perspective. Ratings are determined on an absolute basis. Most companies will receive a Standard rating, and this is the default rating in the absence of evidence that managers have made exceptionally strong or poor capital allocation decisions.