

Last Price Fair Value **Consider Buy Consider Sell** Uncertainty Economic Moat™ Moat Trend™ Stewardship **Morningstar Credit Rating Industry Group** 73.93 USD 80.00 USD 56 00 usp 108 00 usp Medium Wide Stable Standard Communication Equipment

Qualcomm's Analyst Day Highlights Near-Term China Issues, but Solid Underlying Long-Term Growth

See Page 2 for the full Analyst Note from 19 Nov 2014

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The primary analyst covering this company does not own its stock.

Research as of 19 Nov 2014 Estimates as of 06 Nov 2014 Pricing data through 05 Jan 2015 Rating updated as of 05 Jan 2015

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

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Investment Thesis 06 Nov 2014

Qualcomm is the innovator of CDMA network technology, the backbone of all 3G networks, and we view its CDMA intellectual property portfolio as the source of its wide economic moat. Essentially, phones are unable to connect to 3G networks without paying a royalty (about 3%-5% of the price of the handset) to the company. As more 3G-capable smartphones hit the market and carriers expand their 3G networks, we think Qualcomm is poised for strong licensing revenue growth over the next few years. Qualcomm doesn't have the same dominant IP portfolio in 4G technologies like LTE, but it has generated enough essential patents to enable it to strike new deals with many large handset makers. More important, for at least the next decade, the overwhelming majority of 4G handsets will probably be backward-compatible with 3G technologies, enabling Qualcomm to collect higher 3G royalty rates.

We view Qualcomm's chip segment as less moaty, but still a strong business. We anticipate solid revenue growth as the smartphone market expands, allowing Qualcomm to sell more advanced processors and additional chip content into these high-end devices. Qualcomm is present in most high-end smartphones today, securing the sole baseband chip supplier position in Apple's iPhones and iPads, while selling integrated Snapdragon processors into Samsung's 4G-capable Galaxy phones, other high-end Android models, and all Windows Phones. We model relatively stable market share from Qualcomm's chip business. Intel looms as a major threat in processors, and we see some risk that Samsung vertically integrates even further, leaving fewer opportunities for Qualcomm and others to sell mobile processors to the handset titan. However, we also think Qualcomm's strong relationships with handset vendors, experience in 4G LTE baseband chips (where the firm has a two-year time-to-market lead) and ability to integrate both the application processor and baseband functions into a single Snapdragon chip should help the firm fend off a host of competitors in the years ahead. We think the threats of Intel and Samsung pose greater risk to lesser players in the mobile space.

Vital Statistics	
Market Cap (USD Mil)	122,916
52-Week High (USD)	81.97
52-Week Low (USD)	67.67
52-Week Total Return %	3.6
YTD Total Return %	-0.5
Last Fiscal Year End	30 Sep 2014
5-Yr Forward Revenue CAGR %	5.0
5-Yr Forward EPS CAGR %	5.2
Price/Fair Value	0.92
Valuation Summary and Forecasts	

Valuation Summary and Forecasts													
Fiscal Year:	2013	2014	2015(E)	2016(E)									
Price/Earnings	14.9	14.0	14.2	12.2									
EV/EBITDA	11.9	12.1	11.5	10.1									
EV/EBIT	13.6	139.5	13.2	11.3									
Free Cash Flow Yield %	6.8	6.3	7.2	8.0									
Dividend Yield %	1.8	2.1	2.3	2.5									

Financial Summary and Forecasts (USD Mil)													
	Fiscal Year:	2013	2014	2015(E)	2016(E)								
Revenue		24,866	26,487	27,611	30,123								
Revenue YoY %		30.1	6.5	4.3	9.1								
EBIT		7,230	7,550	7,976	9,307								
EBIT YoY %		27.2	4.4	5.6	16.7								
Net Income, Adjuste	d	7,911	9,032	8,606	9,756								
Net Income YoY %		22.4	14.2	-4.7	13.4								
Diluted EPS		4.51	5.27	5.20	6.04								
Diluted EPS YoY %		21.5	16.8	-1.3	16.0								
Free Cash Flow		5,636	4,709	7,058	8,148								
Free Cash Flow YoY	%	157.7	-16.4	49.9	15.4								

Historical/forecast data sources are Morningstar Estimates and may reflect adjustments. Analyst Note: EPS on a Non-GAAP basis, excludes SFAS 123 Stock Comp Exp

Profile

Qualcomm develops and licenses wireless technology and manufactures semiconductors for mobile phones. The company's key patents revolve around CDMA technology, a standard in wireless communications and the backbone of all 3G networks. In turn, Qualcomm's CDMA IP is licensed by virtually all handset makers. The firm is also the world's largest wireless chipmaker, supplying many leading handset makers with cutting-edge processors, and holds a dominant market share position in 4G LTE chipsets.



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73.93 USD	80.00 USD	56.00 USD	108.00 USD	Medium	Wide	Stable	Standard	_	Communication Equipment

Morningstar Analysis

Qualcomm's Analyst Day Highlights Near-Term China Issues, but Solid Underlying Long-Term Growth 19 Nov 2014

We came away from Qualcomm's analyst day with continued confidence in the health of the firm's long-term business model, and in our wide moat rating. We still view the firm's shares as modestly undervalued while it awaits resolution to China's antitrust investigation, and as it struggles to collect royalty revenue from Chinese devicemakers in the meantime. While company executives are a bit more pessimistic about long-term revenue growth, we think that such a downtick is a more realistic expectation of future performance, and is already more than priced into the company's shares. We are likely to maintain Qualcomm's fair value estimate and moat rating

Its long-term revenue forecast was revised downward to the 8%-10% range, from an estimate of at least 10% provided last year, but given licensing headwinds in China and modestly faster handset average selling price declines, we view the new revenue forecast as reasonable. Earnings per share are forecast to rise at or above this 8%-10% range in the long term, thanks to operating leverage and reduced share count. Qualcomm's outlook for long-term 3G/4G total reported device sales growth in the high-single digits, with midteens unit growth offset by a low-to-mid-single-digit ASP declines, is achievable, in our view, and in line with our previously published expectations.

We received little insight into Qualcomm's legal issues, other than comments that the firm's dispute with a large Chinese OEM (which has made up part of the firm's royalty shortfall) may be resolved independently of, and perhaps before, China's antitrust ruling. Perhaps the brightest comment around the China investigation came from CEO Steve Mollenkopf, who advised investors to view the inquiry as "an old-fashioned regulatory investigation." This comment is consistent with our thesis that, more likely than not, Qualcomm will be able to navigate past these regulatory headwinds in China and return to a strong, stable worldwide licensing business model.

Qualcomm's long-term financial forecasts were relatively in line with our expectations. We thought that the firm would announce an accelerated or increased buyback program beyond the \$4.6 billion of share repurchases that remain authorized, but no such program was announced. Instead, Qualcomm will selectively and opportunistically buy back shares. The firm did maintain its plans to distribute 75% of free cash flow to shareholders and grow its dividend faster than earnings (which are again expected to grow at or above an 8%-10% CAGR). Qualcomm is also likely to take on debt down the road to fund future buybacks and dividend increases, and may tap into the commercial paper market this year to establish itself in the debt market.

Qualcomm also maintained long-term QCT operating margins in the 20%-22% range, despite a fiscal 2015 forecast of 18%-20%. We remain skeptical that Qualcomm will reach QCT operating margins in excess of 20% in the long term. The firm may see operating leverage in the long term as sales into both smartphones and adjacent opportunities (like tablets, PCs, automotive infotainment, and other products as part of the Internet of Things) rise faster than operating expenses. However, we also foresee some pricing pressure in the long term due to intense competition in the wireless space and perhaps a less favorable chip product mix toward processors used in lowerend devices.

That said. Qualcomm did indicate that it will invest in the development of ARM-based server processors, competing directly with firms like Broadcom, Cavium, and AMD. The firm is currently engaged with various partners today, but the company hinted that server revenue might not move the revenue needle for a few more years. Qualcomm indicated that its scale and investments in leading-edge technology nodes in smartphone processors can be extended into the



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server processor market, and while it's far too early to call a winner in the ARM-based server processor battle, we certainly think that Qualcomm has a chance to emerge as a leader. To the extent that Qualcomm can gain traction in this market and generate much higher chip ASPs (and likely higher gross margins) than in Snapdragon mobile processors, the firm might be able to exceed our operating margin targets and reach or exceed its 20%-22% long-term target after all.

We are a bit more comfortable about Qualcomm's expectation that long-term handset ASP declines will moderate and, in particular, Qualcomm's prior comments that it expects emerging-market customers to trade up to more advanced smartphones in the future. Surveys run by the firm indicate that 70% of customers expect to pay more for their next smartphone than their current one. Given the increasing importance of smartphones as a part of our everyday lives, especially as it is a consumer's only mode of access to the Internet in many emerging markets, smartphones may become a greater share of consumer wallets over time. One such telling statistic provided by Qualcomm indicates that emerging-market customers are

willing to spend 20%-40% of their income on a smartphone.

Outside of possible trade-ups, Qualcomm also anticipates Chinese OEM consolidation (still an opaque topic) could be a net positive if it were to occur, as it could reduce long-term ASP pricing pressure. The company also thinks that handset market share shifts (such as customers buying a \$350 smartphone from Xiaomi instead of \$650 devices from Samsung) will be an ongoing headwind through the end of fiscal 2015, but the firm doesn't foresee ongoing negative mix shifts at the high end of the market in the long term. Ultimately, emerging-market customers may be opting for cheap 4G smartphones today. However, longer term, those same customers may not settle for sub par user experiences on these devices, which should help to prevent fiscal 2015's projected 9%-10% ASP decline from extending itself too far into the future.

Another encouraging sign for Qualcomm was its comments around how long-term ASP declines within the broader smartphone industry may not have a one-to-one effect on long-term QTL revenue. The first issue relates to royalty caps already in place with OEMs. For example, Qualcomm may have an agreement with an OEM to collect 3% of the price of the device up to, say, a price of \$500, even if the phone sells for \$650. Thus, the smartphone industry may see pricing pressure at the high end that Qualcomm may not see in revenue (i.e., a smartphone price cut from \$650 to \$550 is bad for the industry but has no effect on QTL revenue). Second, Qualcomm has some royalty agreements with OEMs (Nokia and Samsung being the most notable) where firms paid higher up-front licensing fees in exchange for lower ongoing royalty rates. If Samsung were to continue to lose significant market share in smartphones, then overall royalty rates per device may rise.

Finally, we also gained greater insight into the firm's 5G development efforts. Qualcomm sees early 5G progress as going down two paths. The first is data speed improvements



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made in differing types of spectrum and technologies. On this front, the firm's acquisition of 60 Ghz specialist Wilocity may help the firm down this path. The second path is leading to ongoing improvements in data speeds being made on traditional networks and through signal processing like OFDMA, the backbone of 4G networks. The good news for Qualcomm is that 5G development down this path isn't based on a brand-new type of signal processing, so improvements in 5G technologies can be applied to 4G networks as well, thus aiding Qualcomm and others down the path of LTE-Advanced and other, more advanced 4G networks.

Valuation, Growth and Profitability 06 Nov 2014

We are reducing our fair value estimate to \$80 per share from \$85 because of softer near-term and medium-term handset pricing that may result in royalty revenue collections below our prior assumptions. Our fair value estimate implies fiscal 2015 (ending September) price/earnings and price/free cash flow of 15 times each. After excellent revenue growth of 36%, 28%, and 30% in fiscal 2011, 2012, and 2013, respectively, Qualcomm's growth stalled at 6.5% in fiscal 2014; we forecast 4% for fiscal 2015. Qualcomm's chip growth has been quite strong, but royalty collection problems in China will offset some of this robust growth in the near term. In the longer term, we anticipate the company generating decent revenue growth, particularly as 3G CDMA-based technologies gain further adoption and replace older wireless standards. We project average revenue growth of 5% from fiscal 2015 to fiscal 2018, down from our prior projection of 7%, due to stiffer price competition in chips and handsets. We're encouraged by Qualcomm's chip growth, not only from premium smartphone customers like Apple, but also from a host of Chinese OEMs, as the firm's products are key components in high-end, midrange, and low-end handsets alike. Although near-term handset average selling prices are weakening due to intense price competition for low-end smartphones, we believe recent shortfalls will moderate. In light of China's NDRC investigation, we model that the firm will have to pay a \$1.2 billion fine in fiscal 2015, but we continue to expect Qualcomm to outlast these regulatory concerns in the long term.

Qualcomm's gross margins have steadily declined in recent years, as the firm's chip business grew at a faster pace than its higher-margin licensing business and as chip gross margins sagged because of intense competition, strong buying power from leading handset makers like Apple, and a less favorable mix shift toward chips used in lower-cost smartphones sold in emerging markets. We continue to model gross margins around 60%, plus or minus 1%, in fiscal 2015 and beyond. Qualcomm has reined in operating expenses in fiscal 2014, and we project that QCT operating margins will hover in the high teens in the near term but ultimately fall to the midteens a few years out, due to further chip pricing competition. Our fair value uncertainty rating for Qualcomm is medium, given the company's size and scale in the chip industry.

Scenario Analysis

Our base-case scenario for Qualcomm projects average revenue growth of 5% and average operating margins of 29% per year over our five-year forecast period, as Qualcomm profits from global 3G wireless adoption. We project 4% average annual growth in chip sales and 7% in licensing revenue over our forecast period, as higher handset and chip volume is offset by ASP declines.

We've run a variety of scenario analyses where we make modest positive and negative adjustments to our projections for Qualcomm's chip market share and pricing, handset industry growth, the pace of 3G/4G device adoption, and handset ASPs. In our most bullish scenario, where we assume that all of these various growth rates are mildly better than our base-case assumptions, we project strong chip growth, a resolution to near-term headwinds



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Morningstar Analysis

associated with Chinese royalty collections, and strong ongoing 3G/4G device adoption. In this bullish scenario, we project average annual revenue growth of 8.5% per year over our five-year forecast period, as well as average operating margins of 32%, and our fair value estimate is \$100 per share.

Conversely, in our bearish scenario, chip unit shipment growth slows while chip prices fall at an even faster pace, Chinese licensing headwinds persist, and 3G/4G royalty units grow at a pace below the overall smartphone industry. Under these bearish assumptions, we project flattish revenue and 23% average operating margins over the next five years, and our fair value estimate is only \$51 per share.

In light of recent uncertainty around China's NDRC investigation, we've run several additional scenarios around potential outcomes. The most bearish, but albeit remote, potential outcome for Qualcomm is if the firm suffers from contagion where not only would the NDRC invalidate Qualcomm's IP and prevent the firm from earning royalty revenue in the region, but the firm could also lose market share or perhaps even exit the chip side of the business in China, see further royalty revenue losses as other government agencies would also try to nullify Qualcomm's IP, or both. In the unlikely chance that Qualcomm's business would crumble further outside of Chinese royalties, we estimate that our fair value could fall below our \$51 bear-case scenario if all of these disastrous events were to occur. Again, we consider this doomsday scenario to be highly unlikely.

Economic Moat

Qualcomm enjoys a wide economic moat by virtue of its significant IP assets, as it holds a near monopoly on essential patents used in CDMA technology, a major wireless communications standard that enables mobile devices to send and receive voice or data. The company charges a royalty fee as a predetermined percentage of the price of each CDMA phone sold. As all 3G wireless networks are based on CDMA technology, Qualcomm will probably be able to reap royalty fees on a substantial majority of smartphones sold in the 3G era.

Qualcomm also holds many essential patents for 4G OFDMA technologies, which are used in both FD-LTE and TD-LTE networks. Qualcomm doesn't have the same dominant IP position for 4G technologies as 3G, so the firm is likely to earn lower royalty rates on single-mode 4G phones than 3G phones over time. However, Qualcomm owns enough essential 4G patents to earn royalties that should be somewhat close to 3G rates in the long term. The firm has hinted that the drop-off in royalty revenue on pure 4G devices versus multimode 3G/4G devices might be only about 5%. More important, virtually all 4G phones today are multimode and backward-compatible with 3G, enabling the company to earn relatively higher 3G royalties over time. By Qualcomm's estimates, in 2018, more than 95% of 4G handsets in the market will still be backward-compatible with 3G. Looking 10 years out and even further, when 4G is a mature network and 5G (whatever it may be) is the current industry standard, we would still anticipate backward-compatibility with 4G and even 3G networks, thus allowing Qualcomm to earn healthy royalty revenue at over 85% operating margins well into the future.

We should note that Qualcomm did not strike licensing deals with all Chinese OEMs pertaining to 3G and 4G technologies, and as some of these upstarts emerged to be bigger players in the industry than the firm predicted, Qualcomm has been caught scrambling in the near term to enforce its IP with these remaining players. As these handset makers step up to use more advanced wireless technologies like 4G LTE in the long term, however, we think Qualcomm will eventually strike licensing deals with virtually every significant handset maker and, in our view,



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Morningstar Analysis

does not face a substantial long-term risk that it will not be rewarded for its IP portfolio.

Moat Trend

Our moat trend for Qualcomm is stable. Qualcomm's control over 3G intellectual property puts the firm in a powerful position over handset makers that are essentially forced to enter into royalty agreements with the firm. Qualcomm also has a substantial 4G patent portfolio that should allow the firm to earn royalties on the sale of many 4G devices in the future. We anticipate that Qualcomm will be able to earn extremely high-margin royalty income well into the future because the vast majority of 4G devices over the next several years will be multimode and backward-compatible with 3G networks. Also, Qualcomm may earn only a slightly lower royalty rate on single-mode 4G devices that don't have 3G connectivity. Even looking out 10 and 15 years into the future, since 4G merely provides for faster data usage than 3G, we anticipate that carriers may still leave 3G networking infrastructure in place that far out because 3G data rates might still be good enough in rural areas and emerging markets. By comparison, 2G network infrastructure, as well as chipsets with 2G backward-compatibility, are still used today, even though carriers continue to rush to replace these 2G networks because they don't offer robust data usage that allows carriers to collect greater subscriber fees. We anticipate that a decade from now, when 5G is mainstream and 4G is aging, there will still be less of a relative urgency to replace outdated 3G infrastructure because data rates may still be adequate. We recognize that there will be a day when 3G is completely antiquated and Qualcomm can no longer profit from its CDMA IP used in all types of 3G networks. However, we tend to think it could be 20 years into the future before we see a majority of devices that will be so advanced that they will no longer be backward-compatible with 3G networks.

Qualcomm's licensing business faces some near-term risks

associated with China's National Development and Reform Commission's investigation into the firm's practices, as well as difficulties collecting revenue from some Chinese handset manufacturers. Until we receive further clarity or a decision from the NDRC, we are likely to maintain a stable moat trend rating for Qualcomm. The firm has adequately navigated government inquiries in the past, and although we wouldn't rule out the possibility of a damaging, landmark NDRC decision, such a decision would be unprecedented for Qualcomm. We continue to believe that the most likely outcome, at this point, is the NDRC hitting Qualcomm with a one-time fine and potentially forcing the firm to renegotiate with Chinese handset makers at less favorable terms. However, we don't foresee Qualcomm's IP being completely invalidated in the region.

Also, in the aftermath of the NDRC investigation, new inquiries have arisen from the U.S. Federal Trade Commission and the European Commission. We consider both investigations to be comparable to other government requests in the past, and the NDRC investigation probably drove these other government agencies to look into Qualcomm's business. However, we don't foresee a resolution to these two inquiries for years and suspect that any penalty will be a one-time fine (similar to other results in the past). Unless we start to see evidence to the contrary or a shocking negative ruling against the firm, we remain inclined to maintain our stable moat trend rating.



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Bulls Say/Bears Say

Bulls Say

- Qualcomm collects royalty income on the substantial majority of 3G and 4G handsets sold, as it holds virtually all essential patents used in these networks.
- Qualcomm is the clear market leader in wireless chips, with a dominant share in 4G LTE chipsets and design wins into virtually every premium handset on the market today.
- Qualcomm's Snapdragon chips, which include both the processor needed to run a phone's operating system and baseband functionality needed to connect the phone to wireless networks, have unmatched integration today.

Bears Say

- China's investigation into Qualcomm's licensing business and the firm's difficulties in collecting royalty revenue from Chinese handset makers adds uncertainty and risk to what is otherwise a steadily growing business.
- Although most 4G phones will probably be backward-compatible with 3G networks for years to come, a small portion of phones may emerge as 4G-only and Qualcomm may earn lower royalty income on the sale of such devices.
- Qualcomm's licensing revenue has suffered from time to time due to currency effects, price competition, and an unfavorable handset product mix.

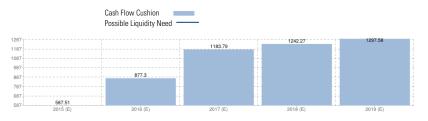


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Credit Analysis

Five Year Adjusted Cash Flow Forecast (USD Mil)						
	2015(E)	2016(E)	2017(E)	2018(E)	2019(E)	
Cash and Equivalents (beginning of period)	32,022	32,933	34,818	36,670	38,494	
Adjusted Available Cash Flow	2,054	3,037	3,064	3,082	3,028	
Total Cash Available before Debt Service	34,076	35,969	37,881	39,753	41,523	
Principal Payments	_	_	_	_	_	
Interest Payments	_	_	_	_	_	
Other Cash Obligations and Commitments	-58	-41	-32	-32	-32	
Total Cash Obligations and Commitments	-58	-41	-32	-32	-32	

Cumulative Annual Cash Flow Cushion



Adjusted Cash Flow Summary

	USD Millions	Commitments	
Beginning Cash Balance	32,022	16,421.5	
Sum of 5-Year Adjusted Free Cash Flow	14.265	7.315.2	
Sum of Cash and 5-Year Cash Generation	46,287	23,736.7	
Revolver Availability	_	_	
Asset Adjusted Borrowings (Repayment)	_	_	
Sum of Cash, 5-Year Cash Generation, Revolver and Adjustments	46,287	23,736.7	
Sum of 5-Year Cash Commitments	-195	_	

Credit Rating Pillars-Peer Group Comparison

	QCOM	Sector	Universe
Business Risk	2		
Cash Flow Cushion	1	_	_
Solvency Score	1	_	_
Distance to Default	1	_	_
Credit Rating	_	_	_

Source: Morningstar Estimates

Note: Scoring is on a scale 1-10, 1 being Best, 10 being Worst

Financial Health & Capital Structure

Qualcomm's financial health is exceptional. As of September, Qualcomm had \$32.0 billion in cash and investments. It recently raised its dividend 20% to \$0.42 per quarter, which provides a yield around 2%. The firm stated intentions to return 75% of its free cash flow to shareholders and has aggressively bought back stock in recent quarters, totaling \$4.55 billion in fiscal 2014 (the firm is authorized to make \$4.6 billion in buybacks as of September). Since the majority of Qualcomm's cash resides overseas, we wouldn't rule out the possibility of the company taking on debt in order to fund further dividends and buybacks at some point. However, we doubt the firm will become highly leveraged, as we expect it to retain its massive cash cushion in order to invest in new product lines and perhaps make a large acquisition or two.

Enterprise Risk

Qualcomm faces some near-term risks associated with China's NDRC investigation into its licensing practices. This investigation may have empowered some of Qualcomm's Chinese-based licensees to underreport or refuse to pay royalty revenue to the firm in the near term. We ultimately anticipate that these matters will be settled in the long term. However, Qualcomm may continue to struggle to collect the royalty revenue it deserves in the near term. There is also a risk, albeit remote in our view, that the NDRC hands down some sort of draconian ruling that would nullify Qualcomm's ability to collect royalties in the region. Such a ruling could even contaminate Qualcomm's royalty business in other emerging markets that these Chinese OEMs sell into, or perhaps even extend Qualcomm's chip market share in the region as well. Again, we think the chances of such a catastrophe are remote at this point. Outside China, Qualcomm's chip business could face intense competition from Intel, Samsung, MediaTek, and others, which could lead to market share losses or pricing pressure that drives down chip gross margins. We also see a longer-term risk



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Credit Analysis

that Samsung, in particular, increases its vertical integration by solely relying on internally developed chipsets for its smartphones and tablets over time.In licensing, Qualcomm's royalty revenue is subject to the highly competitive nature of the handset industry. The firm will collect a portion of the price of every CDMA-based handset sold, but it is subject to changes in product mix in the handset industry, as well as the pricing decisions of both handset makers and carriers, which may or may not give incentives to customers to switch to higher-end smartphones. As firms develop new wireless technologies and IP, Qualcomm probably won't be able to replicate the dominant IP position that it currently has in CDMA. Finally, new government investigations into the firm's licensing business may arise from time to time.

Management Activity



Qualcomm Inc QCOM (NAS) | **

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Management & Ownership

Name	Position	Shares Held	Report Date*	InsiderActivity
DEREK K. ABERLE	President	54,342	30 Nov 2014	_
PAUL E. JACOBS	Director	47,693	30 Nov 2014	26,516
STEVEN M. MOLLENKOPF	CEO/Director, Director	41,110	11 Mar 2014	_
MARGARET (PEGGY) L. JOHNSON	Executive VP, Subsidiary/President, Divisional	24,320	01 Jul 2014	_
JAMES H. THOMPSON	Executive VP, Subsidiary	23,303	20 Nov 2014	_
DR. DANIEL L. SULLIVAN, PHD	Executive VP, Divisional	9,469	04 Dec 2014	16,862
RAYMOND V. DITTAMORE	Director	5,384	27 Mar 2014	_
MARC I. STERN	Director	5,112	31 Dec 2013	_

^{*}Represents the date on which the owner's name, position, and common shares held were reported by the holder or issuer.

Fund Ownership				
Top Owners	% of Shares Held	% of Fund Assets	Change (k)	Portfolio Date
Vanguard Total Stock Mkt Idx	1.68	0.54	109	30 Nov 2014
SPDR® S&P 500 ETF	1.18	0.67	-121	02 Jan 2015
Vanguard Five Hundred Index Fund	1.08	0.66	226	30 Nov 2014
Vanguard Institutional Index Fund	1.02	0.66	25	30 Nov 2014
PowerShares QQQ	0.84	2.56	-21	02 Jan 2015
Concentrated Holders				
Fidelity® Select Comms Equip Port	0.04	18.29	96	30 Nov 2014
Fidelity Advisor® Communications Equip	_	18.14	7	30 Nov 2014
Acacia Premium FI	_	13.41	12	30 Jun 2014
Fidelity® Select Wireless Portfolio	0.02	9.47	_	30 Nov 2014
Krakatoa Inversions SICAV	_	9.43	6	30 Jun 2014
Institutional Transactions				
Institutional Transactions Top 5 Buyers	% of Shares Held	% of Fund Assets	Shares Bought/ Sold (k)	Portfolio Date
			Bought/	Portfolio Date 30 Sep 2014
Top 5 Buyers	Held	Assets	Bought/ Sold (k)	
Top 5 Buyers Walter Scott & Partners Limited	Held 0.59	Assets 3.73	Bought/ Sold (k) 9,800	30 Sep 2014
Top 5 Buyers Walter Scott & Partners Limited BB&T SECURITIES, LLC United Association Pension Fund Local 13 Pension	Held 0.59	Assets 3.73 1.57	Bought/ Sold (k) 9,800 8,086	30 Sep 2014 30 Sep 2014
Top 5 Buyers Walter Scott & Partners Limited BB&T SECURITIES, LLC United Association Pension Fund Local 13 Pension Fund	0.59 0.54	Assets 3.73 1.57 0.16	Bought/ Sold (k) 9,800 8,086 7,274	30 Sep 2014 30 Sep 2014 31 Dec 2008
Top 5 Buyers Walter Scott & Partners Limited BB&T SECURITIES, LLC United Association Pension Fund Local 13 Pension Fund ING Investment Management LLC	0.59 0.54 —	Assets 3.73 1.57 0.16 1.13	Bought/ Sold (k) 9,800 8,086 7,274 5,778	30 Sep 2014 30 Sep 2014 31 Dec 2008 30 Sep 2014
Top 5 Buyers Walter Scott & Partners Limited BB&T SECURITIES, LLC United Association Pension Fund Local 13 Pension Fund ING Investment Management LLC T. Rowe Price Associates, Inc.	0.59 0.54 —	Assets 3.73 1.57 0.16 1.13	Bought/ Sold (k) 9,800 8,086 7,274 5,778	30 Sep 2014 30 Sep 2014 31 Dec 2008 30 Sep 2014
Top 5 Buyers Walter Scott & Partners Limited BB&T SECURITIES, LLC United Association Pension Fund Local 13 Pension Fund ING Investment Management LLC T. Rowe Price Associates, Inc.	0.59 0.54 — 0.40 1.30	Assets 3.73 1.57 0.16 1.13 0.35	Bought/ Sold (k) 9,800 8,086 7,274 5,778 5,534	30 Sep 2014 30 Sep 2014 31 Dec 2008 30 Sep 2014 30 Sep 2014
Top 5 Buyers Walter Scott & Partners Limited BB&T SECURITIES, LLC United Association Pension Fund Local 13 Pension Fund ING Investment Management LLC T. Rowe Price Associates, Inc. Top 5 Sellers Wellington Management Company, LLP	Held 0.59 0.54 — 0.40 1.30	Assets 3.73 1.57 0.16 1.13 0.35	Bought/ Sold (k) 9,800 8,086 7,274 5,778 5,534	30 Sep 2014 30 Sep 2014 31 Dec 2008 30 Sep 2014 30 Sep 2014 30 Sep 2014
Top 5 Buyers Walter Scott & Partners Limited BB&T SECURITIES, LLC United Association Pension Fund Local 13 Pension Fund ING Investment Management LLC T. Rowe Price Associates, Inc. Top 5 Sellers Wellington Management Company, LLP Jennison Associates LLC	Held 0.59 0.54 — 0.40 1.30	Assets 3.73 1.57 0.16 1.13 0.35	Bought/ Sold (k) 9,800 8,086 7,274 5,778 5,534 -11,695 -5,262	30 Sep 2014 30 Sep 2014 31 Dec 2008 30 Sep 2014 30 Sep 2014 30 Sep 2014 30 Sep 2014

Management 06 Nov 2014

We view Qualcomm as a well-run organization and good stewards of shareholder capital. Steve Mollenkopf took over the CEO role in March after more than 20 years with the company, proving himself as a capable leader during his tenure running Qualcomm's chip division, QCT. Mollenkopf took over from Paul Jacobs, the son of Qualcomm cofounder and former chairman Irwin Mark Jacobs, who served as CEO since 2005. Paul Jacobs remains executive chairman, a role he has held since 2009.

Qualcomm has done a good job of distributing cash to shareholders and intends to distribute 75% of free cash flow to shareholders. The company bought back \$4.55 billion of stock in fiscal 2014 and is still authorized to buy back \$4.6 billion more as of September. Qualcomm also recently raised its dividend 20% to \$0.42 per share, offering a solid 2%-plus yield in the semiconductor industry.

Qualcomm made a notable acquisition of Atheros in 2011 and seeks to diversify its chip business into new end markets, but its M&A strategy has been disciplined thus far. Qualcomm has historically spent some of its excess cash on some high-risk, high-reward ventures, such as FloTV and Mirasol. Neither venture was especially profitable, but at least these flops were somewhat salvageable, as Qualcomm's investment in mobile TV led to the acquisition of wireless spectrum that the company was able to sell at a profit to AT&T. It appears that Qualcomm is putting this excess cash to better use, via either distributions to shareholders or expanding R&D efforts in its core chip and licensing businesses.



Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Morningstar Credit Rating	Industry Group
73.93 USD	80.00 USD	56.00 USD	108.00 USD	Medium	Wide	Stable	Standard	_	Communication Equipment

Analyst Notes

Qualcomm Gives Investors a Disappointing Forecast for 2015 As China Struggles Press On 05 Nov 2014

Qualcomm reported fiscal fourth-quarter results and provided investors with forecasts for both the December guarter and fiscal 2015 that were all below our expectations. While the company's well-publicized struggles in collecting royalty revenue in China continued along as we anticipated, the ongoing shift toward lower-priced handsets sold in China appears to be weighing on both chip revenue and royalty revenue for those devices where Qualcomm is still collecting royalties. We may reduce our fair value estimate by a few dollars due to overall lower handset prices that will further limit royalty revenue, but at prices in the low \$70 range, we still consider Qualcomm's shares modestly undervalued.

We still believe that Qualcomm's stock currently prices in an overly bearish scenario around future Chinese royalty collections. We're not yet alarmed by additional investigations by the U.S. and European Union, as the firm has a solid history of navigating past such issues in the past. We don't anticipate that either new investigation will hinder Qualcomm's underlying business. Qualcomm's chip revenue declined 2% sequentially, as decent unit sales were offset by a 7% sequential price decline, as the firm sold a less favorable mix of chips into China and lower-priced baseband chips used in Apple's iPhone. Licensing revenue of \$1.8 billion was flat sequentially, and in line with expectations. Qualcomm's fiscal 2015 forecast was disappointing. Revenue is expected to rise only 1% to 9%, sequentially. Chip revenue is expected to rise 3% to 9%, sequentially. While we expect strong unit sales growth and resilient market share, ongoing price competition may weigh on the top line. Meanwhile, licensing revenue should continue to be restrained by China. The firm anticipates 15% unit growth in 3G and 4G device sales, but only 3% revenue growth (at the midpoint) as the company may fail to fully participate in the strong growth in emerging market smartphones.

QCT unit sales of 236 million were a shade below the midpoint of the firm's guidance. We suspect that strong sales into Apple and Chinese OEMs was offset by weakness and inventory corrections at Samsung, and we should note that Qualcomm's inventory rose by 23% since the prior quarter. Samsung's share loss in low- and mid-range handsets, due to intense competition from Chinese OEMs, also likely weighed on QCT's chip average selling price. We remain encouraged by Qualcomm's call for QCT operating margins of 18% to 20% in fiscal 2015, despite such pricing pressure. We still view the firm as doing an excellent job of fending off other wireless chipmakers in this brutally competitive market.

We were most disappointed about Qualcomm's comments around its licensing business, and especially handset ASPs. ASPs on handsets that make up Qualcomm's royalty base were relatively flat in fiscal 2014. However, the firm noted that, if it were able to collect on all Chinese OEM handsets, ASPs would have been 6% lower, or down to \$211 per device rather than Qualcomm's reported ASP of \$225. Further, Qualcomm expects global ASPs (so including the Chinese devices where Qualcomm isn't collecting revenue) to dip 9% to 10% next fiscal year. Besides hefty ongoing price competition in China, Qualcomm is also likely hampered by a relatively stronger U.S. dollar. Any reduction to our fair value estimate will mostly stem from lower long-term projections around handset ASPs, but we don't think it's prudent to project high single digit handset price cuts well into the future. We suspect that handset pricing in emerging markets will find a bottom at some point, while Qualcomm suggested that Chinese customers may trade up to higherpriced smartphones in the future.

Additionally, we're a bit concerned about the firm seeing higher sales of three-mode handsets (on which Qualcomm does not collect royalty revenue) relative to five-mode



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Analyst Notes

devices that include WCDMA capabilities that allow Qualcomm to collect royalties. We previously wrote that the shift to five-mode devices would aid Qualcomm's collection efforts (prior to any government investigations or licensee disputes) so high ongoing demand for less-global threemode devices could be a secular headwind for the firm.

We didn't receive much of an update about China's National Development and Reform Commission's (NDRC) investigation into the firm, other than comments that collections from a licensee in dispute aren't getting worse. Ultimately, we still tend to view the most likely outcome as a one-time fine and, perhaps, a reduction in royalty rates charged to Chinese OEMs that will likely cause QTL revenue growth to pause. Yet we still view the secular trend toward 3G and 4G smartphone adoption as a strong growth driver for the firm in the long-run. Newly disclosed investigations by the U.S. Federal Trade Commission into licensing terms and the European Commission into rebates and incentive around baseband chip sales may have also come about because of the NDRC's well publicized investigation. However, we're not scared off by either inquiry as of yet, as typical investigations by government agencies usually take years to play out and haven't typically posed the threat of material changes to Qualcomm's business practices, unlike the NDRC investigation that we believe has overly spooked some investors.

Qualcomm Outbids Microchip for CSR in \$2.5 Billion Deal; Maintaining Fair Value Estimates 15 Oct 2014

In a bit of a surprise move, Qualcomm outbid Microchip Technology to acquire U.K.-based Bluetooth chipmaker CSR for \$2.5 billion. Microchip had a deadline of today to make a revised offer for CSR after its initial offer was rejected in late August, but we don't foresee it trumping Qualcomm's bid or another buyer coming in. Given Microchip's history of rational, disciplined deals, we suspect the firm will walk away rather than engage in a bidding war. We will maintain our fair value estimates and moat ratings for both Qualcomm and Microchip.

CSR is likely to aid Qualcomm's efforts in diversifying its handset-centric business into the Internet of Things, while boosting the firm's connectivity chip portfolio and intellectual property. We view the 56.5% premium to CSR's share price as of Aug. 27 (the day before Microchip's initial offer) as a reasonable one to pay for this business, especially as Qualcomm will use overseas cash to fund the deal and such cash is not available to be paid out to U.S. shareholders by way of dividends or stock buybacks without the firm paying significant repatriation taxes. Nonetheless, we don't see the deal as a game-changing one for Qualcomm. The deal is a bit of a setback for Microchip, which was also looking to diversify into connectivity and expand its silicon content per customer in order to provide all-encompassing solutions to its broad array of industrial and automotive customers. We should note that Microchip was partnering with CSR on Bluetooth Smart module solutions before Microchip's initial offer, and it remains to be seen whether Qualcomm and Microchip will remain partners or become more direct competitors, especially if Qualcomm were to expand into low-power microcontrollers.

From a product standpoint, the deal should expand Qualcomm's presence with industrial customers, and CSR's customer relationships could allow Qualcomm to sell lowend embedded processors into a wider array of industries in the long term. Yet on the consumer side, the deal can only make Qualcomm a more direct rival to Broadcom in connectivity chips. Even though CSR's remaining core chip business pertains to automotive and high-end consumer applications (as the firm sold off its legacy handset-related chip product lines to Samsung in 2012), any patents or expertise that can aid Qualcomm's handset-related chip business, or perhaps lead to better integrated wireless baseband chips, could be a boon for Qualcomm. If Qualcomm were to emerge in a better position to steal one of



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Analyst Notes

Broadcom's connectivity chip design customers, like Apple or Samsung, the CSR deal would more than pay for itself almost instantly. We still believe Broadcom is relatively well entrenched with Apple at the moment, but the CSR deal does add slightly more risk that Qualcomm is on the hunt to steal Broadcom's key connectivity design wins in the long term.

Going forward, we guestion whether Microchip will be back in the hunt for connectivity-related acquisitions, build a Bluetooth business from scratch, retain its partnership with CSR, or forge a new one. We viewed Bluetooth connectivity as a greenfield area for Microchip, as it would have allowed the firm to sell additional chip content alongside its breadand-butter microcontroller designs, so we don't see the failed acquisition as a sign that Microchip will start to concede share in its core business or is in a significantly weaker market position than others. That said, in the near term, and for customers looking at a single chip supplier for their industrial designs, the underrated winner of the announcement (or the firm sighing a bit of relief) might be Texas Instruments, which remains an all-in-one shop that offers both MCUs and connectivity chips to industrial customers, all while remaining the world's largest analog chipmaker.

China Poses Greater Royalty Risk for Qualcomm, but Chip Demand Shines; Raising our Fair Value to \$85 24 Jul 2014

Qualcomm reported strong fiscal third-quarter results, boosted by robust chip demand that exceeded our expectations. The bigger news, however, came from Qualcomm's struggles in collecting royalty revenue in China, and the firm's disclosure that a loss is "probable" due to an investigation by the Chinese government over Qualcomm's licenses.

At this point, we think both factors represent modest risks, and perhaps pose a very slight threat of some sort of draconian measures that would cripple Qualcomm's businesses in China. Yet, we view both issues as navigable for Qualcomm in the long-term.

Meanwhile, Qualcomm's chip business (QCT) is firing on all cylinders as it continues to fend off all rivals in the LTE chip space, all while operating margins in this segment improve. Despite these risks, we'll likely raise our fair value estimate to \$85 per share on the back of QCT margin improvement. We view any sell-off from here as the possible start of an attractive buying opportunity. We also maintain Qualcomm's wide economic moat rating

QCT revenue was up 17% sequentially and chip unit shipments rose 20%, thanks to strong demand from Chinese OEMs. Higher sales levels and cost improvements drove QCT operating margins to rise 510 basis points sequentially to 22.5%, alleviating our prior concerns that QCT would fall short of its 20% operating margin target.

QTL revenue concerns us, down 12% sequentially as royalty collections on 252 million devices in the March quarter was a bit below industrywide estimates for the total smartphone market. Qualcomm does not have licensing deals with certain Chinese OEMs, believes that others are underreporting sales, and has a dispute with a separate licensee that has failed to pay altogether. Since the problem products are lower-priced phones, we think that China may provide near-term QTL headwinds and maybe even modest long-term ones, but not enough to offset the tremendous secular trend of ongoing smartphone adoption worldwide.

Qualcomm has consistently discussed its problems in collecting 3G TD-SCDMA revenue in China, and we previously concluded that QTL's net income may be 5% lower than what it could be if it were able to collect all TD-SCDMA revenue. However, Qualcomm's current problems in China extend beyond our prior work (and Qualcomm's prior



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Analyst Notes

disclosures) around TD-SCDMA revenue, as underreporting and the single licensee dispute appears to be on smartphones of all 3G/4G technologies, as well as pertaining to phones even sold outside of China. Historically, we think Qualcomm has done a decent job of ultimately collecting the royalties for which it is owed, so these two issues may not mean that this revenue will be off the table forever.

Separately, Qualcomm also discussed the issue of some Chinese OEMs not having single-mode TD-LTE licenses that is allowing them to avoid QTL royalties for the time being. Such firms are using 3-mode chipsets (4G TD-LTE, 3G TD-SCDMA, 2G GSM), and since Qualcomm does not own much GSM IP and TD-SCDMA IP has been disputable, the absence of a 4G TD-LTE license has given OEMs some leeway in skirting Qualcomm royalties. We are skeptical that Qualcomm will collect any of these royalties in the longterm, but again, this issue has been well discussed by the firm in the past and we calculate that it does not represent a material headwind to long-term QTL revenue. As China Mobile shifts its handset lineup toward smartphones that use 5-mode chipsets (thus including 4G FD-LTE and 3G WCDMA, the latter of which has been widely licensed and is a much less disputed 3G technology for Qualcomm), a greater number of OEMs will likely become licensees for the firm.

As a result of these issues, Qualcomm lowered its estimates for 3G/4G device sales in calendar 2014 (i.e., unit sales that make up Qualcomm's royalty revenue base) from 1.3 billion to a range of 1.04 billion-1.13 billion. At the midpoint, 3G/4G sales of 1.085 billion would represent a 17% decline in Qualcomm's royalty base, yet the firm expects only a 6%-9% revenue drop in calendar 2014 (8% in fiscal 2014) because these "lost" units are low-end smartphones with ASPs in the \$100 range, well below the firm's average ASP of \$230. We have incorporated this lost revenue and unit sales into

our valuation model. Beyond calendar 2014, we take a conservative stance where we model 8%-11% fewer 3G/4G devices, and 5%-6% less QTL revenue, each year than what we would have previously estimated due to China non-collections. We also do not explicitly model any catch up royalties, but think that a future lump sum payment or two from a settlement is probable.

We previously analyzed that QTL risked missing out on \$1.6 billion of total revenue and \$0.9 billion of total net income from 2014 to 2018 as long as TD-SCDMA was deployed and Chinese OEMs either failed to pay or failed to strike licensing deals with Qualcomm. Again, the firm's current problems extend beyond our prior calculations that solely relate to TD-SCDMA, so slippage may be higher. However, if Qualcomm can make itself whole from resolving its issues with underreporting OEMs and licensee disputes (and we think they someday can), then the only material remaining revenue at risk is from 3-mode chipsets, and we would still view our prior estimates as reasonable figures for royalties that Qualcomm may leave on the table over the next few years.

Separate from ongoing QTL revenue in China, the firm disclosed that a loss from the National Development and Reform Commission's (NDRC) investigation is "probable," but such amounts cannot be calculated. We are not very concerned about any sort of one-time penalty; even if the fine is the maximum of 10% of prior year revenue, and even if we use Qualcomm's total corporate revenue (rather than simply revenue from China, or from QTL, or licensing sales from only Chinese OEMs), a payment of \$2.5 billion would barely make a dent in the firm's \$32 billion cash balance (and especially since \$25.8 billion is already trapped in overseas accounts). That said, the NDRC investigation is important because it may be empowering other Chinese OEMs to underreport sales, hold off on striking TD-LTE licensing deals with Qualcomm, or both.



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Analyst Notes

The bigger NDRC issue, which we currently handicap as a very slight chance of a very devastating event, would be if Qualcomm's license agreements in China were invalidated in the region. Such a ruling could be more devastating if other markets made similar rulings, or if a drastic NDRC decision also somehow barred QCT as well. Again, we think such a decision is remote, but cannot be entirely ruled out.

We are raising our fair value estimate by \$5 to \$85 per share thanks to tremendous QCT unit sales growth and improving QCT profitability that was buried within the headlines of QTL concerns. We think it's important to consider that, despite China QTL concerns, Qualcomm maintained its full year revenue forecast of \$26.75 billion (at the midpoint) as better than expected QCT sales will offset any QTL headwinds. We are also impressed by Qualcomm's recent cost control efforts and supply chain improvements that led to 22.5% operating margins in the June quarter and a forecast for 20%-plus operating margins in the September quarter. In light of hefty chip sales made into the Chinese market and chip ASP declines of only 2% sequentially, gross margins likely held up well, if not improved, in the recent quarter, which we view as a terrific sign that Qualcomm's focus on Chinese chip sales may not lead to the demise of overall QCT profitability. We still do not model 20%-22% QCT operating margins in the long-term, which is the firm's target, but our new fair value incorporates a range in the high-teens to 20% range over the next few years, a couple of percentage points above our prior estimates. Finally, if we did not back out a portion of QTL revenue associated with China collection concerns, we would have likely raised our fair value for Qualcomm by another few dollars.



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Morningstar Analyst Forecasts

Fiscal Year Ends in September								F	orecast	
			3-Yea	r						5-Yea
Growth (% YoY)			Hist. CAGF		2012	2013	2014	2015	2016	Proj. CAGF
Revenue			21.0)	27.8	30.1	6.5	4.3	9.1	5.0
EBIT			13.7	7	10.5	27.2	4.4	5.6	16.7	5.9
EBITDA			12.0)	6.1	25.4	5.5	4.9	14.6	5.2
Net Income			18.7	7	19.7	22.4	14.2	-4.7	13.4	3.1
Diluted EPS			18.2	2	16.2	21.5	16.8	-1.3	16.0	5.2
Earnings Before Interest, after Ta	ax		44.7	7	97.5	46.7	4.5	9.3	15.3	6.3
Free Cash Flow			_		-435.2	157.7	-16.4	49.9	15.4	12.3
			3-Yea	r						5-Yea
Profitability			Hist. Avç]	2012	2013	2014	2015	2016	Proj. Avg
Operating Margin %			29.1	1	29.7	29.1	28.5	28.9	30.9	30.0
EBITDA Margin %			33.5	5	34.4	33.2	32.9	33.1	34.7	33.7
Net Margin %			33.2	2	33.8	31.8	34.1	31.2	32.4	31.6
Free Cash Flow Margin %			17.3	3	11.4	22.7	17.8	25.6	27.1	25.8
ROIC %			14.8	3	12.4	16.3	15.8	17.0	18.8	18.2
Adjusted ROIC %			29.7	7	26.1	31.2	31.9	34.7	39.0	<i>37.</i> 4
Return on Assets %			15.5	9	15.4	15.5	16.9	12.9	16.9	15.8
Return on Equity %			20.4	1	20.2	19.7	21.2	16.3	21.8	20.3
			3-Yea							5-Yea
Leverage			Hist. Avç	3	2012	2013	2014	2015	2016	Proj. Avg
Debt/Capital			_	-	_	_	_	_	_	_
Total Debt/EBITDA			_	-	_	_	_	_	_	_
EBITDA/Interest Expense			_	-	_	_	_	_	_	_
Valuation Summary and Fore					Dis	counted Casl	ı Flow Valuat	tion		
	2013	2014	2015(E)	2016(E)				USD Mil	Firm Value (%)	Per Share Value
Price/Fair Value	0.90	0.92	_	_	Pres	ent Value Stage	e l	30,258	29.6	18.42
Price/Earnings	14.9	14.0	14.2	12.2		ent Value Stage		44,418	43.5	27.03
EV/EBITDA	11.9	12.1	11.5	10.1		ent Value Stage		27,505	26.9	16.74
EV/EBIT	13.6	139.5	13.2	11.3		I Firm Value	· · · ·	102,180	100.0	62.19
Free Cash Flow Yield %	6.8	6.3	7.2	8.0						

EV/EBII	13.6	139.5	13.2	11.3
Free Cash Flow Yield %	6.8	6.3	7.2	8.0
Dividend Yield %	1.8	2.1	2.3	2.5
Key Valuation Drivers				
Cost of Equity %				10.0
Pre-Tax Cost of Debt %				_
Weighted Average Cost of Capi	tal %			10.0
Long-Run Tax Rate %				15.8
Stage II EBI Growth Rate %				5.0
Stage II Investment Rate %				20.0
Perpetuity Year				20

Additional estimates and scenarios available for download at http://select.morningstar.com.

Discounted Cash Flow Valuation			
	USD Mil	Firm Value (%)	Per Share Value
Present Value Stage I	30,258	29.6	18.42
Present Value Stage II	44,418	43.5	27.03
Present Value Stage III	27,505	26.9	16.74
Total Firm Value	102,180	100.0	62.19
Cash and Equivalents	32,022	_	19.49
Debt	_	_	_
Preferred Stock	_	_	_
Other Adjustments	-4,000	_	-2.43
Equity Value	130,202	_	79.25
Projected Diluted Shares	1,643		
Fair Value per Share (USD)	_		
The data in the table above represent has	a-nasa foranasti	in the compar	ny's ronortina

The data in the table above represent base-case forecasts in the company's reporting currency as of the beginning of the current year. Our fair value estimate may differ from the equity value per share shown above due to our time value of money adjustment and in cases where probability-weighted scenario analysis is performed.



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Morningstar Analyst Forecasts

Income Statement (USD Mil) Fiscal Year Ends in September				Fax	
riscai real cilus III Septeriibei	2012	2013	2014		<u>2016</u>
Revenue	19,121	24,866	26,487	27,611	<i>30,123</i>
Cost of Goods Sold	7,096	9,820	10,686	11,539	12,213
Gross Profit	12,025	15,046	15,801	16,073	17,910
Selling, General & Administrative Expenses	2,324	2,518	2,290	2,368	2,415
Research & Development	3,915	4,967	5,477	5,729	6,187
Other Operating Expense (Income)	104	331	484	_	_
Depreciation & Amortization (if reported separately)	_	_	_	_	_
Operating Income (ex charges)	5,682	7,230	7,550	7,976	9,307
Restructuring & Other Cash Charges	_	_	_	_	_
Impairment Charges (if reported separately)	_	_	_	_	_
Other Non-Cash (Income)/Charges	_			1,200	
Operating Income (incl charges)	5,682	7,230	7,550	6,776	9,307
Interest Expense	_	_	_	_	_
Interest Income	881	964	1,228	880	880
Pre-Tax Income	6,563	8,194	8,778	7,656	10,187
Income Tax Expense	1,279	1,349	1,244	1,302	1,579
Other After-Tax Cash Gains (Losses)	_	_	_	_	_
Other After-Tax Non-Cash Gains (Losses)	775	_	_	_	_
(Minority Interest)	50	8	433	_	_
(Preferred Dividends)				_	
Net Income	6,109	6,853	7,967	6,354	8,608
Weighted Average Diluted Shares Outstanding	1,741	1,754	1,714	1,654	1,616
Diluted Earnings Per Share	3.51	3.91	4.65	3.84	5.33
Adjusted Net Income	6,464	7,911	9,032	8,606	9,756
Diluted Earnings Per Share (Adjusted)	3.71	4.51	5.27	5.20	6.04
Dividends Per Common Share	0.93	1.20	1.54	1.74	1.86
EBITDA	6,579	8,247	8,700	7,926	10,457
Adjusted EBITDA	6,579	8,247	8,700	9,126	10,457



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Morningstar Analyst Forecasts

Balance Sheet (USD Mil)				_	
Fiscal Year Ends in September	2012	2013	2014	For	ecast 2016
Cash and Equivalents	26,837	29,406	32,022	32,933	34,818
Investments			_	_	_
Accounts Receivable	1.459	2,142	2,412	2,514	2.743
Inventory	1,030	1,302	1,458	1,574	1,666
Deferred Tax Assets (Current)	309	573	577	577	577
Other Short Term Assets	473	572	401	418	456
Current Assets	30,108	33,995	36,870	38,016	40,260
Net Property Plant, and Equipment	2,851	2,995	2,487	2,441	2,496
Goodwill	3,917	3,976	4,488	4,488	4,488
Other Intangibles	2,938	2,553	2,580	2,580	2,580
Deferred Tax Assets (Long-Term)	1,412	1,059	1,174	1,174	1,174
Other Long-Term Operating Assets	677	866	903	941	1,027
Long-Term Non-Operating Assets	1,109	72	72	72	72
Total Assets	43,012	45,516	48,574	49,713	52,097
Accounts Payable	1,298	1,554	2,183	2,357	2,495
Short-Term Debt	_	_	_	_	_
Deferred Tax Liabilities (Current)	_	_	_	_	_
Other Short-Term Liabilities	4,004	3,659	3,830	3,993	4,356
Current Liabilities	5,302	5,213	6,013	6,350	6,851
Long-Term Debt	_	_	_	_	_
Deferred Tax Liabilities (Long-Term)	_	_	_	_	_
Other Long-Term Operating Liabilities	3,739	3,666	2,967	3,093	3,374
Long-Term Non-Operating Liabilities	426	550	428	1,628	1,628
Total Liabilities	9,467	9,429	9,408	11,071	11,853
Preferred Stock	_	_	_	_	_
Common Stock	_	_	_	_	_
Additional Paid-in Capital	11,956	9,874	7,736	7,736	7,736
Retained Earnings (Deficit)	20,701	25,461	30,799	34,275	39,878
(Treasury Stock)	_	_	_	-4,000	-8,000
Other Equity	888	752	631	631	631
Shareholder's Equity	33,545	36,087	39,166	38,642	40,245
Minority Interest			_		
Total Equity	33,545	36,087	39,166	38,642	40,245



Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Morningstar Credit Rating	Industry Group
73.93 USD	80.00 USD	56.00 USD	108.00 USD	Medium	Wide	Stable	Standard	_	Communication Equipment

Morningstar Analyst Forecasts

Cash Flow (USD Mil) Fiscal Year Ends in September				Fore	ecast
Tissar real Enas in ocptomber	2012	2013	2014	2015	2016
Net Income	6,059	6,845	7,964	6,354	8,608
Depreciation	897	1,017	1,150	1,150	1,150
Amortization	_	_	_	_	_
Stock-Based Compensation	1,035	1,105	1,059	1,095	1,117
Impairment of Goodwill	23	_	642	_	_
Impairment of Other Intangibles	_	_	_	_	_
Deferred Taxes	395	268	298	_	
Other Non-Cash Adjustments	-1,746	-342	-1,608	1,200	_
(Increase) Decrease in Accounts Receivable	-456	-680	-281	-102	-229
(Increase) Decrease in Inventory	-252	-300	-155	-116	-92
Change in Other Short-Term Assets	-240	-209	108	-17	-38
Increase (Decrease) in Accounts Payable	371	307	619	174	138
Change in Other Short-Term Liabilities	-88	767	-909	163	363
Cash From Operations	5,998	8,778	8,887	9,900	11,017
(Capital Expenditures)	-1,284	-1,048	-1,185	-1,104	-1,205
Net (Acquisitions), Asset Sales, and Disposals	-833	-192	-883	_	_
Net Sales (Purchases) of Investments	-4,760	-338	429	_	_
Other Investing Cash Flows	_	_	_	88	196
Cash From Investing	-6,877	-1,578	-1,639	-1,017	-1,009
Common Stock Issuance (or Repurchase)	401	-3,085	-3,110	-4,000	-4,000
Common Stock (Dividends)	-1,583	-2,055	-2,586	-2,878	-3,006
Short-Term Debt Issuance (or Retirement)	119	95	_	_	_
Long-Term Debt Issuance (or Retirement)	_	_	_	_	_
Other Financing Cash Flows	306	200	216	-1,095	-1,117
Cash From Financing	-757	-4,845	-5,480	-7,973	-8,123
Exchange Rates, Discontinued Ops, etc. (net)	-19	-20	-3	_	_
Net Change in Cash	-1,655	2,335	1,765	911	1,885



La	st Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Morningstar Credit Rating	Industry Group
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Comparable Company Analysis

These companies are chosen by the analyst and the data are shown by nearest calendar year in descending market capitalization order.

Valuation Analysis																
		Price/Ea	rnings		EV/EBITD	A		Price/Fr	ee Cash Flo	w	Price/Bo	ok		Price/Sa	les	
Company/Ticker	Price/Fair Value	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)
Intel Corp INTC USA	1.38	15.8	21.4	19.3	7.3	8.9	8.0	21.6	27.1	18.9	2.7	2.5	2.3	3.1	3.0	2.8
Texas Instruments Inc TXN USA	1.12	20.8	18.8	18.7	10.7	10.2	10.5	15.3	15.1	15.4	5.2	4.9	4.6	4.3	4.1	4.0
Broadcom Corp BRCM USA	1.06	14.5	13.1	12.0	16.2	13.5	12.4	26.5	14.1	12.4	2.9	2.6	2.3	3.0	3.0	2.8
Average		17.0	17.8	16.7	11.4	10.9	10.3	21.1	18.8	15.6	3.6	3.3	3.1	3.5	3.4	3.2
Qualcomm Inc QCOM US	0.92	14.0	14.2	12.2	12.1	11.5	10.1	16.0	14.0	12.5	3.1	3.2	3.1	4.6	4.5	4.1

Returns Analysis																
•		ROIC %			Adjusted ROIC %			Return o	n Equity %		Return o	n Assets %		Dividen	d Yield %	
	Last Historical Year Total Assets															
Company/Ticker	(Mil)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)
Intel Corp INTC USA	— USD	14.6	10.1	10.9	16.6	11.4	12.3	18.5	12.4	13.2	12.0	8.3	9.0	2.5	2.5	2.5
Texas Instruments Inc TXN USA	— USD	20.5	22.5	22.9	26.0	28.8	29.5	25.5	27.4	25.9	14.7	16.5	16.8	2.4	2.5	2.6
Broadcom Corp BRCM USA	— USD	6.1	12.7	12.9	8.9	18.2	18.0	7.4	15.4	15.8	5.2	11.1	11.9	1.3	1.5	1.7
Average		13.7	15.1	15.6	17.2	19.5	19.9	17.1	18.4	18.3	10.6	12.0	12.6	2.1	2.2	2.3
Qualcomm Inc QCOM US	— USD	15.8	17.0	18.8	31.9	34.7	39.0	21.2	16.3	21.8	16.9	12.9	16.9	2.1	2.3	2.5

Growth Analysis																
		Revenue	Growth %		EBIT Gro	wth %		EPS Gro	wth %		Free Cas	h Flow Gro	wth %	Dividen	d/Share Gro	owth %
	Last Historical Year Revenue															
Company/Ticker	(Mil)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)
Intel Corp INTC USA	55,942 USD	6.1	4.1	4.8	25.1	-28.7	18.8	21.0	-26.6	11.1	336.2	-28.7	66.5	<u> </u>	_	_
Texas Instruments Inc TXN USA	13,057 USD	7.0	4.9	1.0	41.3	8.8	-0.4	31.0	10.9	0.8	23.1	0.0	-2.3	15.3	6.5	6.1
Broadcom Corp BRCM USA	8,398 USD	1.1	-0.2	7.0	21.3	22.9	10.0	10.2	10.5	9.8	-68.1	300.7	17.6	51.0	16.0	13.8
Average		4.7	2.9	4.3	29.2	1.0	9.5	20.7	-1.7	7.2	97.1	90.7	27.3	33.2	11.3	10.0
Qualcomm Inc QCOM US	26,487 USD	6.5	4.3	9.1	4.4	5.6	16.7	16.8	-1.3	16.0	-16.4	49.9	15.4	28.3	13.0	6.9



Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Morningstar Credit Rating	Industry Group
73.93 USD	80.00 USD	56.00 USD	108.00 USD	Medium	Wide	Stable	Standard	_	Communication Equipment

Comparable Company Analysis

These companies are chosen by the analyst and the data are shown by nearest calendar year in descending market capitalization order.

Profitability Analysis																
	Last Historical Year	Gross M	argin %		EBITDA N	/largin %		Operatin	g Margin %	0	Net Mar	gin %		Free Cas	h Flow Ma	rgin %
Company/Ticker	Net Income (Mil)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)
Intel Corp INTC USA	11,624 USD	63.5	53.1	54.9	42.1	33.1	35.1	28.0	19.2	21.8	20.8	14.6	15.5	14.4	11.0	15.1
Texas Instruments Inc TXN USA	2,714 USD	56.9	57.8	58.1	41.0	40.8	39.3	32.3	33.5	33.1	20.8	21.8	21.5	27.8	26.9	26.1
Broadcom Corp BRCM USA	1,831 USD	51.4	53.0	52.8	17.2	20.6	21.0	14.8	18.2	18.7	21.8	24.1	24.8	11.3	21.2	22.5
Average		57.3	54.6	55.3	33.4	31.5	31.8	25.0	23.6	24.5	21.1	20.2	20.6	17.8	19.7	21.2
Qualcomm Inc QCOM US	9,032 USD	59.7	58.2	59.5	32.9	33.1	34.7	28.5	28.9	30.9	34.1	31.2	32.4	29.1	31.9	32.6

Leverage Analysis																
		Debt/Equ	iity %		Debt/Total Cap %			EBITDA/Interest Exp.			Total Debt/EBITDA			Assets/Equity		
0	Last Historical Year Total Debt		2245/51	2042/51	0044	2045/51	2012/51		2045/51	0040/51		2045/51	0040/51	0044	2045/51	2010/51
Company/Ticker	(Mil)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)
Intel Corp INTC USA	13,165 USD	20.2	19.0	15.7	16.8	16.0	13.6	164.7	135.0	166.9	0.6	0.7	0.5	1.5	1.5	1.4
Texas Instruments Inc TXN USA	4,625 USD	43.3	32.1	21.9	30.2	24.3	18.0	56.3	104.5	101.8	0.9	0.6	0.5	1.7	1.6	1.5
Broadcom Corp BRCM USA	2,000 USD	23.0	16.4	14.6	18.7	14.1	12.7	32.8	80.7	139.3	1.4	0.9	0.9	1.4	1.3	1.3
Average		28.8	22.5	17.4	21.9	18.1	14.8	84.6	106.7	136.0	1.0	0.7	0.6	1.5	1.5	1.4
Qualcomm Inc QCOM US	— USD	_		_	_	_	_	_	_	_	_	_	_	1.2	1.3	1.3

Liquidity Analysis																
	Market Cap	Cash per	Share		Current F	latio		Quick Ra	ıtio		Cash/Sh	ort-Term De	ebt	Payout F	Ratio %	
Company/Ticker	(Mil)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)	2014	2015(E)	2016(E)
Intel Corp INTC USA	173,818 USD	4.21	4.25	4.53	2.68	2.48	2.39	2.33	2.06	2.00	_	14.40	7.69	37.7	51.5	45.3
Texas Instruments Inc TXN USA	55,609 USD	3.51	3.52	3.54	2.85	2.81	3.21	2.26	2.22	2.54	3.77	3.75	5.97	48.1	46.3	48.7
Broadcom Corp BRCM USA	25,071 USD	7.86	8.54	10.14	3.37	4.60	4.99	3.09	4.26	4.65	12.31	_	_	50.0	25.6	25.4
Average		5.19	5.44	6.07	2.97	3.30	3.53	2.56	2.85	3.06	8.04	9.08	6.83	45.3	41.1	39.8
Qualcomm Inc QCOM US	122,916 USD	18.68	19.91	21.54	6.13	5.99	5.88	5.89	5.74	5.63	_	_	_	33.1	45.3	34.9



Research Methodology for Valuing Companies

Components of Our Methodology

- ► Economic MoatTM Rating
- ► Moat Trend™ Rating
- ► Moat Valuation
- ► Three-Stage Discounted Cash Flow
- Weighted Average Cost of Capital
- ► Fair Value Estimate
- ► Scenario Analysis
- ► Uncertainty Ratings
- ► Margin of Safety
- ► Consider Buying/Selling
- ► Stewardship Rating

The Morningstar Rating for stocks identifies companies trading at a discount or premium to our analysts' assessment of their fair value. A number of components drive this rating: (1) our assessment of the firm's economic moat, (2) our estimate of the stock's intrinsic value based on a discounted cash-flow model, (3) the margin of safety bands we apply to our Fair Value Estimate, and (4) the current stock price relative to our fair value estimate.

The concept of the Morningstar Economic Moat™ Rating plays a vital role not only in our qualitative assessment of a firm's investment potential, but also in our valuation process. We assign three moat ratings—none, narrow, or wide—as well as the Morningstar Moat Trend™ Rating—positive, stable, or negative—to each company we cover. There are two major requirements for firms to earn either a narrow or wide moat rating: (1) the prospect of earning above-average returns on capital; and (2) some competitive edge that prevents these returns from quickly eroding. The assumptions we make about a firm's moat determine the length of "economic outperformance" that we assume in the latter stages

of our valuation model. We also quantify the value of each firm's moat, which represents the difference between a firm's enterprise value and the value of the firm if no future net investment were to occur. Said differently, moat value identifies the value generated by the firm as a result of any future net new investment. Our Moat Trend Rating reflects our assessment of whether each firm's competitive advantage is either getting stronger or weaker, since we think of moats as dynamic, rather than static.

At the heart of our valuation system is a detailed projection of a company's future cash flows. The first stage of our three-stage discounted cash flow model can last from 5 to 10 years and contains numerous detailed assumptions about various financial and operating items. The second stage of our model—where a firm's return on new invested capital (RONIC) and earnings growth rate implicitly fade until the perpetuity year—can last anywhere from 0 years (for no-moat firms) to 20 years (for wide-moat companies). In our third stage, we assume the firm's RONIC equals its weighted average cost of capital, and we calculate a continuing value using a standard

Morningstar Research Methodology for Valuing Companies

Fundamental Analysis

Economic Moat™ Rating

Company Valuation

Fair Value Estimate

Uncertainty Assessment **** *** ***

Analyst conducts company and industry research:

- Financial statement analysis
- ► Channel checks
- ► Trade-show visits
- Industry and company reports and journals
- ► Conference calls
- Management and site visits

Strength of competitive advantage is rated: None, Narrow, or Wide

Advantages that confer an economic moat:

High Switching Costs (Microsoft)

Cost advantage (Wal-Mart)

Intangible assets (Johnson & Johnson)

Network Effect (Mastercard)

Efficient Scale (Lockheed Martin)

Analyst considers past financial results and focuses on competitive position and future prospects to forecast future cash flows.

Assumptions are entered into Morningstar's proprietary discounted cash-flow model.

Analyst uses a discounted cash-flow model to develop a Fair Value Estimate, which serves as the foundation for the Morningstar Rating for stocks.

The analyst then evaluates the range of potential intrinsic values for the company and assigns an Uncertainty Rating: Low, Medium, High, Very High, or Extreme.

The Uncertainty Rating determines the margin of safety required before we would recommend the stock. The higher the uncertainty, the wider the margin of safety.

The current stock price relative to Morningstar's Fair Value Estimate, adjusted for uncertainty, determines the Morningstar Rating for stocks.

The Morningstar Rating for stocks is updated each evening after the market closes.



Research Methodology for Valuing Companies

Detailed Methodology Documents and Materials*

- ► Comprehensive Equity Research Methodology
- ► Uncertainty Methodology
- ► Cost of Equity Methodology
- ► Morningstar DCF Valuation Model
- ► Stewardship Rating Methodology
- Please contact a sales representative for more information.

perpetuity formula. In deciding on the rate at which to discount future cash flows, we ignore stock-price volatility. Instead, we rely on a system that measures the estimated volatility of a firm's underlying future free cash flows, taking into account fundamental factors such as the diversity of revenue sources and the firm's fixed cost structure.

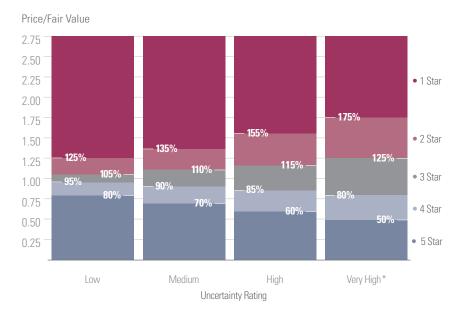
We also employ a number of other tools to augment our valuation process, including scenario analysis, where we assess the likelihood and performance of a business under different economic and firm-specific conditions. Our analysts typically model three to five scenarios for each company we cover, stress-testing the model and examining the distribution of resulting fair values.

The Morningstar Uncertainty Rating captures the range of these potential fair values, based on an assessment of a company's future sales range, the firm's operating and financial leverage, and any other contingent events that may impact the business. Our analysts use this range to assign an appropriate margin of safety—or the discount/premium

to a fair value we apply in setting our consider buying/consider selling prices. Firms trading below our consider-buying prices receive our highest rating of five stars, whereas firms trading above our consider-selling prices receive our lowest rating of one star.

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.

Morningstar Margin of Safety and Star Rating Bands



^{*} Occasionally a stock's uncertainty will be too high for us to estimate, in which case we label it Extreme



Morningstar's Approach to Rating Corporate Credit

- Offers a proprietary measure of the credit quality of companies on our coverage list.
- ► Encapsulates our in-depth modeling and quantitative work in one letter grade.
- Allows investors to rank companies by each of the four underlying components of our credit ratings, including both analyst-driven and quantitative measures.
- Provides access to all the underlying forecasts that go into the rating, available through our institutional service.

Purpose

The Morningstar Corporate Credit Rating measures the ability of a firm to satisfy its debt and debt-like obligations. The higher the rating, the less likely we think the company is to default on these obligations.

The Morningstar Corporate Credit Rating builds on the modeling expertise of our securities research team. For each company, we publish:

- ► Five years of detailed pro-forma financial statements
- Annual estimates of free cash flow
- ► Annual forecasts of return on invested capital
- ► Scenario analyses, including upside and downside cases
- ► Forecasts of leverage, coverage, and liquidity ratios for five years
- ► Estimates of off balance sheet liabilities

These forecasts are key inputs into the Morningstar Corporate Credit Rating and are available to subscribers at select.morningstar.com.

Methodology

We feel it's important to perform credit analysis through different lenses—qualitative and quantitative, as well as fundamental and market-driven. We therefore evaluate each company in four broad categories.

Business Risk

Business Risk captures the fundamental uncertainty around a firm's business operations and the cash flow generated by those operations. Key components of the Business Risk rating include the Morningstar Economic Moat™ Rating and the Morningstar Uncertainty Rating.

Cash Flow Cushion™

Morningstar's proprietary Cash Flow Cushion™ ratio is a fundamental indicator of a firm's future financial health The measure reveals how many times a company's internal cash generation plus total excess liquid cash will cover its debt-like contractual commitments over the next five years. The Cash Flow Cushion acts as a predictor of financial distress, bringing to light potential refinancing, operational, and liquidity risks inherent to the firm.

Morningstar Research Methodology for Determining Corporate Credit Ratings



Analyst conducts company and industry research:

- · Management interviews
- · Conference calls
- · Trade show visits
- · Competitor, supplier, distributor, and customer interviews
- · Assign Economic Moat™ Rating

Cash-Flow Forecasts

company financial statements and competitive dynamics to forecast future free cash

Analyst considers

Analyst derives estimate of Cash-Flow Cushion™.

flows to the firm.

Analysts run bull and bear cases through the model to derive alternate estimates of enterprise value.

Based on competitive analysis, cash-flow forecasts, and scenario analysis, the analyst assigns **Business Risk**



We gauge a firm's health using quantitative tools supported by our own backtesting and academic research

- Morningstar Solvency Score™
- · Distance to Default



Senior personnel review each company to determine the appropriate final credit rating.

- · Review modeling assumptions
- Approve company-specific adjustments



AAA Extremely Low Default Risk

AA Very Low Default Risk

Low Default Risk

BBB

Moderate Default Risk

BB Above Average Default Risk

High Default Risk

Currently Very High Default Risk CCC

CC Currently Extreme Default Risk

Imminent Payment Default

Payment Default

UR **Under Review**

UR+ Positive Credit Implication

Negative Credit Implication



Morningstar's Approach to Rating Corporate Credit

The advantage of the Cash Flow Cushion ratio relative to other fundamental indicators of credit health is that the measure focuses on the future cash-generating performance of the firm derived from Morningstar's proprietary discounted cash flow model. By making standardized adjustments for certain expenses to reflect their debt-like characteristics, we can compare future projected free cash flows with debt-like cash commitments coming due in any particular year. The forward-looking nature of this metric allows us to anticipate changes in a firm's financial health and pinpoint periods where cash shortfalls are likely to occur.

Morningstar Solvency Score™

The Morningstar Solvency Score™ is a quantitative score derived from both historical and forecasted financial ratios. It includes ratios that focus on liquidity (a company's ability to meet short term cash outflows), profitability (a company's ability to generate profit per unit of input), capital structure (how does the company finance its operations), and interest coverage (how much of profit is used up by interest payments).

Distance to Default

Morningstar's quantitative Distance to Default measure ranks companies on the likelihood that they will tumble into financial distress. The measure is a linear model of the percentile of a firm's leverage (ratio of Enterprise Value to Market Value), the percentile of a firm's equity volatility relative to the rest of the universe and the interaction of these two percentiles. This is a proxy methodology for the common definition of Distance to Default which relies on option-based pricing models. The proxy has the benefit of increased breadth of coverage, greater simplicity of calculation, and more predictive power.

For each of these four categories, we assign a score, which we then translate into a descriptive rating along the scale of Very Good / Good / Fair / Poor / Very Poor.

Overall Credit Rating

The four component ratings roll up into a single preliminary credit rating. To determine the final credit rating, a credit committee of at least five senior research personnel reviews each preliminary rating.

We review credit ratings on a regular basis and as events warrant. Any change in rating must be approved by the Credit Rating Committee.

Investor Access

Morningstar Corporate Credit Ratings are available on Morningstar.com. Our credit research, including detailed cash-flow models that contain all of the components of the Morningstar Corporate Credit Rating, is available to subscribers at select.morningstar.com.



Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Morningstar Credit Rating	Industry Group
73.93 USD	80.00 USD	56.00 USD	108.00 USD	Medium	Wide	Stable	Standard	_	Communication Equipment



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The Morningstar Rating for stocks identifies stocks trading at a discount or premium to their intrinsic value.

Five-star stocks sell for the biggest risk-adjusted discount whereas one-star stocks trade at premiums to their intrinsic value. Based on a fundamentally focused methodology and a robust, standardized set of procedures and core valuation tools used by Morningstar's Equity Analysts, four key components drive the Morningstar Rating: 1. Assessment of the firm's economic moat, 2. Estimate of the stock's fair value, 3. Uncertainty around that fair value estimate and 4. Current market price. Further information on Morningstar's methodology is available from http://global.morningstar.com/equitydisclosures.

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- -Equity Analysts use publicly available information.



Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Morningstar Credit Rating	Industry Group
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