Research Highlights

A weekly summary of our best ideas and developments in the companies we cover.

Morningstar Equity Research
Jan. 22-25, 2019

Contents

Annual Tech Show Highlights Push Into Automotive, Industrials, Healthcare

We attended CES, formerly known as the Consumer Electronics Show, the premier technology showcase, in Las Vegas in January 2019, looking at both public and private companies. In our view, CES continues to evolve and diversify, as the focus is still drifting away from smartphones, tablets, and PCs and toward industrial, automotive, "Internet of Things," and health applications. Across our public and private research coverage, we remain most impressed with the push toward active safety systems in automobiles, autonomous driving (including our self-driving car ride with Lyft), and transportation technology. We've long believed that the push toward safer, greener, smarter cars would be led by rising electronics content per vehicle, in turn boosting revenue growth for many of the technology firms we cover. We see no signs of these content gains slowing down in vehicles, as more and more sensors, processors, connectivity, and software enhancements are enabling the latest vehicle technologies.

Across our public equity research coverage, we remain impressed with Intel's push into transportation via its acquisition of Mobileye. We also remain bullish on STMicro, as we view the firm as far more than an Apple iPhone supplier and like its diversified product portfolio and ongoing push into automotive. Qorvo also appears deeply undervalued, as long-term iPhone demand concerns are overdone, in our view. Our meetings with Nvidia, Analog Devices, Synaptics, and Qorvo also provided us with new insights.

Finally, in addition to our autonomous driving ride with Lyft, we met with several interesting private companies, such as uBeam and Intellithings in the IoT space, Wearable Health PLC and Bongmi with impressive HealthTech products, and Bell, the helicopter company whose demo was a highlight of the show as it is partnering with Uber on the Nexus air taxi. Additionally, our meetings with Cognata and Seoul Robotics gave us insight into the evolving investments into automotive-grade lidar solutions.

- CES 2019 continues to showcase technology's diversification away from the consumer device (smartphone, tablet, PC) and toward a wider array of applications across diverse end markets (transportation, industrial, Internet of Things, health, and medical).
- We remain bullish on the tech sector's prospects within the automotive sector in particular. We also noted a rising focus on artificial intelligence within IoT and robotics, a host of emerging HealthTech products, and emphasis on 5G, the next wave of wireless networks.
- Among bellwether public technology firms, we noted that Google and Amazon both had a stronger presence at CES, as both emphasize their voice-recognition assistants across a host of partners and applications.

- We attended Mobileye's presentation at CES 2019 and came away with renewed confidence in our positive thesis on Best Idea Intel. In 2018, Mobileye recorded 28 new design wins, while seven vehicle models launched with EyeQ 4 processors for advanced functionalities beyond basic driver-assistance systems. For the year, it shipped 12.4 million EyeQ chips versus 2.7 million in 2014, which represents a 46% compound annual growth rate. We remain enthused on Intel’s future prospects in automotive as its Mobileye acquisition bears fruit with increased functionality added to existing ADAS offerings, and we see an attractive margin of safety for this wide-moat chip titan.
- We met with Colette Kress, Nvidia's CFO, and discussed the firm's recent gaming product launch (RTX 2060) and data center prospects in the wake of competition from customers (Google) and peers (Intel and Xilinx). Management remains uber-bullish on the firm's forward prospects while discounting its challengers (be it AMD in gaming GPUs, Intel in AI and self-driving, and Google with its TPU for inferencing). We see shares as modestly overvalued today and continue to believe that competitive threats in Nvidia's nascent opportunities (AI and self-driving) remain unappreciated.
- STMicro remains deeply undervalued, in our view, as recent concerns about sluggish Apple iPhone demand, and its effects on ST, are overdone. We remain impressed with ST's product diversification beyond the smartphone and continue to foresee nice growth opportunities for STMicro in 32 bit microcontrollers and imaging products like Time of Flight sensors aimed at industrial and IoT applications.
- Analog Devices' automotive chip growth has lagged several of its peers in recent years due to legacy product headwinds, but as such headwinds are starting to subside, we remain optimistic about the firm's ability to kickstart high-single-digit revenue growth from cars. At CES, ADI showcased its 28 nm CMOS radar solutions, its A2B audio, fingerprint sensor, and steer-by-wire technologies.
- We hailed a self-driving car, operated by Lyft in partnership with Aptiv inside of a BMW 540. While we saw some hiccups, and the car failed to make some moves that otherwise would have been performed by a human driver, the experience was an interesting preview of what we believe is the future of ride-sharing. We also spent time with Bell, whose demo was a highlight of the show, in our view, as it showcased its Nexus air taxi in partnership with Uber.
- We continued to see strong interest in lidar for automotive sensing at CES. Our meetings with private companies Cognata and Seoul Robotics highlighted a bit of a shift in lidar investment, with a focus on software and simulation and a fear that lidar hardware may become commoditized. From a public company perspective, as with many technologies, we prefer to invest in the "arms dealers" in software and semiconductors that enable the hardware.
- Qualcomm remains undervalued, but its ongoing saga with Apple keeps us from recommending shares over Best Idea Intel. We met with company representatives that stressed the firm will be doubling down on automotive and 5G, in lieu of PC and server processors, which we believe is pragmatic. However, the firm's licensing business that supports our narrow moat rating continues to face significant pressure, while its chip business faces a stagnating addressable market in mobile that we are unsure can be supplanted by automotive and 5G.
- We met with Cees Links, Qorvo's general manager of its Wireless Connectivity Business unit and discussed the 6th generation of Wi-Fi, 802.11ax, coming soon to the home. We think the rise of .11ax bodes well for Qorvo's connectivity business. More broadly, we continue to view Qorvo's shares as materially undervalued, as near-term Apple iPhone demand concerns appear overdone to us, while we

like Qorvo's growth prospects in 5G in smartphones, wireless infrastructure and other IoT, and industrial devices.

- We attended Synaptics' management presentation and had a chance to speak with several executives about the firm's product pipeline that spans consumer IoT, PC, automotive, and its core mobile. Overall, the convergence of audio, video, and display with ubiquitous smart voice bodes very well for the firm's broad portfolio of offerings. While mobile challenges may persist in the near term (across display driver, touch controllers, and fingerprint sensors), we foresee solid growth via consumer IoT in the near term, as the firm is on track to double auto revenue by 2021 via its touch and display driver integrated solutions. Shares remain undervalued at current levels relative to our fair value estimate of $64.
- UBeam is a venture-backed company developing over-the-air wireless charging systems for electronic devices, pivoting toward consumer IoT and away from smartphones. Part of uBeam's notoriety comes from its promise of over-the-air power transmission via ultrasound, which has raised skepticism from the scientific community as uBeam's competitors in this segment utilize radio waves or magnetic resonance. We believe expectations for uBeam are high and note the company has raised ample capital, including $55 million from notable investors such as Andreessen Horowitz, Upfront Ventures, Mark Cuban, Marissa Meyer, and Tony Hsieh among others.
- Intellithings is a developer of personalized automation products for the burgeoning home automation market, which is expected to reach $80 billion by 2022. At CES, Intellithings showcased its first consumer product, RoomMe, to be released in the first quarter of 2019. RoomMe uses a combination of sensors and a mobile application to create an indoor room-level positioning system, which allows for person-specific home automation. As the market for smart devices grows and commoditizes, we believe personalization capabilities like RoomMe could be a key differentiator.
- Wearable Health is banking on developing a premium wearable heart monitor for a more professional market. Its wearable electrocardiogram platform consists of a compact measurement device called the HeartBit, training tops (form-fitting shirts and sports bras) with integrated sensors, and an app to display data and provide social and personal training components.
- Bongmi produces fertility-tracking devices for women as well as healthcare devices for babies and young children. Their first fertility tracker, the Femometer, is essentially a Bluetooth-enabled basal thermometer accompanied by a fertility-tracking app. The company's second device, the Ivy Smart Ovulation Tracker, consists of an at-home urine test to detect hormone levels for fertility tracking and detection of fertility-related health issues. We believe there is a large and growing market for fertility planning and infant care devices. According to Markets and Markets, the global fertility test market is expected to reach $583 million by 2023, and the global infertility treatment market is expected to reach $2.2 billion in the same time frame.

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Market Isn't Appreciating Expedia's Network Advantage

Trading at just 9 times forward enterprise value/EBITDA compared with the 11.3 times averaged over the past four years and the 13 times for peer Booking Holdings, we maintain the view substantiated in our February 2018 report Investors Should Reserve a Seat as Expedia Is Poised to Take Off that investors continue to greatly underappreciate Expedia's global online travel network, the source of its narrow moat. Further, we contend that the firm's competitive edge is supported by strategically wise supply and demand investment into international and vacation rentals, which are resulting in ongoing booking share gains. Our conviction that Expedia shares currently offer long-term investors an attractive margin of safety is buoyed here by our detailed sum-of-the-parts analysis on the company's four segments (core online travel agency, HomeAway, Egencia, and Trivago) that drive a $167 valuation, a 7% discount to our $180 discounted cash flow fair value estimate. Our fair value estimate incorporates 9.6% and 8.9% average annual sales growth and operating margins over the next five years (versus a 6.2% estimated operating margin in 2018). At the current share price of $115, we believe investors are either getting Expedia's attractive HomeAway vacation rental brand for free or valuing the main OTA business at less than half the multiple the market currently is willing to pay for Booking Holdings, the company's main peer. Therefore, we think now is a good time for investors to book a trip with Expedia shares.

- Expedia's global core OTA business holds network advantages over regional-based peers, justifying a forward EBITDA multiple/future growth ratio premium that we believe is worth $149 per share.
- The company's HomeAway brand exhibits network advantages and expanding booking share, supported by strategic investment, leading to a $58 per share valuation.
- The Egencia corporate brand offers share expansion opportunity in a lower-growth market, creating $6 per share in value, while the larger disadvantaged Trivago metasearch division generates a $13 per share value. Excluding around $60 per share in unallocated costs results in our $167 sum-of-the-parts valuation.

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PG&E Cleared in 2017 Fire, but Financial Woes Are Still Substantial

We are raising our fair value estimate to $12.50 per share from $11 after the California Department of Forestry and Fire Protection, or Cal Fire, found that PG&E did not violate state laws with respect to the cause of the 2017 Tubbs fire. We are reaffirming our no-moat and very high uncertainty ratings.

We still expect PG&E to file for bankruptcy as soon as Jan. 29. Although PG&E's long-term liabilities now appear smaller, its near-term need for cost-effective capital remains pressing. Despite a 75% jump in the stock on Jan. 24, we think it remains cost-prohibitive for PG&E to raise equity for its planned investments. Our estimates show that PG&E needs its committed $5.5 billion of debtor-in-possession financing to continue operating as planned while stakeholders resolve all fire issues.

Our fair value increase is due to a reduction in our probability-adjusted estimate of PG&E's 2017 wildfire liabilities following the Tubbs report. We now assume a 75% probability that PG&E will be responsible for $5 billion of claims, penalties, and fines related to fires that Cal Fire investigators allege involve state violations. PG&E took a $2.5 billion pretax charge in the third quarter related to these fires. We believe subsequent investigations and legal rulings will lead to additional charges.

We previously assumed a 50% probability that PG&E would be responsible for at least $10 billion of claims, penalties, and fines related to the 2017 fires. Cal Fire alleges PG&E violated state laws in 17 of the 21 identified 2017 Northern California wildfires but not Tubbs, which was by far the largest and most deadly.

We are reaffirming our assumption that PG&E faces a 50% probability of $20 billion of claims, penalties, and fines related to the 2018 Camp Fire, the most destructive and deadly in state history. We also still believe PG&E's postbankruptcy equity value could exceed $20 per share if it avoids significant penalties and settles fire claims at $0.35 per $1.

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Best Ideas

Company and Industry	Morningstar Rating	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price / Fair Value	Market Cap (B)	Analyst
Basic Materials								
Cameco (CCJ)	★★★★	$19.5	$11.66	High	Narrow	0.60	4.61	Inton
Compass Minerals International (CMP)	★★★★★	$81	$48.69	High	Wide	0.60	1.65	Goldstein
James Hardie Industries (JHX)	★★★★	AUD 21.2	AUD 15.04	Medium	Narrow	0.71	6.65	Slade
Martin Marietta Materials (MLM)	★★★★	$240	$176.04	High	Narrow	0.73	11.04	Inton
Communication Services								
BT Group (BT.A)	★★★★	GBX 360	GBX 236.25	High	Narrow	0.66	23.44	C. Nichols
China Mobile (941)	★★★★	HKD 97	HKD 81.15	Medium	Narrow	0.84	1661.59	Baker
Telefonica (TEF)	★★★★★	$13	$7.71	High	Narrow	0.59	40.05	C. Nichols
Telstra (TLS)	★★★★★	AUD 4.4	AUD 2.96	Medium	Narrow	0.67	35.20	Han
Vodafone Group (VOD)	★★★★	$250	$144.04	High	Narrow	0.58	38.49	C. Nichols
Consumer Cyclical								
Alibaba Group Holding (BABA)	★★★★	$240	$155.86	High	Wide	0.65	400.86	Hottovy
Anta Sports Products (2020)	★★★★★	HKD 55	HKD 37.5	Medium	Narrow	0.68	100.68	Su
Bayerische Motoren Werke (BMW)	★★★★	EUR 117	EUR 73.12	High	Narrow	0.62	47.59	Hilgert
Cie Financiere Richemont (CFR)	★★★★	CHF 90	CHF 69.76	High	Wide	0.78	39.39	Sokolova
Dufry (DUFN)	★★★★	CHF 144	CHF 99.76	High	Narrow	0.69	5.04	Sokolova
Expedia Group (EXPE)	★★★★	$180	$117.42	High	Narrow	0.65	17.49	Wasiolek
General Motors (GM)	★★★★	$47	$38.16	High	None	0.81	53.86	Whiston
Hanesbrands (HBI)	★★★★★	$27	$14.71	Medium	Narrow	0.54	5.31	Swartz
InvoCare (IVC)	★★★★	AUD 16	AUD 12.17	Medium	Wide	0.76	1.34	Ragonese
Mattel (MAT)	★★★★★	$21	$12.27	High	Narrow	0.58	4.24	Katz
Norwegian Cruise Line Holdings (NCLH)	★★★★	$69	$46.99	High	Narrow	0.68	10.34	Katz
Walt Disney (DIS)	★★★★	$130	$110.55	Medium	Wide	0.85	164.79	Macker
WPP (WPP)	★★★★★	GBX 1450	GBX 869.4	Medium	Narrow	0.60	10.97	Mogharabi
Consumer Defensive								
A2 Milk (ATM)	★★★	AUD 13.7	AUD 12.3	High	Narrow	0.90	9.04	Fleck
Anheuser-Busch InBev (BUD)	★★★★★	$118	$74.25	Low	Wide	0.63	146.36	Gorham
G8 Education (GEM)	★★★★	AUD 3.5	AUD 3.07	High	None	0.88	1.40	James
General Mills (GIS)	★★★★★	$57	$43.52	Low	Wide	0.76	25.97	Vora
Imperial Brands (IMB)	★★★★★	GBX 3700	GBX 2432.5	Low	Wide	0.66	23.27	Gorham
Mondelez International (MDLZ)	★★★★	$52	$43.03	Medium	Wide	0.83	62.56	Lash
Energy								
Cenovus Energy (CVE)	★★★★	$19	$10.17	Very High	None	0.54	12.50	Gemino
Diamondback Energy (FANG)	★★★	$120	$101.56	High	Narrow	0.85	16.66	Meats
Enbridge (ENB)	★★★★	$62	$47.55	Medium	Wide	0.77	96.14	Gemino
Enterprise Products Partners (EPD)	★★★★★	$35.5	$27.35	Low	Wide	0.77	59.70	Ellis
Royal Dutch Shell (RDS.B)	★★★★	$83	$60.45	Medium	Narrow	0.73	244.55	Good
Schlumberger (SLB)	★★★★	$62	$43.56	High	Narrow	0.70	60.24	Caldwell
Total (TOT)	★★★★★	$77	$53.34	Medium	None	0.69	139.67	Good
Woodside Petroleum (WPL)	★★★★	AUD 46.5	AUD 34.28	High	None	0.74	32.09	Taylor
Financial Services								
Agricultural Bank of China (601288)	★★★	CNY 4.2	CNY 3.67	High	Narrow	0.87	1270.10	Tan
Altaba (AABA)	★★★★	$98	$64	High	None	0.65	38.57	Mogharabi
American International Group (AIG)	★★★★★	$76	$42.94	Medium	None	0.57	37.99	Horn
BlackRock (BLK)	★★★★	$475	$406.56	Medium	Wide	0.86	64.51	Warren
Capital One Financial (COF)	★★★★★	$119	$80.18	Medium	Narrow	0.67	37.50	Plunkett

Source: Morningstar. As of Jan. 25, 2019

Best Ideas

Company and Industry	Morningstar Rating	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price / Fair Value	Market Cap (B)	Analyst
Financial Services, Continued								
Credit Suisse Group (CSGN)	★★★★★	CHF 22	CHF 12.42	High	Narrow	0.56	31.70	Scholtz
Link Administration Holdings (LNK)	★★★★	AUD 8.5	AUD 7.19	Medium	Narrow	0.85	3.83	James
Macquarie Group (MQG)	★★★★	AUD 135	AUD 117.81	Medium	Narrow	0.87	40.44	Ellis
Oversea-Chinese Banking Corp (O39)	★★★★	SGD 13.6	SGD 11.47	High	Narrow	0.84	48.74	Wu
Pendal Group (PDL)	★★★★	AUD 11	AUD 7.7	Medium	Narrow	0.70	2.45	Likos
Sumitomo Mitsui Financial Group (8316)	★★★★★	JPY 5960	JPY 4013	Medium	None	0.67	5600.56	Makdad
T. Rowe Price Group (TROW)	★★★★	$112	$93.86	Medium	Wide	0.84	22.59	Warren
Wells Fargo (WFC)	★★★★	$65	$49.98	Medium	Wide	0.77	228.97	Compton
Westpac Banking (WBC)	★★★★	AUD 33	AUD 25.88	Medium	Wide	0.78	88.74	Ellis
Healthcare								
Allergan (AGN)	★★★★★	$240	$157.57	Medium	Wide	0.66	53.15	Waterhouse
DaVita (DVA)	★★★★★	$81	$56.39	Medium	Narrow	0.70	9.36	Strole
Medtronic (MDT)	★★★★	$110	$87.23	Medium	Wide	0.79	117.15	Wang
Roche Holding (ROG)	★★★★★	CHF 333	CHF 255.45	Low	Wide	0.77	217.90	Andersen
Industrials								
Anixter International (AXE)	★★★★★	$107	$59.1	Medium	Narrow	0.55	1.98	Bernard
Beijing Enterprises Holdings (392)	★★★★	HKD 58	HKD 44.5	Medium	Narrow	0.77	56.16	Song
CK Hutchison Holdings (1)	★★★★★	HKD 118	HKD 81	Medium	None	0.69	312.36	Tan
G4S (GFS)	★★★★★	GBX 337	GBX 198.9	Medium	None	0.59	3.09	Field
GEA Group (G1A)	★★★★★	EUR 45	EUR 24.37	Medium	Wide	NA	4.40	Molina
General Dynamics (GD)	★★★★	$216	$170.82	Medium	Wide	0.79	50.59	Higgins
Grupo Aeroportuario del Pacifico (GAP B)	★★★★	MXN 210	MXN 169.12	High	Wide	0.81	94.88	Higgins
Guangshen Railway (525)	★★★★★	HKD 6.3	HKD 3.25	High	None	0.52	27.37	Song
Johnson Controls International (JCI)	★★★★	$46	$32.27	High	Narrow	0.70	29.36	Bernard
Kion Group (KGX)	★★★★★	EUR 90	EUR 48.93	Medium	Narrow	0.54	5.76	Molina
Sodexo (SW)	★★★★	EUR 110	EUR 93.82	Medium	Narrow	0.85	13.66	Field
Stericycle (SRCL)	★★★★★	$83	$43.22	High	Narrow	0.52	3.92	Young
Real Estate								
Aveo Group (AOG)	★★★★★	AUD 2.3	AUD 1.56	Medium	None	0.68	0.90	Sherlock
CK Asset Holdings (1113)	★★★★	HKD 81	HKD 65	Medium	Narrow	0.80	240.07	Zhong
Macerich (MAC)	★★★★	$59	$44.99	High	Narrow	0.76	6.35	Brown
Sun Hung Kai Properties (16)	★★★★	HKD 153	HKD 129	Medium	Narrow	0.84	373.71	Zhong
Technology								
Applied Materials (AMAT)	★★★★	$49	$37.82	High	Wide	0.77	36.07	Davuluri
Intel (INTC)	★★★★	$65	$49.76	Medium	Wide	0.77	227.10	Davuluri
KLA-Tencor (KLAC)	★★★★	$128	$98.29	High	Wide	0.77	15.05	Davuluri
Lam Research (LRCX)	★★★★	$185	$161.2	High	Narrow	0.87	24.82	Davuluri
Microchip Technology (MCHP)	★★★★★	$112	$78.44	Medium	Wide	0.70	18.55	Colello
Murata Manufacturing (6981)	★★★★★	JPY 24000	JPY 14970	High	Narrow	0.62	3192.46	Ito
Skyworks Solutions (SWKS)	★★★★	$105	$70.03	High	Narrow	0.67	12.43	Colello
Tencent Holdings (700)	★★★★	HKD 499	HKD 343.8	High	Wide	0.69	3273.06	Tam
Utilities								
Dominion Energy (D)	★★★★	$84	$69.13	Low	Wide	0.82	53.68	Fishman
Enel (ENEL)	★★★	EUR 5.7	EUR 5.18	Medium	None	0.91	52.66	Fulop
ENN Energy Holdings (2688)	★★★★	HKD 83	HKD 74.65	Medium	Narrow	0.90	83.91	Lee
Entergy (ETR)	★★★★	$96	$88.63	Low	Narrow	0.92	16.66	Fishman
Orsted (ORSTED)	★★★	DKK 450	DKK 460	Low	Narrow	1.02	193.22	Fulop

Source: Morningstar. As of Jan. 25, 2019

Highlighted Stocks

Arconic ARNC

Morningstar Rating	Sector	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Industrials	Stable	USD	24	18.57	High	None	0.77	8.89

Source: Morningstar. As of Jan. 25, 2019

The decision not to sell can be viewed as a vote of confidence in the company's long-term prospects.

Analyst Note, Jan. 22, 2019
Arconic's board has said it will no longer pursue a sale of the company after conducting a corporate strategy and portfolio review. This news likely came as a surprise to many, as media reports had indicated that the sale of Arconic to Apollo Global Management was imminent. Indeed, many sell-side fair value estimates have been brought down to the rumored offer price of $21-$22 per share in recent weeks.

Our fair value estimate has ranged between $22 and $25 per share since Arconic was spun out from Alcoa in late 2016 but has held steady at $24 per share since late October 2018. Although Arconic shares have traded sharply lower on the news that the company will not be acquired, our assessment of the company's intrinsic value is unchanged. We also maintain our no-moat rating. We view this sell-off as an attractive entry point for investors with a longer investment horizon.

As expressed in our recent notes on the takeover rumors, an offer price in the low $20s per share would not adequately compensate shareholders. This view now appears to be shared by Arconic's board. Instead, the company seems to be embracing the notion that the business can be turned around. The decision not to sell can be viewed as a vote of confidence in the company's long-term prospects.

Arconic's market-implied enterprise value/last 12-months EBITDA multiple is now below 7, low compared with the 8.5 times multiple on midcycle LTM EBITDA we apply in our valuation model. This compares with an average EV/LTM EBITDA multiple of 9.9 since Arconic started trading as a separate company from the legacy Alcoa. Additionally, Arconic's current multiple sits well below those of close competitors. Allegheny Technologies, Carpenter Technology, and Kaiser Aluminum traded at multiples of 9.6, 8.6, and 9.9, respectively, and 9.4 on average, as of the Jan. 18 market close.

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Schlumberger SLB

Morningstar Rating	Sector	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Energy	Stable	USD	62	44.99	High	Narrow	0.73	60.24

Source: Morningstar. As of Jan. 25, 2019

We are particularly encouraged by the company's success in its integrated initiatives, such as integrated drilling services and Schlumberger production management.

Analyst Note, Jan. 22, 2019
Best Idea Schlumberger posted a solid fourth quarter, considering the severe industry headwinds affecting the company's pressure-pumping business. Revenue declined 4% sequentially owing to a 12% decline in North America offset by a 1% increase in the international market. Adjusted operating margin slipped to 9% from 10.9% previously, owing chiefly to the North American slowdown along with international project startup costs in the drilling segment. Our fair value estimate and narrow moat rating remain unchanged for now.

As we've previously noted, the bottleneck in Permian Basin takeaway capacity has caused a slowdown in U.S. shale completions activity, affecting utilization and pricing for pressure pumpers. This completions slowdown accelerated in the fourth quarter. However, the takeaway constraints are still set to be alleviated by the second half of 2019, meaning that these issues are temporary.

Schlumberger management noted that its pressure-pumping revenue was down 25% in the fourth quarter. We estimate that pressure pumping (which exists within the production segment) accounted for about 15% of total company revenue (the levels were not disclosed) and about 40% of North American revenue in the prior quarter. Therefore, the pressure-pumping slowdown accounted for nearly all of the North American decline. Additionally, Cameron's North American sales declined 8%, owing to the same cause as the pressure pumping slowdown.

Management reiterated its optimistic guidance for international markets in 2019, suggesting that international revenue will grow at least mid- to high single digits owing to higher overall activity levels and expenditures (we forecast 9% international growth in 2019). Furthermore, North American revenue should rebound (particularly in the latter half of the year) owing to the pressure-pumping recovery.

We are particularly encouraged by the company's success in its integrated initiatives, such as integrated drilling services and Schlumberger production management. In 2019 and 2020, this will have a particularly strong impact on the drilling segment, where around 50% of total revenue is now covered by integrated performance-based contracts of some kind.

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Capital One Financial COF

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★★	Financial	Stable	USD	119	79.73	Medium	Narrow	0.67	37.50

Source: Morningstar. As of Jan. 25, 2019

The market seems to not realize that this quarter's higher marketing expenses mean the company is winning the deposits of new customers, securing new cardholders, and probably outperforming management's own expectations.

Analyst Note, Jan. 23, 2019

Narrow-moat Capital One Financial had an interesting fourth quarter that many will misinterpret, as we did initially. The company produced net revenue of $7 billion, flat with last year's fourth quarter. The bottom line was more impressive as the bank generated normalized earnings per share of $1.87, about a 15% like-for-like improvement from last year. We were mildly disappointed by card receivables growth; domestic receivables grew only 2% from the previous year as Capital One's tighter underwriting clearly signaled management's caution. We're lowering our fair value estimate to $119 per share from $127 as we take into account the lower-than-expected receivables growth. We believe Capital One is exceedingly cheap. The market seems to not realize that this quarter's higher marketing expenses mean the company is winning the deposits of new customers, securing new cardholders, and probably outperforming management's own expectations.

Many investors will decry Capital One's $831 million in marketing expenses this quarter, a massive 81% or $371 million jump from the previous year. Initially, we had to recheck that number because it didn't seem possible. No, Capital One isn't spending like mad to employ Samuel L. Jackson and Jennifer Garner. This quarter's earnings miss appears to be entirely driven by two offers: the $200-$1,000 cash bonus on new deposit accounts and the $500 signup bonus for the new Savor card. Based on the incredible growth in marketing expense, it appears Capital One had a terrific quarter in opening new deposit accounts and securing new cardholders. We estimate this cost Capital One at least $0.45 per share in earnings, almost accounting for this quarter's miss. To us, it looks like a shrewd investment.

We believe Capital One's aggressive promotional offers for new deposit accounts are a bold move most companies wouldn't make out of fear of angering short-term-oriented analysts. But if they result in sticky deposits, we like it. To put this in perspective, during the quarter, Capital One's interest-bearing deposits cost it 1.36% compared with 2.99% for securitized debt obligations and 3.86% for senior subordinated debt. Based on average balances, interest-bearing deposits accounted for about 80% of funding. Keeping interest rates fixed, had deposits accounted for 85% of interest-bearing funding, it would have decreased funding costs by about $75 million for the quarter. That might not seem like much, given the increase in expenses, but if these result in loyal depositors, the one-time bonus will be dwarfed by the long-term savings of cheaper funding.

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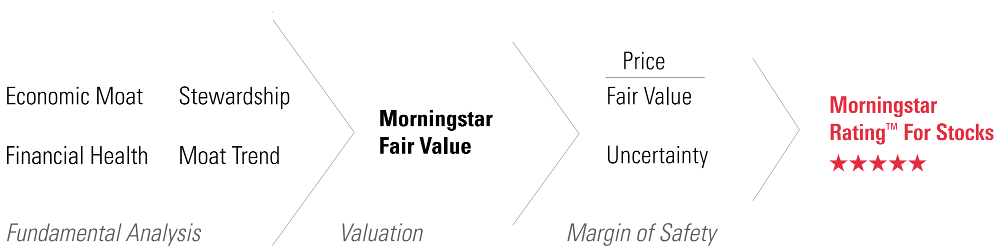
Research Methodology for Valuing Companies

Overview

At the heart of our valuation system is a detailed projection of a company's future cash flows, resulting from our analysts' research. Analysts create custom industry and company assumptions to feed income statement, balance sheet, and capital investment assumptions into our globally standardized, proprietary discounted cash flow, or DCF, modeling templates. We use scenario analysis, in-depth competitive advantage analysis, and a variety of other analytical tools to augment this process. Moreover, we think analyzing valuation through discounted cash flows presents a better lens for viewing cyclical companies, high-growth firms, businesses with finite lives (e.g., mines), or companies expected to generate negative earnings over the next few years. That said, we don't dismiss multiples altogether but rather use them as supporting cross-checks for our DCF-based fair value estimates. We also acknowledge that DCF models offer their own challenges (including a potential proliferation of estimated inputs and the possibility that the method may miss short-term market price movements), but we believe these negatives are mitigated by deep analysis and our long-term approach.

Morningstar's equity research group ("we," "our") believes that a company's intrinsic worth results from the future cash flows it can generate. The Morningstar Rating for stocks identifies stocks trading at a discount or premium to their intrinsic worth—or fair value estimate, in Morningstar terminology. Five-star stocks sell for the biggest risk-adjusted discount to their fair values, whereas 1-star stocks trade at premiums to their intrinsic worth.

Morningstar Research Methodology



Source: Morningstar.

Four key components drive the Morningstar rating: (1) our assessment of the firm's economic moat, (2) our estimate of the stock's fair value, (3) our uncertainty around that fair value estimate, and (4) the current market price. This process ultimately culminates in our single-point star rating.

Economic Moat

The concept of an economic moat plays a vital role not only in our qualitative assessment of a firm's long-term investment potential, but also in the actual calculation of our fair value estimates. An economic moat is a structural feature that allows a firm to sustain excess profits over a long period of time. We define economic profits as returns on invested capital (ROIC) over and above our estimate of a firm's cost of capital, or weighted average cost of capital (WACC). Without a moat, profits are more susceptible to competition. We have identified five sources of economic moats: intangible assets, switching costs, network effect, cost advantage, and efficient scale.

Companies with a narrow moat are those we believe are more likely than not to achieve normalized excess returns for at least the next 10 years. Wide-moat companies are those in which we have very high confidence that excess returns will remain for 10 years, with excess returns more likely than not to remain for at least 20 years. The longer a firm generates economic profits, the higher its intrinsic value. We believe low-quality, no-moat companies will see their normalized returns gravitate toward their cost of capital more quickly than companies with moats.

To assess the sustainability of excess profits, analysts perform ongoing assessments of the moat trend. A firm's moat trend is positive in cases where we think its sources of competitive advantage are growing stronger, stable where we don't anticipate changes to competitive advantages over the next several years, or negative where we see signs of deterioration.

Estimated Fair Value

Combining our analysts' financial forecasts with the firm's economic moat helps us assess how long returns on invested capital are likely to exceed the firm's cost of capital. Returns of firms with a wide economic moat rating are assumed to fade to the perpetuity period over a longer period of time than the returns of narrow-moat firms, and both will fade slower than no-moat firms, increasing our estimate of their intrinsic value.

Our model is divided into three distinct stages:

Stage I: Explicit Forecast

In this stage, which can last 5 to 10 years, analysts make full financial statement forecasts, including items such as revenue, profit margins, tax rates, changes in working capital accounts, and capital spending. Based on these projections, we calculate earnings before interest, after taxes (EBI) and net new investment (NNI) to derive our annual free cash flow forecast.

Stage II: Fade

The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested (RONIC)—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling the income statement, balance sheet, and cash flow statement as we do in Stage I. The length of the second stage depends on the strength of the company's economic moat. We forecast this period to last anywhere from one year (for companies with no economic moat) to 10–15 years or more (for wide-moat companies). During this period, cash flows are forecast using four assumptions: an average growth rate for EBI over the period, a normalized investment rate, average return on new invested capital (RONIC), and the number of years until perpetuity, when excess returns cease. The investment rate and return on new invested capital decline until a perpetuity value is calculated. In the case of firms that do not earn their cost of capital, we assume marginal ROICs rise to the firm's cost of capital (usually attributable to less reinvestment), and we may truncate the second stage.

Stage III: Perpetuity

Once a company's marginal ROIC hits its cost of capital, we calculate a continuing value, using a standard perpetuity formula. At perpetuity, we assume that any growth or decline or investment in the business neither creates nor destroys value and that any new investment provides a return in line with estimated WACC.

Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total present value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return to all capital providers—we discount future cash flows using the WACC, which is a weighted average of the costs of equity, debt, and preferred stock (and any other funding sources), using expected future proportionate long-term, market value weights.

Uncertainty Around That Fair Value Estimate

Morningstar's uncertainty rating captures a range of likely potential intrinsic values for a company and uses it to assign the margin of safety required before investing, which in turn explicitly drives our stock star rating system. The uncertainty rating represents the analysts' ability to bound the estimated value of the shares in a company around the fair value estimate, based on the characteristics of the business underlying the stock, including operating and financial leverage, sales sensitivity to the overall economy, product concentration, pricing power, and other company-specific factors.

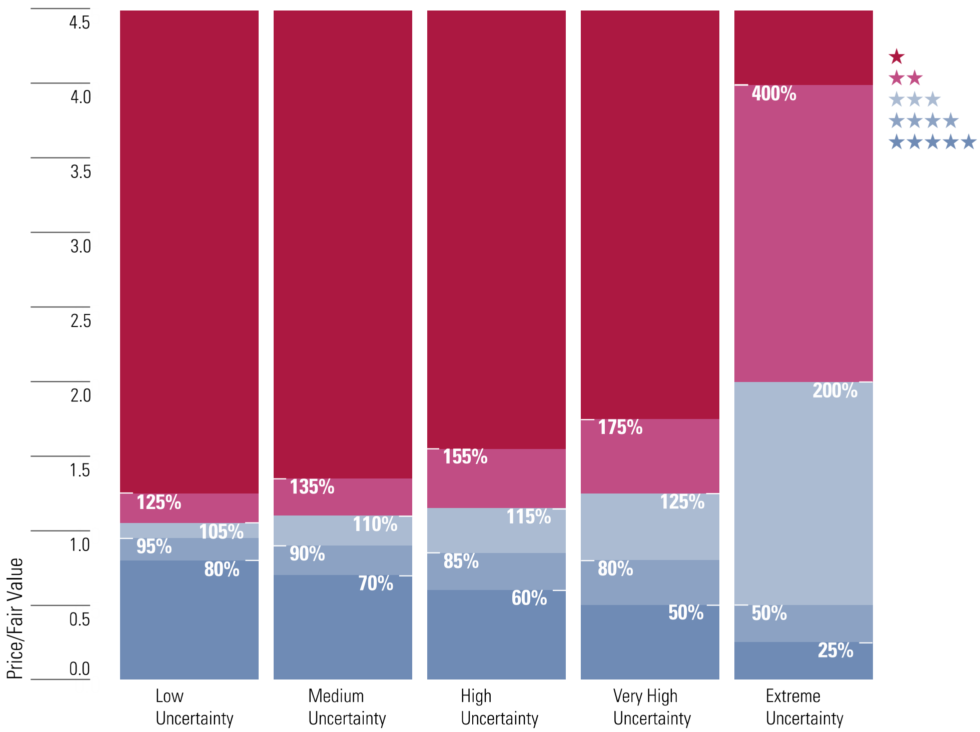
Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case and a 25% probability that the company will perform worse than the bear case. The distance between the bull and bear cases is an important indicator of the uncertainty underlying the fair value estimate.

Our recommended margin of safety widens as our uncertainty regarding the estimated value of the equity increases. The more uncertain we are about the estimated value of the equity, the greater the discount we require relative to our estimate of the value of the firm before we would recommend the purchase of the shares. In addition, the uncertainty rating provides guidance in portfolio construction based on risk tolerance.

Our uncertainty ratings for our qualitative analysis are low, medium, high, very high, and extreme.

- Low: Margin of safety for 5-star rating is a 20% discount and for 1-star rating is a 25% premium.
- Medium: Margin of safety for 5-star rating is a 30% discount and for 1-star rating is a 35% premium.
- High: Margin of safety for 5-star rating is a 40% discount and for 1-star rating is a 55% premium.
- Very high: Margin of safety for 5-star rating is a 50% discount and for 1-star rating is a 75% premium.
- Extreme: Margin of safety for 5-star rating is a 75% discount and for 1-star rating is a 300% premium.

Morningstar Equity Research Star Rating Methodology



Market Price

The market prices used in this analysis and noted in the report come from the exchange on which the stock is listed, which we believe is a reliable source.

For more details about our methodology, please go to http://global.morningstar.com/equitydisclosures.

Morningstar Star Rating for Stocks

Once we determine the fair value estimate of a stock, we compare it with the stock's current market price on a daily basis, and the star rating is automatically recalculated at the market close on every day the market on which the stock is listed is open. Our analysts keep close tabs on the companies they follow and, based on thorough and ongoing analysis, raise or lower their fair value estimates as warranted.

Please note, there is no predefined distribution of stars. That is, the percentage of stocks that earn 5 stars can fluctuate daily, so the star ratings, in the aggregate, can serve as a gauge of the broader market's valuation. When there are many 5-star stocks, the stock market as a whole is more undervalued, in our opinion, than when very few companies garner our highest rating.

We expect that if our base-case assumptions are true, the market price will converge on our fair value estimate over time, generally within three years (although it is impossible to predict the exact time frame in which market prices may adjust).

Our star ratings are guideposts to a broad audience, and individuals must consider their own specific investment goals, risk tolerance, tax situation, time horizon, income needs, and complete investment portfolio, among other factors.

The Morningstar Star Ratings for stocks are defined below:

★★★★★ We believe appreciation beyond a fair risk-adjusted return is highly likely over a multiyear time frame. Scenario analysis developed by our analysts indicates that the current market price represents an excessively pessimistic outlook, limiting downside risk and maximizing upside potential.

★★★★ We believe appreciation beyond a fair risk-adjusted return is likely.

★★★ Indicates our belief that investors are likely to receive a fair risk-adjusted return (approximately cost of equity).

★★ We believe investors are likely to receive a less than fair risk-adjusted return.

★ Indicates a high probability of undesirable risk-adjusted returns from the current market price over a multiyear time frame, based on our analysis. Scenario analysis by our analysts indicates that the market is pricing in an excessively optimistic outlook, limiting upside potential and leaving the investor exposed to capital loss.

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