Research Highlights

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

Morningstar Equity Research
Sept. 17-21, 2018

Contents

Disclosure
The conduct of Morningstar's analysts is governed by Code of Ethics/Code of Conduct Policy, Personal Security Trading Policy (or an equivalent of), and Investment Research Policy. For information regarding conflicts of interest, please visit: http://global.morningstar.com/equitydisclosures

Shares of Boston Beer Are Priced for Perfection

Boston Beer's shares have soared since the beginning of the year, climbing more than 60% versus a 7% increase in the S&P 500 index, as a return to depletion growth in the first half has led to renewed confidence about the firm's top-line trajectory. However, our outlook for sales growth remains more moderate than consensus, as we contend that the market is overly optimistic about the company's potential for volume gains in a slowing and fragmented craft beer market.

While our view of Boston Beer's narrow moat (formed by the brand equity of its flagship Sam Adams brand and its ingrained relationships with wholesalers) is unwavering, we expect competition from both small craft brewers and the largest beer producers to remain fierce, constraining its top line to mid-single-digit growth longer term, in line with our outlook for the broader craft beer category. Further, we expect that growing volumes and further progress in its cost-savings initiatives will help Boston Beer strengthen its profitability. This should provide the firm with the resources needed to reinforce its brand investments and maintain a strong pipeline of innovation, which we consider essential to support its volume recovery.

However, these dynamics have already been incorporated into our longer-term thesis for Boston Beer, and we don't think recent results reflect a material change to its fundamentals. In this context, we view the firm's rapidly expanding multiple as unwarranted, and suggest investors wait for a more attractive entry point.

- While we expect overall U.S. beer volumes to remain flat, we see further opportunity in the craft segment as ongoing premiumization trends prop up volumes. However, we contend this space is maturing, and expect decelerating growth and heightened competition as a result.
- Boston Beer's entrenchment in wholesale supply chains is a meaningful competitive advantage, and we expect these relationships will help it maintain a strong presence on shelves even as distributors and retailers rationalize the number of craft beers stocked.
- Shares look substantially overvalued at more than 40 times forward earnings, and we view the valuation of wide-moat Anheuser-Busch InBev and narrow-moat Molson Coors more favorably.

Sonia Vora | sonia.vora@morningstar.com

China Steel Industry: Are Overcapacity Issues Resolved?

China's steel industry has long been affected by overcapacity issues. From 2016 to 2017, the Chinese government began to rationalize the steel industry by shutting down 115 million tonnes of steel production capacity. This is in addition to the shutdown of around 120 million-140 million tonnes of off-the-books induction furnace capacity, which produced substandard steel, or ditiaogang, from melting scrap. This tightened the steel market in China, leading to higher steel prices and profitability for the steelmakers. Share prices of our Asian steel coverage nearly doubled from the beginning of 2016 to peak in February 2018.

However, in recent months, our Asian steel coverage has declined by around 20% from its peak. This could be partly due to: (1) trade war concerns; and (2) concerns regarding a slowdown in Chinese steel demand going forward, driven by weaker construction end demand. In the long run, we expect overcapacity issues to persist, as new electric arc furnaces are expected to be built concurrent with declining apparent steel demand. We remain selective and prefer companies that focus on high-grade steel products and have a diversified business model.

- China apparent steel demand is expected to decline by a CAGR of 0.8% from 2017 to 2027, mainly driven by weakness from construction end demand, which is partly mitigated by consumer-oriented end demand as China transitions to a consumer-driven economy from an investment-oriented economy.
- Over the next few years, new electric arc furnaces are expected to be built with the growing availability of steel scrap, resulting in ongoing overcapacity in the China steel industry. This new supply, coupled with falling demand, could result in utilization rates declining to 75% in 2027 from 81% in 2017.
- We see modest upside in Posco and NSSMC, owing to their focus on high-grade steel products, diversified business models, and prudent capital management, resulting in a more resilient earnings profile.
- We think Angang Steel and CSC are overvalued, as we expect them to face strong competition from peers in an overcapacity environment due to the commoditized nature of their steel products.

Ken Foong, CFA | ken.foong@morningstar.com

Independent Refiners' Good Time Looks to Keep Rolling

Independent refiners have outpaced the rest of the sector since last fall, when hurricanes disrupted operations sufficiently to reduce inventories, inflating margins while creating bottlenecks that widened crude spreads. Despite normalization of operations, the strong margins and wide crude spreads have persisted, creating a very favorable environment for refiners. Although elevated gasoline inventories present a risk, distillate inventories are near five-year lows, while demand for both is strong and the economy is healthy, suggesting total margin strength will continue. Meanwhile, pipeline constraints don't appear likely to be alleviated until late 2019, likely extending wide crude spreads for another year. At that point, the impact of IMO 2020 is likely to begin, which could ultimately extend the favorable market conditions another couple of years until the global refining system adjusts. In short, the outlook is good. While we see valuations as largely reflective of this outlook, cash returns to shareholders are likely to be strong as well, offering a reason to hang on. Marathon Petroleum remains our Best Idea in the sector, largely on valuation.

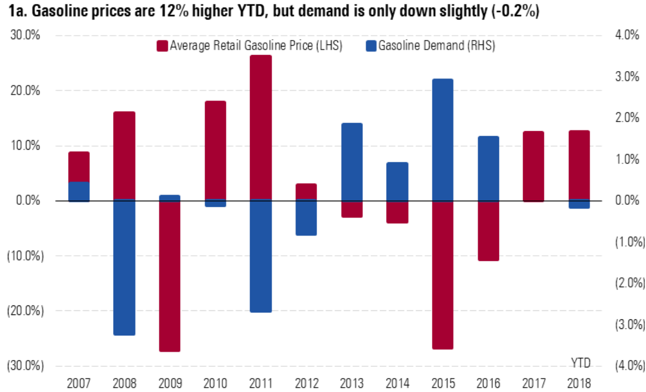
- ► Despite higher prices, gasoline demand has only fallen slightly year to date while hitting weekly record levels, but higher production has translated into elevated inventory levels, which presents a key risk to refiners' margins.
- ► However, low inventories have distillate margins at multiyear highs, while wide crude spreads are likely to remain in place through the end of 2019, supporting the overall margin for refiners.
- ► IMO 2020 could extend strong conditions for another several years as the global refining system adjusts to the bump in distillate demand. U.S. refiners are well positioned with high-complexity facilities and low residual fuel yields.
- ► Future curves, earnings estimates, and share prices already seem to be largely anticipating a continuation of strong market conditions from IMO 2020, leaving further upside limited and downside risk elevated.

Gasoline Margin Weakness Could Spoil the Party

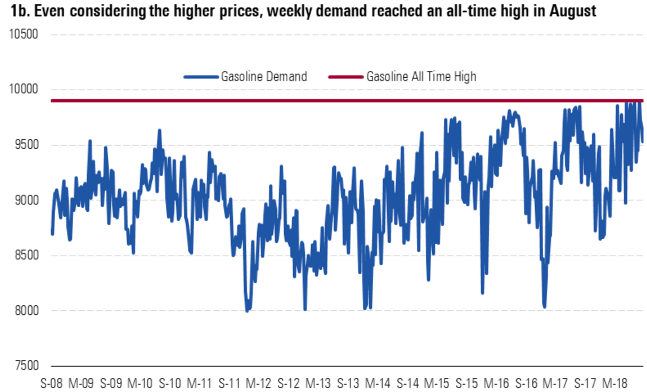
Since last fall, refining margins have been strong, reaching their highest levels since 2015. However, the strength has largely been concentrated in the distillate margin, as gasoline margins have fallen below 2017 levels. While we previously expressed concerns on gasoline demand given rising prices, demand has performed relatively well, falling just 0.2% through August compared with the same period in 2017 despite a 12% increase in prices. In fact, weekly demand reached record levels in late August even as gasoline retail prices were about 15% higher than the same week a year before. Although already at their lowest in four years, gasoline margins remain at risk, however. Thanks to strength in distillate margins and wide crude spreads, refiners' total margin has remained attractive, incentivizing high utilization rates; combined with capacity increases, this has resulted in record levels of production (Exhibit 1c). While gasoline exports have grown, this has been insufficient to overcome the higher production volumes leading to record inventory levels in absolute levels (Exhibit 1d), while days of supply have risen to the top of the five-year average range (Exhibit 1e). Last year at this time, disruptions following the landfall of Hurricane Harvey led to a correction in inventories and a rebound in gasoline margins. Other than another storm, however, it's unclear what could reduce inventories and bolster margins. Despite demand having held up relatively well, the strong economy has failed to translate into materially higher demand, given the price headwinds and structural changes in demand patterns. As such, it's unlikely that continued economic strength in 2019 will bring a boost in demand growth to alleviate inventories, unless a decline in prices stimulates demand growth, as it did in 2015 and 2016. In the meantime, distillate margins are likely to remain healthy, incentivizing refiners to run at high utilization levels at the same time that gasoline demand experiences seasonal weakness, which could result in an acceleration of inventory builds and weakening of gasoline margins beyond typical seasonality until the summer driving season kicks off in 2019.

Exhibit 1 High Inventories Mean the Outlook for Gasoline Margins Is Risky

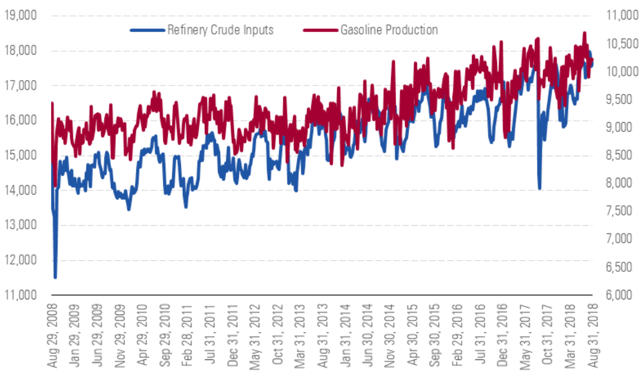
1a. Gasoline prices are 12% higher YTD, but demand is only down slightly (-0.2%)



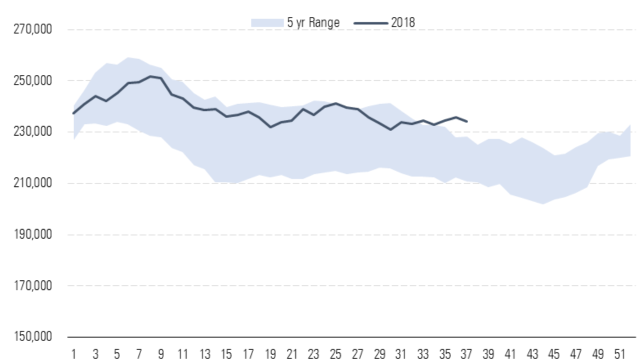
1b. Even considering the higher prices, weekly demand reached an all-time high in August



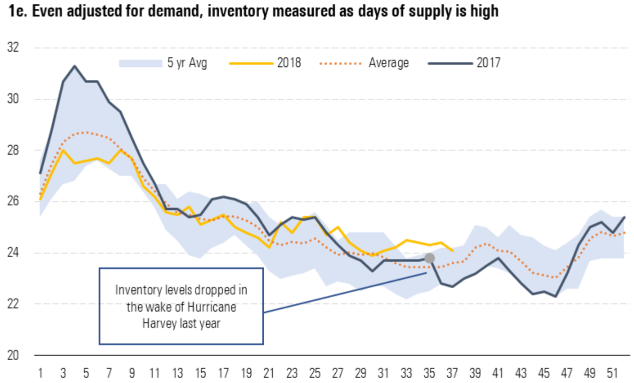
1c. However, refinery crude inputs and gasoline production are also at record highs



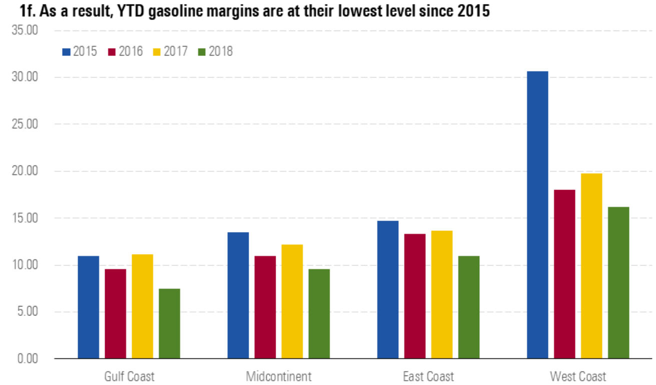
1d. The higher production is keeping inventories slightly above historical average ranges



1e. Even adjusted for demand, inventory measured as days of supply is high



1f. As a result, YTD gasoline margins are at their lowest level since 2015



Source: Morningstar Commodity, EIA, Morningstar Equity Research

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)	★★★★★	$17	$9.98	High	Narrow	0.59	3.79	Inton
Compass Minerals International (CMP)	★★★★	$83	$69.7	High	Wide	0.84	2.36	Goldstein
Martin Marietta Materials (MLM)	★★★★	$265	$195.49	High	Narrow	0.74	12.32	Inton
Communication Services								
BT Group (BT.A)	★★★★	GBX 360	GBX 226.15	High	Narrow	0.63	22.44	C. Nichols
China Mobile (941)	★★★★	HKD 100	HKD 76.25	Medium	Narrow	0.76	1561.26	Baker
Comcast (CMCSA)	★★★★	$42	$37.81	Medium	Wide	0.90	173.24	Macker
Telefonica (TEF)	★★★★★	$13	$6.63	High	Narrow	0.51	34.44	C. Nichols
Telstra (TLS)	★★★★	AUD 4.4	AUD 3.15	Medium	Narrow	0.72	37.46	Han
Consumer Cyclical								
Alibaba Group Holding (BABA)	★★★★	$240	$165.88	High	Wide	0.69	426.63	Hottovy
Bayerische Motoren Werke (BMW)	★★★★	EUR 117	EUR 85.32	High	Narrow	0.73	55.45	Hilgert
Expedia Group (EXPE)	★★★★	$185	$134.43	High	Narrow	0.73	20.09	Wasiolek
General Motors (GM)	★★★★	$45	$36.08	High	None	0.80	50.90	Whiston
Hanesbrands (HBI)	★★★★★	$27	$18.63	Medium	Narrow	0.69	6.72	Hottovy
InvoCare (IVC)	★★★★	AUD 17	AUD 12.02	Medium	Wide	0.71	1.32	Ragonese
Mattel (MAT)	★★★★	$21.5	$16.61	High	Narrow	0.77	5.72	Katz
Norwegian Cruise Line Holdings (NCLH)	★★★★	$69	$57.46	High	Narrow	0.83	12.73	Katz
Walt Disney (DIS)	★★★★	$130	$111.62	Medium	Wide	0.86	166.01	Macker
WPP (WPP)	★★★★	GBX 1500	GBX 1134	Medium	Narrow	0.76	14.31	Mogharabi
Consumer Defensive								
G8 Education (GEM)	★★★★★	AUD 3.5	AUD 1.97	High	None	0.56	0.90	James
General Mills (GIS)	★★★★★	$59	$44.37	Low	Wide	0.75	26.45	Vora
Imperial Brands (IMB)	★★★★★	GBX 3700	GBX 2592.5	Low	Wide	0.70	24.73	Gorham
Kao (4452)	★★★	JPY 8800	JPY 8645	Low	Wide	0.98	4213.75	Wei
Mondelez International (MDLZ)	★★★★	$52	$43.87	Medium	Wide	0.84	64.34	Lash
PepsiCo (PEP)	★★★★	$123	$115.22	Low	Wide	0.94	162.96	Vora
Procter & Gamble (PG)	★★★★	$97	$85.36	Low	Wide	0.88	212.47	Lash
Reckitt Benckiser Group (RB.)	★★★★	GBX 7300	GBX 6845	Low	Wide	0.94	48.39	Gorham
Energy								
Cenovus Energy (CVE)	★★★★	$21	$11.89	Very High	None	0.57	14.61	Gemino
Enbridge (ENB)	★★★★	$64	$44.41	Medium	Wide	0.69	76.58	Gemino
Enterprise Products Partners (EPD)	★★★★	$35.5	$29.01	Low	Wide	0.82	63.12	Ellis
Royal Dutch Shell (RDS.B)	★★★★	$83	$68.83	Medium	Narrow	0.83	274.70	Good
Total (TOT)	★★★★	$77	$64.03	Medium	None	0.83	164.74	Good
Woodside Petroleum (WPL)	★★★★	AUD 46.5	AUD 36.95	High	None	0.79	34.59	Taylor
Financial Services								
Agricultural Bank of China (601288)	★★★	CNY 4.2	CNY 3.93	High	Narrow	0.94	1358.72	Tan
American International Group (AIG)	★★★★	$76	$54.32	Medium	None	0.71	48.26	Horn
Capital One Financial (COF)	★★★★	$127	$99.26	Medium	Narrow	0.78	47.49	Plunkett
Credit Suisse Group (CSGN)	★★★★	CHF 22	CHF 15.26	High	Narrow	0.69	38.93	Scholtz

Source: Morningstar. As of Sept. 21, 2018

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 (cont.)								
Invesco (IVZ)	★★★★★	$35	$24.41	Medium	Narrow	0.70	10.03	Warren
Mitsubishi UFJ Financial Group (8306)	★★★★	JPY 880	JPY 722.1	Medium	None	0.82	9444.12	Wu
Pendal Group (PDL)	★★★★	AUD 11	AUD 8.69	Medium	Narrow	0.79	2.44	Likos
Westpac Banking (WBC)	★★★★	AUD 35	AUD 28.16	Medium	Wide	0.80	95.35	Ellis
Healthcare								
Allergan (AGN)	★★★★	$263	$192.51	Medium	Wide	0.73	65.35	Waterhouse
McKesson (MCK)	★★★★★	$210	$135.85	Medium	Wide	0.65	27.14	Lekraj
Medtronic (MDT)	★★★★	$105	$97.48	Medium	Wide	0.93	131.65	Wang
Ramsay Health Care (RHC)	★★★★	AUD 76	AUD 54.82	Medium	Narrow	0.72	11.08	Kallos
Roche Holding (ROG)	★★★★★	CHF 337	CHF 235.15	Low	Wide	0.70	200.90	Andersen
Industrials								
Anixter International (AXE)	★★★★★	$107	$73.15	Medium	Narrow	0.68	2.45	Bernard
Beijing Enterprises Holdings (392)	★★★★★	HKD 58	HKD 41.6	Medium	Narrow	0.72	52.50	Song
CK Hutchison Holdings (1)	★★★★	HKD 118	HKD 90.6	Medium	None	0.77	349.38	Tan
G4S (GFS)	★★★★	GBX 337	GBX 241.9	Medium	None	0.72	3.75	Field
GEA Group (G1A)	★★★★★	EUR 47	EUR 32.95	Medium	Wide	0.70	5.95	Molina
General Dynamics (GD)	★★★	$220	$202.86	Medium	Wide	0.92	60.10	Higgins
Grupo Aeroportuario del Pacifico (GAP B)	★★★	MXN 217	MXN 200.35	High	Wide	0.92	112.40	Higgins
Guangshen Railway (525)	★★★★★	HKD 6.5	HKD 3.5	High	None	0.54	28.13	Song
Johnson Controls International (JCI)	★★★★	$53	$37.37	High	Narrow	0.71	34.56	Bernard
Kion Group (KGX)	★★★★★	EUR 90	EUR 54.02	Medium	Narrow	0.60	6.36	Molina
Royal Philips (PHIA)	★★★	EUR 42	EUR 39.3	Medium	Narrow	0.94	36.61	Vonk
Sodexo (SW)	★★★★	EUR 110	EUR 93.08	Medium	Narrow	0.85	13.56	Field
Stericycle (SRCL)	★★★★	$86	$61.72	High	Narrow	0.72	5.30	Young
Real Estate								
Aveo Group (AOG)	★★★★	AUD 2.8	AUD 2.06	Medium	None	0.74	1.20	Sherlock
Sun Hung Kai Properties (16)	★★★★	HKD 153	HKD 116.9	Medium	Narrow	0.76	338.66	Zhong
Welltower (WELL)	★★★	$74	$65.57	High	None	NA	24.39	Brown
Technology								
Intel (INTC)	★★★★	$65	$47.2	Medium	Wide	0.73	217.64	Davuluri
Microchip Technology (MCHP)	★★★★	$112	$83.38	Medium	Wide	0.74	19.64	Colello
MYOB Group (MYO)	★★★★	AUD 3.82	AUD 2.94	Medium	Narrow	0.77	1.76	James
Synaptics (SYNA)	★★★★	$64	$47.26	Very High	None	0.74	1.65	Davuluri
TDK (6762)	★★★	JPY 12500	JPY 12720	High	None	1.02	1605.84	Ito
Tencent Holdings (700)	★★★★★	HKD 590	HKD 334.4	High	Wide	0.57	3184.04	Tam
Utilities								
Dominion Energy (D)	★★★★	$84	$70.32	Low	Wide	0.84	45.97	Fishman
Enel (ENEL)	★★★★	EUR 5.7	EUR 4.54	Medium	None	0.80	46.24	Fulop
FirstEnergy (FE)	★★★★	$41	$36.86	Low	Narrow	0.90	17.91	Fishman
Scana (SCG)	★★★★★	$56	$34.93	Medium	Narrow	0.62	4.98	Miller

Source: Morningstar. As of Sept. 21, 2018

Highlighted Stocks

General Mills GIS

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★★	Consumer	Negative	USD	59	44.52	Low	Wide	0.75	26.45

Source: Morningstar. As of Sept. 21, 2018

General Mills' road to recovery may be rocky over the near term, as it continues to integrate Blue Buffalo and weather-elevated input costs, but we're holding steady on our longer-term outlook, which calls for low-single-digit sales growth and average operating margin in the high teens.

Analyst Note, Sept. 18, 2018
We still see opportunity in shares of wide-moat General Mills following largely solid first-quarter results, including 9% sales growth (in line with our 9%-10% expectation for the year and including Blue Buffalo), with two thirds of these gains driven by volume. While adjusted gross margin contracted 160 basis points to below 34%, this was largely due to a one-time purchase accounting charge related to the Blue Buffalo acquisition (130 basis point impact to gross margin), as well as industrywide input cost inflation, which management expects to amount to 5% of cost of goods sold this year (1% above the year prior). We expect strengthening price/mix (incorporating a low-single-digit increase into our full-year outlook) and further benefits from the firm's cost-savings initiatives will help mitigate these headwinds as the year progresses, and we are maintaining our annual expectation for gross margin of 34%-35%.

General Mills' road to recovery may be rocky over the near term, as it continues to integrate Blue Buffalo and weather-elevated input costs, but we're holding steady on our longer-term outlook, which calls for low-single-digit sales growth and average operating margin in the high teens. Consequently, we aren't anticipating a significant change to our $59 fair value estimate.

Performance in the North America retail segment (roughly 60% of sales) continues to recover, with management citing share gains in eight of the firm's nine categories, thanks to efforts to revitalize its portfolio and develop offerings that better resonate with consumer preferences. In this context, we were pleased to see further improvement in the cereal and yogurt categories, which contribute nearly a third of sales in aggregate. U.S. cereal sales increased around 1% (gaining 10 basis points of market share, according to management), due to healthy results for core brands like Trix (60% retail sales growth) and Lucky Charms (9% retail sales growth).

Sonia Vora | sonia.vora@morningstar.com

BorgWarner BWA

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Consumer	Negative	USD	56	45.30	High	Narrow	0.81	9.56

Source: Morningstar. As of Sept. 21, 2018

We maintain that the market has undervalued BorgWarner's growth potential.

Analyst Note, Sept. 19, 2018

At its annual investor day, narrow-moat-rated BorgWarner trimmed its 2018 guidance and set 2023 targets including 7% annualized revenue growth and margin expansion of roughly 90 basis points from 2017. The change in 2018 guidance included reduced revenue of $10.49 billion-$10.58 billion, down from prior guidance of $10.64 billion-$10.75 billion. Earnings per share before special items guidance is now $4.35-$4.40, a reduction of $0.10 from previous guidance of $4.45-$4.50. The lower guidance was attributable to lower-than-expected volumes in China and Europe. Consequently, we have reduced our 2018 revenue and EPS forecasts to $10.53 billion and $4.35, respectively.

We were impressed with BorgWarner's 2023 targets. Management projects revenue of $14.0 billion in 2023, equating to 6% annualized revenue growth from $9.8 billion in 2017. While management factors in declining industry volume of internal combustion engine powertrains, the company believes that it can maintain 1% annualized growth from these vehicles. Hybrid and battery electric are the primary growth drivers behind 2023 revenue growth expectations. BorgWarner's addressable market for these technologies is expected to grow by an astounding 73% annually for both hybrids and battery electrics.

We maintain that the market has undervalued BorgWarner's growth potential. Our DCF model includes growth that averages nearly 7% in the first three years of our Stage I forecast, including a favorable currency effect from a slightly stronger dollar versus the euro. However, in years four and five, we forecast revenue to be roughly flat and then decline by 3%, going into our normalized midcycle assumptions. As a result, our revenue forecast in 2022 is $11.6 billion, significantly below management's targeted growth. Despite our model assumptions, our fair value estimate is $56, representing an attractive 21% discount to the market.

Richard Hilgert | richard.hilgert@morningstar.com

Microsoft MSFT

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Technology	Stable	USD	130	113.94	Medium	Wide	0.88	870.88

Source: Morningstar. As of Sept. 21, 2018

Under Nadella, the firm is not reliant on Windows and Office. Today, Microsoft is capitalizing on incremental investments in cloud computing and artificial intelligence.

Analyst Note, Sept. 19, 2018
After transferring coverage of Microsoft to a new analyst, we are raising our fair value estimate to $130 per share from $122. We maintain our wide moat, stable trend, and medium uncertainty ratings. We have raised our stewardship rating to Exemplary to reflect CEO Satya Nadella's ability to radically transform Microsoft's culture in only a few years. With the shares trading at a discount to our fair value estimate, we still see additional upside for Microsoft and an attractive margin of safety for investors.

After Nadella took the helm, the firm has revitalized itself. In our opinion, Microsoft is increasingly a cloud leader, the business is more user-friendly, the firm is willing to take risks in investing in nascent technologies, and employees have implemented a growth mindset. We see Microsoft's future as oriented around Office 365, Azure, and LinkedIn, while seeing broad-based contributions from smaller segments such as Xbox, Surface, and Dynamics.

The words "Microsoft" and "monopoly" were embodied in the zeitgeist of the 1990s tech boom. While these two words may not be uttered in the same sentence as frequently now, we firmly believe Microsoft's offerings maintain monopolistic qualities. Under Nadella, the firm is not reliant on Windows and Office. Today, Microsoft is capitalizing on incremental investments in cloud computing and artificial intelligence, in addition to its purchase of LinkedIn, which gives it exposure to social media and the inherent data and network within the platform. The recent acquisition of GitHub provides another degree of optionality, with access to a premier developer ecosystem. Azure, Microsoft's public cloud offering, capitalizes on workloads moving to the public cloud while serving as a hedge against declines in legacy businesses. These various factors give us confidence in a wide economic moat rating for the aggregate business.

We model modest declines for the Windows operating system. Although Windows 10 takes the title for Microsoft's fastest-growing OS and we still expect enterprise and consumer growth, the shift to software-as-a-service applications and the rise in new form factors, such as mobile and tablet devices, have eroded Window's stranglehold on the computing industry.

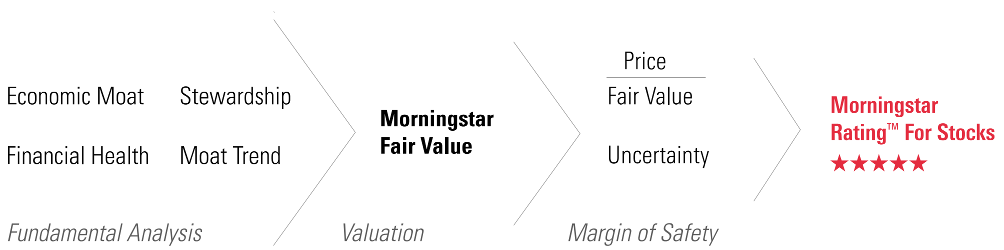
William Fitzsimmons | william.fitzsimmons@morningstar.com

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.

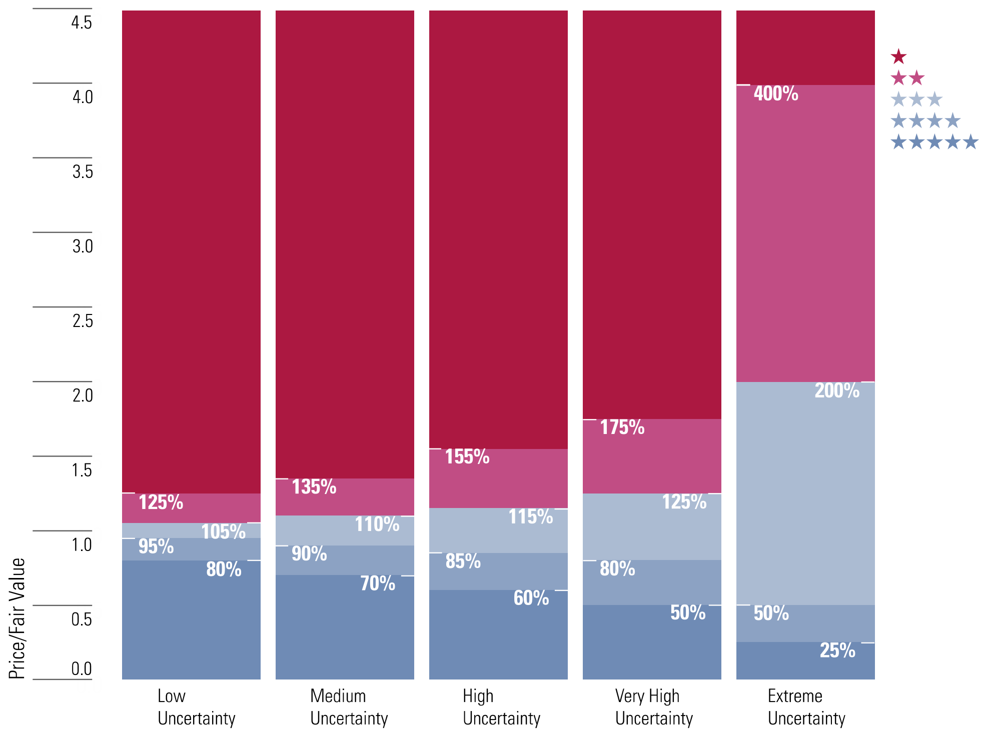
Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case and a 25% probability that the company will perform worse than 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.

Risk Warning

Please note that investments in securities are subject to market and other risks, and there is no assurance or guarantee that the intended investment objectives will be achieved. Past performance of a security may or may not be sustained in the future and is no indication of future performance. A security investment return and an investor's principal value will fluctuate so that, when redeemed, an investor's shares may be worth more or less than their original cost. A security's current investment performance may be lower or higher than the investment performance noted within the report. Morningstar's uncertainty rating serves as a useful data point with respect to sensitivity analysis of the assumptions used in our determining a fair value price.

General Disclosure

Unless otherwise provided in a separate agreement, recipients accessing this report may only use it in the country in which the Morningstar distributor is based. Unless stated otherwise, the original distributor of the report is Morningstar Research Services LLC, a U.S.-domiciled financial institution.

This report is for informational purposes only and has no regard to the specific investment objectives, financial situation or particular needs of any specific recipient. This publication is intended to provide information to assist institutional investors in making their own investment decisions, not to provide investment advice to any specific investor. Therefore, investments discussed and recommendations made herein may not be suitable for all investors: Recipients must exercise their own independent judgment as to the suitability of such investments and recommendations in the light of their own investment objectives, experience, taxation status, and financial position.

The information, data, analyses, and opinions presented herein are not warranted to be accurate, correct, complete, or timely. Unless otherwise provided in a separate agreement, neither Morningstar, Inc. nor the Equity Research Group represents that the report contents meet all of the presentation and/or disclosure standards applicable in the jurisdiction the recipient is located.

Except as otherwise required by law or provided for in a separate agreement, the analyst, Morningstar, Inc., and the Equity Research Group and their officers, directors, and employees shall not be responsible or liable for any trading decisions, damages, or other losses resulting from, or related to, the information, data, analyses, or opinions within the report. The Equity Research Group encourages recipients of this report to read all relevant issue documents (e.g., prospectus) pertaining to the security concerned, including without limitation, information relevant to its investment objectives, risks, and costs before making an investment decision and, when deemed necessary, to seek the advice of a legal, tax, and/or accounting professional.

The Report and its contents are not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country, or other jurisdiction where such distribution, publication, availability, or use would be contrary to law or regulation or which would subject Morningstar, Inc. or its affiliates to any registration or licensing requirements in such jurisdiction.

Where this report is made available in a language other than English and in the case of inconsistencies between the English and translated versions of the report, the English version will control and supersede any ambiguities associated with any part or section of a report that has been issued in a foreign language. Neither the analyst, Morningstar, Inc., nor the Equity Research Group guarantees the accuracy of the translations.

This report may be distributed in certain localities, countries and/or jurisdictions ("Territories") by independent third parties or independent intermediaries and/or distributors ("Distributors"). Such Distributors are not acting as agents or representatives of the analyst, Morningstar, Inc., or the Equity Research Group. In Territories where a Distributor distributes our report, the Distributor is solely responsible for complying with all applicable regulations, laws, rules, circulars, codes, and guidelines established by local and/or regional regulatory bodies, including laws in connection with the distribution third-party research reports.

Conflicts of Interest

- No interests are held by the analyst with respect to the security subject of this investment research report.
    - Morningstar, Inc. may hold a long position in the security subject of this investment research report that exceeds 0.5% of the total issued share capital of the security. To determine if such is the case, please click http://msi.morningstar.com and http://mdi.morningstar.com.
- Analysts' compensation is derived from Morningstar, Inc.'s overall earnings and consists of salary, bonus, and in some cases restricted stock.
- Neither Morningstar, Inc. nor the Equity Research Group receives commissions for providing research nor do they charge companies to be rated.
- Neither Morningstar, Inc. nor the Equity Research Group is a market maker or a liquidity provider of the security noted within this report.
- Neither Morningstar, Inc. nor the Equity Research Group has been a lead manager or co-lead manager over the previous 12 months of any publicly disclosed offer of financial instruments of the issuer.
- Morningstar, Inc.'s investment management group does have arrangements with financial institutions to provide portfolio management/investment advice, some of which an analyst may issue investment research reports on. However, analysts do not have authority over Morningstar's investment management group's business arrangements nor allow employees from the investment management group to participate or influence the analysis or opinion prepared by them.
- Morningstar, Inc. is a publicly traded company (ticker symbol: MORN) and thus a financial institution the security of which is the subject of this report may own more than 5% of Morningstar, Inc.'s total outstanding shares. Please access Morningstar, Inc.'s proxy statement, "Security Ownership of Certain Beneficial Owners and Management" section http://investorrelations.morningstar.com/sec.cfm?doctype=Proxy&year=&x=12
- Morningstar, Inc. may provide the product issuer or its related entities with services or products for a fee and on an arms' length basis including software products and licenses, research and consulting services, data services, licenses to republish our ratings and research in their promotional material, event sponsorship, and website advertising.

Further information on Morningstar, Inc.'s conflict of interest policies is available from http://global.morningstar.com/equitydisclosures. Also, please note analysts are subject to the CFA Institute's Code of Ethics and Standards of Professional Conduct.

For a list of securities that the Equity Research Group currently covers and provides written analysis on, please contact your local Morningstar office. In addition, for historical analysis of securities covered, including their fair value estimate, please contact your local office.

For Recipients in Australia: This Report has been issued and distributed in Australia by Morningstar Australasia Pty Ltd (ABN: 95 090 665 544; ASFL: 240892). Morningstar Australasia Pty Ltd is the provider of the general advice ('the Service') and takes responsibility for the production of this report. The Service is provided through the research of investment products. To the extent the Report contains general advice, it has been prepared without reference to an investor's objectives, financial situation, or needs. Investors should consider the advice in light of these matters and, if applicable, the relevant Product Disclosure Statement before making any decision to invest. Refer to our Financial Services Guide (FSG) for more information at http://www.morningstar.com.au/fsg.pdf.

For Recipients in Canada: This research is not prepared subject to Canadian disclosure requirements.

For Recipients in Hong Kong: The Report is distributed by Morningstar Investment Management Asia Limited, which is regulated by the Hong Kong Securities and Futures Commission to provide services to professional investors only. Neither Morningstar Investment Management Asia Limited nor its representatives are acting or will be deemed to be acting as an investment advisor to any recipients of this information unless expressly agreed to by Morningstar Investment Management Asia Limited. For enquiries regarding this research, please contact a Morningstar Investment Management Asia Limited Licensed Representative at http://global.morningstar.com/equitydisclosures.

For Recipients in India: This Investment Research is issued by Morningstar Investment Adviser India Private Limited. Morningstar Investment Adviser India Private Limited is registered with the Securities and Exchange Board of India (Registration number INA000001357) and provides investment advice and research. Morningstar Investment Adviser India Private Limited has not been the subject of any disciplinary action by SEBI or any other legal/regulatory body. Morningstar Investment Adviser India Private Limited is a wholly owned subsidiary of Morningstar Investment Management LLC. In India, Morningstar Investment Adviser India Private Limited has one associate, Morningstar India Private Limited, which provides data-related services, financial data analysis, and software development. The Research Analyst has not served as an officer, director, or employee of the fund company within the last 12 months, nor has it or its associates engaged in market-making activity for the fund company.

* The Conflicts of Interest disclosure above also applies to relatives and associates of Manager Research Analysts in India
* The Conflicts of Interest disclosure above also applies to associates of Manager Research Analysts in India. The terms and conditions on which Morningstar Investment Adviser India Private Limited offers Investment Research to clients varies from client to client and are detailed in the respective client agreement.

For recipients in Japan: The Report is distributed by Ibbotson Associates Japan, Inc., which is regulated by Financial Services Agency. Neither Ibbotson Associates Japan, Inc. nor its representatives are acting or will be deemed to be acting as an investment advisor to any recipients of this information.

For recipients in Singapore: For Institutional Investor audiences only. Recipients of this report should contact their financial adviser in Singapore in relation to this report. Morningstar, Inc. and its affiliates rely on certain exemptions (Financial Advisers Regulations, Section 32B and 32C) to provide its investment research to recipients in Singapore.

About Morningstar® Institutional Equity Research™

Morningstar Institutional Equity Research provides independent, fundamental equity research differentiated by a consistent focus on sustainable competitive advantages, or Economic Moats.

For More Information

+1 312 696-6869
equitysupport@morningstar.com

MORNINGSTAR®

22 West Washington Street
Chicago, IL 60602 USA