Research Highlights

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

Morningstar Equity Research
April 9-13, 2018

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Interactive web-based models are available for our Best Ideas at Trefis.

Fleeting Headwinds Provide an Attractive Entry Point for Compass

Compass Minerals' shares have fallen over 15% since the company lowered profit guidance as part of its fourth-quarter earnings release. Investors are concerned that the operational issues facing Compass might represent a new normal for the company's earnings power. We view a sell-off of this magnitude as unwarranted and believe the adverse news flow represents an attractive entry point for a high-quality, wide-moat stock.

The investment thesis expressed in our August 2017 report, "Winter Is Coming: A Song of Ice and Salt," is intact. We continue to see near-term catalysts that will aid Compass' profits, driving the share price higher from current levels near an eight-year low. The 2017-18 U.S. winter saw increased snowfall relative to recent years. Historically, harsher winters have led to increased deicing salt prices as local governments need to replenish inventories. This should provide a much-needed profit boost for Compass' deicing salt business.

Additionally, the resolution of operational hiccups at its cost-advantaged Goderich rock salt mine and subsequent cost-saving program should drive shares higher from their nearly 25% discount to our $82 fair value estimate.

- The 2017-18 U.S. winter saw a rebound in the number of snow days (8% above normal) following two mild winters. Over the next decade, average snowfall should look similar to the trailing 20-year average.
- Deicing salt prices reflect recent snowfall levels. They are typically set during the spring and summer bid season. After a harsher-than-normal winter, we expect Compass to emerge from the 2018 bid season with higher contracted prices for the 2018-19 winter.
- Compass Minerals is navigating operational issues at its cost-advantaged Goderich rock salt mine, the crown jewel of its asset base. We expect the company to fully restore Goderich and resume mining lower-cost salt in the second half of 2018.
- We think some investors lose sight of Compass Minerals' wide economic moat when snowfall levels disappoint. However, we assert that the company's cost advantage will stand the test of time, supported by unique assets with geological advantages that would be nearly impossible to replicate.

Our Above-Consensus Profit Outlook for Compass Minerals Points to Nearly 30% Upside

We value Compass Minerals at $82 per share, implying nearly 30% upside from the current share price. As shown in Exhibit 1, the consensus fair value estimate for Compass is $72 per share. Looking at 2020, the first year we expect to see the full effect of the company's cost-saving program, our revenue forecast is only slightly above consensus, but our operating profit and earnings per share estimates are materially higher. In our view, price-implied expectations are overly focused on Compass' near-term issues and don't adequately reflect the benefits of the company's cost-saving program. We think patient investors will be rewarded as the resumption of normal operations at the flagship Goderich mine clears the path for improved earnings power provided by Compass' cost-saving initiatives.

Exhibit 1 Once the Goderich Mine Is Fully Restored, Lower Unit Costs for Salt Production Will Drive Profit Growth

	Morningstar	**Consensus**
Fair Value Estimate	$82.00	$72.00
2020 Revenue ($ millions)	1,650	1,616
2020 Operating Profit ($ millions)	295	251
2020 EPS	$5.32	$4.42

Source: Morningstar, Capital IQ; data as of April 10, 2018

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Greased Lightning: Valvoline's Strong Brand Should Drive Returns

Although narrow-moat Valvoline has eluded the volatility that has plagued other firms exposed to the aftermarket automotive space (particularly parts retailers), with shares trading near our $24.50 per share valuation and its $22 per share 2016 IPO, we argue that it should be able to leverage its strong North American product lineup as it grows internationally and builds its instant-oil-change presence, meriting vigilance for buying opportunities.

In its North American product segment (nearly half of fiscal 2017 sales), we argue that Valvoline's branded lineup will gain currency as vehicles age and modern engines requiring premium oil become a larger share of the fleet (around half of new vehicles require synthetic oil, which should rise to 70% by 2021). Valvoline's research and marketing investments (4% of 2017 sales, or $74 million) should fuel performance even as service intervals extend while also lifting its quick lube and international units (each about a quarter of its revenue). More complex vehicles should propel Valvoline Instant Oil Change (VIOC), as they promote professional maintenance over DIY efforts.

Among older cars and trucks, Valvoline should capitalize as improved reliability extends service life. Margins outside North America are lower, but we believe Valvoline's expanding international footprint builds on existing product development investments while fostering relationships with global manufacturers, enhancing its standing.

While awaiting a buying opportunity, we suggest investors take aftermarket exposure through narrow-moat Advance Auto Parts, where we believe sentiment is unduly focused on short-term factors and not its long-term advantages, leading to a 30% discount to fair value. Though its lubricant and oil change units are a small part of the firm, no-moat Shell trades 16% below our valuation and is attractive for investors willing to take energy exposure as its margin-building efforts bear fruit.

- Valvoline's lineup is suited to the shift to premium oil, and VIOC should also benefit as its customers are more receptive to high-end items (premium penetration of around 60% versus 50% for the product unit).
- We contend that the instant oil change segment and Valvoline's international push build on the company's product investments while boosting the firm's standing with motorists and OEMs.
- With Valvoline fairly valued, investors should consider Advance Auto Parts, where sentiment is fixated on short-term factors, and, for sector-flexible investors willing to take energy exposure, no-moat Shell.

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Near-Term Risk for Mattel and Hasbro, but Brands Are Resilient

Both Mattel and Hasbro ended 2017 suffering from multiple headwinds, including waning global demand for toy products, entertainment fatigue at the box office, and retailer (Toys R Us) demise, compressing operating margins at both firms (by nearly 1,400 basis points at Mattel and 80 basis points at Hasbro). However, we don't portend that these challenges are likely to thwart potential improvement at either of these competitively advantaged operators.

For one, we believe Mattel and Hasbro's attempts to pivot to attract a wider base of consumers from entertainment and content categories, areas that toy companies have historically been underexposed to, should aid sales longer term. Additionally, rising penetration in international markets, where market share remains low and more consumers continue to move into the middle class, remains an opportunity for Mattel and Hasbro.

If these companies can reignite demand through the perpetual evolution of innovation, it should prop up sales, and in turn, help leverage costs and boost operating margins. We aren't as bullish as management (that aims to boast mid- to high-single-digit sales growth annually); rather, our forecast calls for Mattel and Hasbro to chalk up top-line growth of less than 3% and 4% on average, respectively, over the next decade. This is versus a 5% decline at Mattel and 5% increase at Hasbro over the last five years.

But even after accounting for our tepid forecast, we still view Mattel as significantly undervalued (by more than 35%) as it works slowly through a multiyear turnaround, where we expect to see some cost improvement this year with a $650 million savings plan well underway. Hasbro's shares have similarly traded down in sympathy with Mattel's idiosyncratic problems, at an 11% discount to our fair value estimate, but still remain well positioned to capture upside from exposure to content and digital categories that consumers demand.

- Global demographic headwinds should be the most significant impediment to toy company sales growth over the next 25 years, as the target market for toys shrinks in key markets.
- Toy companies will need to continue to pivot to align offerings with customer demands, including product and purchasing patterns, in order to ensure solid takeaway and pricing, which should support both companies' stable moat trend rating.
- Mattel remains the more undervalued of the two companies, pursuing a stalled multi-year turnaround at the hand of the Toys 'R Us bankruptcy, trading at a more than 35% discount to our $21.50 fair value estimate.

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Best Ideas

Interactive web-based models are available for our Best Ideas at Trefis.

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	$9.94	High	Narrow	0.58	3.97	Inton
Compass Minerals International (CMP)	★★★★	$82	$64.5	High	Wide	0.79	2.18	Goldstein
Communication Services								
BT Group (BT.A)	★★★★	GBX 370	GBX 240.5	High	Narrow	0.65	23.86	C. Nichols
China Mobile (941)	★★★★★	HKD 102	HKD 73.75	Medium	Narrow	0.72	1510.07	Baker
Telefonica (TEF)	★★★★	$13	$8.16	High	Narrow	0.63	42.37	C. Nichols
Telstra (TLS)	★★★★	AUD 4.6	AUD 3.1	Medium	Narrow	0.67	36.87	Han
Consumer Cyclical								
Advance Auto Parts (AAP)	★★★★	$159	$110.57	Medium	Narrow	0.70	8.18	Akbari
Bapcor (BAP)	★★★★	AUD 7	AUD 5.71	Medium	Narrow	0.82	1.60	Ragonese
Bayerische Motoren Werke (BMW)	★★★★	EUR 110	EUR 89.93	High	Narrow	0.82	58.50	Hilgert
Domino's Pizza Enterprises (DMP)	★★★★	AUD 53	AUD 41.25	Medium	Narrow	0.78	3.52	Faul
General Motors (GM)	★★★★	$56	$38.83	High	None	0.69	54.38	Whiston
Great Wall Motor (2333)	★★★★★	HKD 13.5	HKD 7.82	High	None	0.58	109.37	Hu
Hanesbrands (HBI)	★★★★★	$29	$18.56	Medium	Narrow	0.64	6.69	Weishaar
Mattel (MAT)	★★★★	$21.5	$14.68	High	Narrow	0.68	5.05	Katz
TripAdvisor (TRIP)	★★★★	$55	$40.71	High	Narrow	0.74	5.66	Wasiolek
Walt Disney (DIS)	★★★★	$130	$100.39	Medium	Wide	0.77	150.95	Macker
Williams-Sonoma (WSM)	★★★★	$68	$48.87	Medium	Narrow	0.72	4.07	Katz
WPP (WPP)	★★★★	GBX 1500	GBX 1187	Medium	Narrow	0.79	15.03	Mogharabi
Consumer Defensive								
General Mills (GIS)	★★★★★	$59	$44.58	Low	Wide	0.76	25.42	Vora
Imperial Brands (IMB)	★★★★★	GBX 3900	GBX 2466.5	Low	Wide	0.63	23.52	Gorham
Kao (4452)	★★★★	JPY 8800	JPY 7779	Low	Wide	0.88	3833.29	Wei
Mondelez International (MDLZ)	★★★★	$51	$42.03	Medium	Wide	0.82	62.34	Lash
Procter & Gamble (PG)	★★★★	$98	$77.79	Low	Wide	0.79	196.11	Lash
Reckitt Benckiser Group (RB.)	★★★★	GBX 7400	GBX 6036	Low	Wide	0.82	42.52	Gorham
Energy								
Cenovus Energy (CVE)	★★★★	$21	$12.44	Very High	None	0.59	15.29	Gemino
Enbridge (ENB)	★★★★★	$62	$40.22	Medium	Wide	0.65	68.55	Gemino
Enterprise Products Partners (EPD)	★★★★	$30	$25.78	Low	Wide	0.86	55.71	Ellis
Royal Dutch Shell (RDS.B)	★★★★	$78	$69.85	Low	None	0.90	285.44	Good
Total (TOT)	★★★★	$74	$60.3	Medium	None	0.81	159.06	Good
Financial Services								
American International Group (AIG)	★★★★	$76	$53.49	Medium	None	0.70	48.30	Horn
Assicurazioni Generali (G)	★★★	EUR 17.7	EUR 16.2	Very High	None	0.92	25.30	Heathfield
Capital One Financial (COF)	★★★★	$120	$96.88	Medium	Narrow	0.81	47.10	Plunkett
Credit Suisse Group (CSGN)	★★★★	CHF 22	CHF 15.81	High	Narrow	0.72	40.33	Scholtz
Invesco (IVZ)	★★★★	$42	$30.82	Medium	Narrow	0.73	12.66	Warren
Mitsubishi UFJ Financial Group (8306)	★★★★	JPY 880	JPY 715.4	Medium	None	0.81	9416.69	Wu
QBE Insurance Group (QBE)	★★★★	AUD 13	AUD 9.77	High	Narrow	0.75	13.28	Ellis
Westpac Banking (WBC)	★★★★	AUD 35	AUD 28.89	Medium	Wide	0.83	97.83	Ellis

Source: Morningstar. As of April 13, 2018

Best Ideas

Interactive web-based models are available for our Best Ideas at Trefis.

Company and Industry	Morningstar Rating	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price / Fair Value	Market Cap (B)	Analyst
Healthcare								
Allergan (AGN)	★★★★★	$263	$166.31	Medium	Wide	0.63	54.48	Waterhouse
Healthscope (HSO)	★★★★	AUD 2.4	AUD 1.99	Medium	Narrow	0.83	3.47	Kallos
McKesson (MCK)	★★★★★	$210	$143.94	Medium	Wide	0.69	29.70	Lekraj
Medtronic (MDT)	★★★★	$105	$79.84	Medium	Wide	0.76	108.21	Wang
Ramsay Health Care (RHC)	★★★★	AUD 82	AUD 62.7	Medium	Narrow	0.76	12.67	Kallos
Roche Holding (ROG)	★★★★★	CHF 321	CHF 217.1	Low	Wide	0.68	185.93	Andersen
Shire (SHP)	★★★★	GBX 4890	GBX 3685.5	Medium	Narrow	0.75	33.61	Andersen
Industrials								
Anixter International (AXE)	★★★★	$107	$76.4	Medium	Narrow	0.71	2.54	Bernard
Beijing Enterprises Holdings (392)	★★★★	HKD 58	HKD 40.95	Medium	Narrow	0.71	51.68	Song
Brambles (BXB)	★★★★	AUD 11.2	AUD 9.58	Medium	Wide	0.86	15.24	Fleck
CK Hutchison Holdings (1)	★★★★	HKD 124	HKD 92.85	Medium	None	0.75	358.19	Tan
Fluor (FLR)	★★★★	$69	$58.62	High	Narrow	0.85	8.20	Silver
G4S (GFS)	★★★★	GBX 337	GBX 253.4	Medium	None	0.75	3.93	Field
GEA Group (G1A)	★★★★	EUR 47	EUR 31.72	Medium	Wide	0.67	5.77	Molina
Grupo Aeroportuario del Pacifico SAB de CV (GAP B)	★★★★	MXN 225	MXN 192.99	High	Wide	0.86	108.27	Higgins
Guangshen Railway (525)	★★★★	HKD 6.8	HKD 4.48	High	None	0.66	38.19	Song
Johnson Controls International (JCI)	★★★★	$53	$34.21	High	Narrow	0.65	31.68	Bernard
KION GROUP (KGX)	★★★★	EUR 86	EUR 76.6	Medium	Narrow	0.89	9.03	Molina
Royal Philips (PHIA)	★★★★	EUR 40	EUR 32.12	Medium	Narrow	0.80	29.75	Vonk
Sodexo (SW)	★★★★	EUR 110	EUR 78.12	Medium	Narrow	0.71	11.61	Field
Stericycle (SRCL)	★★★★	$86	$58.74	High	Narrow	0.68	5.02	Young
Real Estate								
AVEO Group (AOG)	★★★★	AUD 3.1	AUD 2.71	Medium	None	0.87	1.57	Sherlock
Sun Hung Kai Properties (16)	★★★★	HKD 153	HKD 129.2	Medium	Narrow	0.84	374.29	Zhong
Vornado Realty Trust (VNO)	★★★★	$84	$66	Medium	None	0.79	12.55	Schwer
Technology								
Guidewire Software (GWRE)	★★★★	$100	$82.8	Medium	Wide	NA	6.62	Nelson
KLA-Tencor (KLAC)	★★★	$125	$109.12	High	Wide	0.87	17.01	Davuluri
MYOB Group (MYO)	★★★★	AUD 4.05	AUD 3.11	Medium	Narrow	0.77	1.88	James
Qualcomm (QCOM)	★★★★	$75	$55.2	High	Narrow	0.74	81.72	Davuluri
Sabre (SABR)	★★★★	$26	$20.05	Medium	Narrow	0.77	5.83	Wasiolek
Salesforce.com (CRM)	★★★★	$145	$121.4	Medium	Wide	0.84	89.80	Nelson
Synaptics (SYNA)	★★★★	$64	$46.96	Very High	None	0.73	1.62	Davuluri
TDK (6762)	★★★★	JPY 11500	JPY 9710	High	None	0.84	1225.40	Ito
Tencent Holdings (700)	★★★★	HKD 641	HKD 408	High	Wide	0.64	3877.30	Tam
Utilities								
Contact Energy (CEN)	★★★★	NZD 6.2	NZD 5.25	Medium	Narrow	0.85	3.76	Atkins
Dominion Energy (D)	★★★★★	$84	$64.07	Low	Wide	0.76	41.80	Fishman
FirstEnergy (FE)	★★★★	$40	$34.09	Low	Narrow	0.85	16.26	Fishman
Gas Natural SDG (GAS)	★★★	EUR 21	EUR 20.05	Medium	Narrow	0.95	20.05	Fulop
SCANA (SCG)	★★★★★	$57	$35.9	Medium	Narrow	0.63	5.12	Miller

Source: Morningstar. As of April 13, 2018

Highlighted Stocks

CenturyLink CTL

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Communication	Stable	USD	22	17.05	Very High	None	0.78	18.46

Source: Morningstar. As of April 13, 2018

While we don't expect CenturyLink's business to be a great performer, we think management has positioned it to remain viable for the long term.

Analyst Note, April 13, 2018

After taking a fresh look at CenturyLink, we are raising our fair value estimate to $22 from $19 and maintaining our stable, no-moat rating. Our fair value estimate implies a P/E multiple of 31 and an EV/EBITDA multiple of 7 on our 2018 estimates. We see the shares as modestly undervalued at current levels. CenturyLink, in our view, owns a first-rate network in a second-rate industry. We think CenturyLink plays an integral role in making up the backbone of the Internet, but the company faces overcapacity and numerous competitors. CenturyLink's fiber holdings make it one of the biggest communications infrastructure providers in the U.S., and its Tier 1 network is matched by few other companies in the world. While it is not the leader in the space, and we don't expect it to close much ground on the top players, the growing importance of our connected world gives us confidence that CenturyLink's network will remain vital.

However, technological advances continually improve networking efficiency and enable less costly solutions to store and transport data. Consequently, even in CenturyLink's enterprise segment, which accounts for roughly 75% of total revenue, we see a path to only meager top-line growth. We think CenturyLink's business customers will continue to benefit from shared networks, which the cloud advances, and strides that require less bandwidth and enable more efficient routing. We view the consumer business as being even worse, as we project the movement from consumers away from landline phones will more than offset CenturyLink's improving broadband network. In all, we think CenturyLink will be challenged to meaningfully grow revenue.

With our outlook for sales growth dim, we think enhancing profitability is CenturyLink's best path to improved financial performance. We see the 2017 merger with Level 3 Communications as boosting that effort, given substantial overlapping costs. We also think the firm stands to benefit greatly from its ability to use Level 3's deferred tax assets, which should be a boon to free cash flow. In a challenging business, we think management has made the right strategic moves to enhance value. We see the shift toward business customers and the focus on enhancing profitability as the proper moves to make in its industry. While we don't expect CenturyLink's business to be a great performer, we think management has positioned it to remain viable for the long term.

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Stericycle SRCL

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Industrials	Stable	USD	86	58.99	High	Narrow	0.69	5.02

Source: Morningstar. As of April 13, 2018

The firm faces several near-term headwinds, but we think investor sentiment in overly pessimistic.

Analyst Note, April 9, 2018

Upon reviewing Stericycle’s competitive positioning and transferring coverage to a new analyst, we are adjusting our economic moat rating to narrow from wide. The firm’s core domestic medical waste operations still enjoy robust competitive advantages rooted in route density. However, changes in healthcare end markets over the past decade (namely consolidation of independent healthcare practices into larger hospital groups) have reached the point where a large portion of Stericycle's small-quantity account pricing is materially bid down. Visibility surrounding the SQ-customer class action lawsuit that settled in 2017 also aggravated pricing among independent healthcare practices as these customers are pushing back contract pricing as well. Pricing concessions should abate within the next few years as contracts cycle through, but the result is a slightly less profitable backdrop because of the mix shift to customers with more bargaining power. Stericycle isn’t losing its footing against its small regional peers, but these factors keep us from comfortably making the call that excess returns are more likely than not to remain for at least 20 years, the definition of a wide moat.

In addition, we are lowering our fair value estimate to $86 per share, from $99, primarily because of the moat downgrade, but we also tempered our longer-term model assumptions slightly. We reduced our midcycle operating margin forecast to about 19.5%, from 20.5%, and lowered our midcycle organic top-line growth forecast to roughly 4%, from 5%. These adjustments essentially assume a larger mix of hospital-owned small-quantity customers (blended accounts), which carry lower pricing and margins because of stronger bargaining power than independent doctor and dental practices.

That said, the shares are undervalued, trading at a healthy 33% discount to our fair value. The firm faces several near-term headwinds, but we think investor sentiment in overly pessimistic.

Elevated costs linked to management’s business transformation initiatives will be in play through 2019, thus lowering visibility into underlying margin improvement—a key reason for our high uncertainty rating on the stock. However, we expect those costs and distractions to abate beyond that point and internal investments should translate into a more unified infrastructure, improved internal controls, and better salesforce execution.

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Synchrony Financial SYF

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Financial	Stable	USD	39	34.07	Medium	Narrow	0.87	26.48

Source: Morningstar. As of April 13, 2018

We believe the current share price already reflects much of what could go wrong for Synchrony. We remind investors that the last time Synchrony sold off, it remained in 4-star territory for only a couple of weeks.

Analyst Note, April 10, 2018

After the recent sell-off in narrow-moat Synchrony Financial, we believe the stock is attractively priced and now presents a buying opportunity for investors. Over the next two years, we forecast earnings per share to increase 90%. Much of this benefit results from tax reform; excluding that, we anticipate Synchrony's pretax income to increase 36%. Currently, the stock trades at a little over 7 times our 2019 earnings forecast. We believe the current share price already reflects much of what could go wrong for Synchrony. We remind investors that the last time Synchrony sold off, it remained in 4-star territory for only a couple of weeks. Right now, the stock trades at a 13% discount to our fair value estimate of $39 per share.

Much of our bull case is based on Synchrony's ability to return capital to shareholders. The peer group is leveraged at roughly 8.5 times equity. In comparison, Synchrony has assets of only 6.7 times equity. We believe it's possible that the company will repurchase 5% or more of its shares annually for the next few years. Though normally we would be cautious when a bank is increasing leverage, we forecast Synchrony will only increase its assets to 9.3 times equity. In comparison, before the 2008-09 financial crisis, leverage at the largest U.S. banks usually exceeded 11 times equity. We believe Synchrony can increase leverage while remaining conservatively positioned.

We also remind investors that we correctly anticipated the significant rise in charge-offs and higher payments to retailers that occurred through out 2016 and 2017. We anticipate charge-offs will increase almost 160 basis points to 5.7% in 2018 before leveling off at 5.5%. The significant increase in earnings over the next two years already assumes charge-offs stabilize at historically elevated levels. We assume retailer share arrangements will jump 25% in 2018 and account for approximately 4.3% of average receivables. To put this into context, RSAs accounted for only 3.7% of receivables in 2017. Given this, we're already assuming a significant increase in expenses. We believe Synchrony shares assume excessive pressure in profitability.

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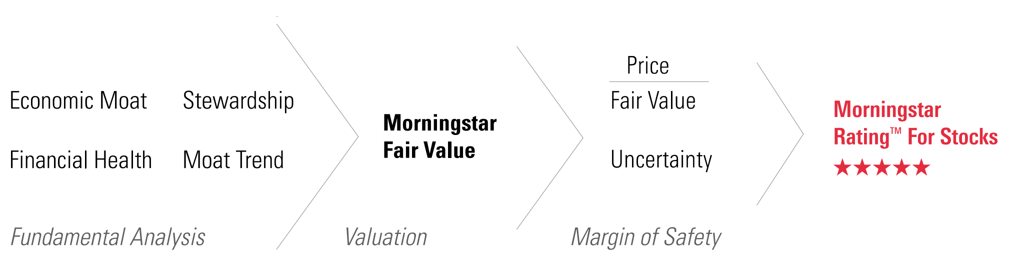
Research Methodology for Valuing Companies

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.

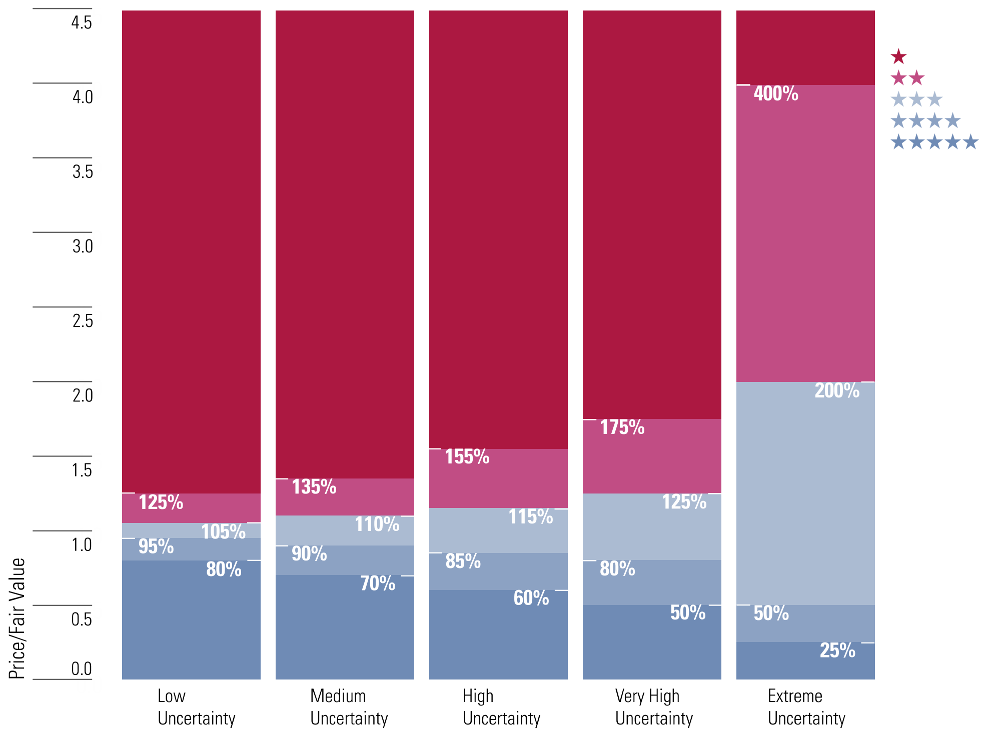
Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case and a 25% probability that the company will perform worse than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