Research Highlights

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

Morningstar Equity Research
Aug. 20-24, 2018

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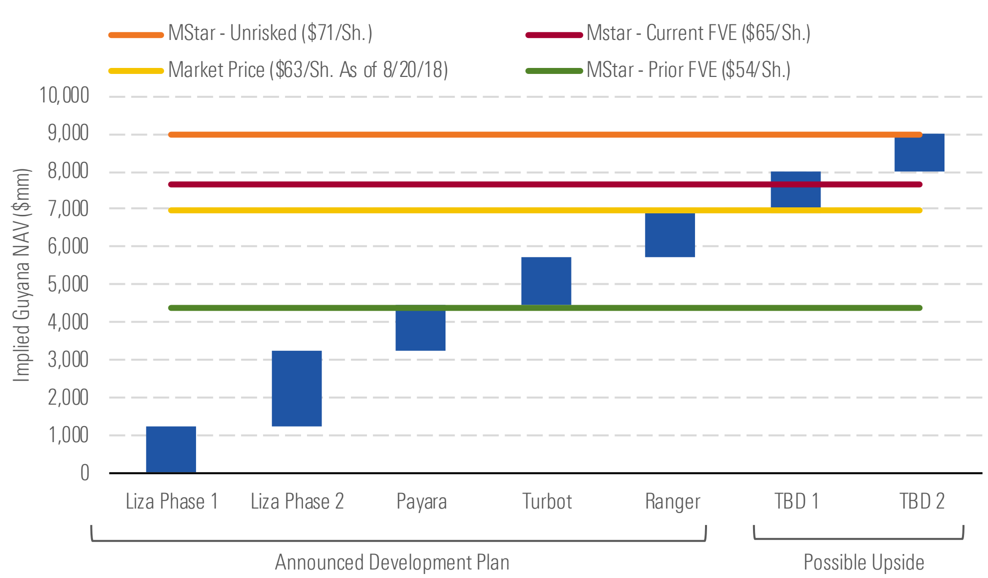
A Deeper Look at Guyana Assets Supports FVE Increase for Hess

We've been mostly bearish on Hess since the recent crude downturn. In our view, the market has overreacted to current prices, which are unsustainable in the long run. That spells trouble for oil producers at the higher end of the cost curve, where Hess perched until recently. But after a detailed review, we can see more value in the firm's much-lauded Guyana assets than we previously gave credit for. After the second quarter, management announced plans for five development phases, bringing the project's total capacity to at least 750 thousand barrels of oil per day by 2025. That could prove conservative, as it probably shortchanges Turbot and Ranger and ignores the exploration prospects that have yet to be tested.

Either way, the project is clearly a substantial growth driver for Hess, which is now expected to double its output within 10 years. This invalidates our previous (bearish) thesis and justifies the recent runup in the shares. But the remaining upside is marginal: Our updated fair value estimate of $65 is less than 5% above the current price. Additionally, we maintain conviction in our no-moat rating, as Hess is unable to earn its cost of capital until 2024 at the earliest, even with Guyana.

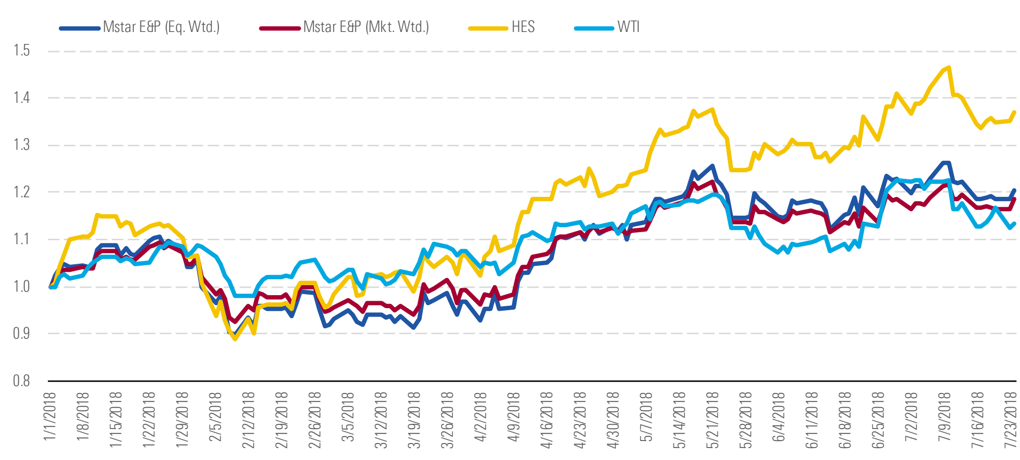
Exhibit 1 If Guyana Upside Is Risked Appropriately, There's Very Little Margin of Safety at the Current Price



Source: Morningstar

- A closer look at Hess' stake in the Stabroek Block, Guyana, reveals more value than we initially gave credit for. Accordingly, we have updated our fair value estimate to $65 per share from $54. However, the shares have strongly outperformed the sector in 2018, and most of this incremental value has already been captured, assuming the incremental upside from exploration in Guyana is appropriately risked. Incorporating the asset's full potential without discounts would yield a fair value of $71 per share.
- The Stabroek Block contains 4 billion recoverable barrels of oil, making Hess' 30% share equivalent to almost 4 times its current proved reserves. The latest development plan, announced after the second quarter, calls for five development phases with production reaching 750 mb/d by 2025 (which would by then account for 40% of Hess' output). This plan seems conservative, given the scale of the discoveries announced to date. Our model assumes output will reach 860 mb/d by year-end 2025, with five phases on line, and a total capacity of 1.2 mmb/d from seven phases, peaking around 2028.
- Due to a heavy oil weighting, competitive finding and development costs, and relatively low operating expenses, the ramp-up of Stabroek production could strengthen Hess' unit margins. But despite favorable fiscal terms, after incorporating the government's 50% share of profit oil we do not expect returns from Guyana to exceed what Hess is already achieving in the Bakken.
- Thanks to the Guyana assets, Hess' capital efficiency is set to improve. But progress will be painstakingly slow, and it could be years before the benefits materialize. The development plan is capital-intensive, and the spending requirements are heavily front-loaded (resulting in the cash flows from the first few phases getting soaked up by investments in later phases). Returns on invested capital should eventually trend higher, but not until the project is generating net free cash flows. This isn't likely until at least 2024, which is too far out to justify changing our no-moat rating.

Exhibit 2 Positive Updates on Guyana Helped Drive Shares Up Over 30% in 2018



Source: Morningstar Direct

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Initiating Coverage of DCP Midstream

We are initiating coverage of DCP Midstream with a fair value estimate of $47 per unit and no-moat and stable trend ratings. Our fair value estimate implies a 2019 enterprise value/EBITDA ratio of 9 times and a 2019 distribution yield of 6.6% as the partnership reports it. If we include both limited partner and general partner distributions in the distribution payout, as peers do, our yield increases to close to 10%. Adjusting for the general-partner take rate, our 2019 EV/EBITDA ratio is 11.8 times, a similar valuation to peers that have eliminated incentive distribution rights.

DCP Midstream is well-positioned to benefit from the surge in U.S. natural gas liquids production and exports in the coming years. DCP, in our view, represents a leveraged bet on the growth prospects of U.S. natural gas liquids, given its high financial leverage, volume-dependent asset base, and extensive marketing operations, where it benefits from NGL differentials.

The partnership's simplification transaction in 2017 created one of the largest gatherers and marketers of NGLs in the United States, with gathering and processing assets across the Permian, Eagle Ford, SCOOP/STACK, and DJ Basin. In turn, DCP has leveraged its asset base to make growth investments in pipelines, including the important Sand Hills project, which will take advantage of quickly growing Permian NGL production and the Permian Gulf Coast Express, which should capture growth opportunities in Permian gas. Further, the partnership's DCP 2.0 investment in technology has improved asset optimization, reliability, and real-time decision-making. The example of increasing Sand Hill's capacity by 35 thousand barrels per day with no incremental capital investment (beyond those in technology) resonates.

Despite the partnership's position in the Permian, where we expect significant growth amid attractive well economics, we actually think its DJ Basin assets are more attractive. The entity's 45% market share in G&P by our estimates as part of a midstream duopoly means competition for new investment opportunities is minimal as competitors would need to build both G&P assets and pipelines due to the ability for DCP to block connections, lowering returns. This environment has allowed DCP to pursue incremental investments in several underutilized pipelines (Southern Hills, Front Range, Texas Express) to take advantage of expected NGL growth in the basin. The opportunity is not only in the expansions totaling 240 mb/d, which we expect to be contracted, but also in addressing the existing underutilization of the combined pipelines totaling around 230 mb/d, providing substantial additional potential earnings uplift. However, investors should keep in mind that DCP is more exposed to shifts in commodity prices than peers are, with about 20% of its 2018 gross margin unhedged and not fee-based.

Bulls Say

- With an extensive footprint in the Permian and STACK/SCOOP plays, DCP should benefit from an elimination of ethane rejection, boosting fee income, as U.S. Gulf Coast steam crackers start up.
- DCP Midstream is essentially 100% exposed to NGLs, making it an attractive option for investors who want more exposure to the space.
- The entity's recent emphasis on pursuing attractive fee-based pipeline investments boosts earnings stability and enhances returns.

Bears Say

- DCP seems very committed to its distribution, despite investor disinterest and appreciation for the effort, costing it capital that could be used to grow the business.
- DCP unitholders face equity dilution in the future as we expect the IDRs to be eliminated eventually.
- Tighter regulations in Colorado could dramatically reduce the amount of future quality drilling locations available in the DJ Basin. Fortunately, there appears to be little political support currently.

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French Electricity Mix and the Impact on EDF

Updates to the French energy transition law and pluriannual plan of energy, or PPE, for 2019-28 are expected in the coming months. The time frame for reducing nuclear to 50% of France's electricity production should be defined, while ambitious targets will be set for solar and wind, in our view. In this report, we lay out a scenario under which nuclear would decrease to 50% of the French electricity mix by 2035, based on our assumptions that useful life will be extended from 40 years to 50 years for all first-generation 900 megawatt reactors except Bugey and from 40 years to 60 years for 1.3 gigawatt and 1.45 GW reactors.

To push EDF to embrace the energy transition by increasing investments in renewables and solve the capital allocation trade-off between nuclear and renewables, it is possible that the French government will impose a breakup on EDF, similar to German utilities. Under this scenario, we believe that EDF's renewables and regulated activities would be grouped into a new company while EDF would keep liberalised activities, including nuclear in France and in the U.K. This option is favoured by investors, as it would reduce the holding discount through a better valuation of distribution networks and renewables. Still, the breakup would face the opposition of EDF's powerful unions and public opinion. In this report, we estimate the value of EDF under a spin-off scenario using a sum-of-the-parts methodology, and we factor in a 25% likelihood for that scenario.

- We raise our fair value estimate for EDF by 42% to EUR 15 from EUR 10.60 because of the mark to market of power prices and forecasts; the incorporation of 25% of the premium of the spin-off scenario; returns on future new renewables capacity; and our anticipation of an increase in cost-cutting.
- We show that EDF's current share price implies 0% likelihood of a breakup.
- We assume that nuclear share will decrease from 75% to 50% in 2034 due to the closure of the first-generation reactors after 50 years and significant commissioning of wind and solar capacity.
- We raise our moat trend rating for EDF from negative to stable due to regulatory improvement, and we lower the uncertainty rating from high to medium.

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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)	★★★★	$17	$10.35	High	Narrow	0.61	4.12	Inton
Compass Minerals International (CMP)	★★★★	$83	$63	High	Wide	0.76	2.13	Goldstein
Martin Marietta Materials (MLM)	★★★★	$265	$203.37	High	Narrow	0.77	12.81	Inton
Communication Services								
BT Group (BT.A)	★★★★	GBX 360	GBX 225.25	High	Narrow	0.63	22.35	C. Nichols
China Mobile (941)	★★★★	HKD 100	HKD 72.9	Medium	Narrow	0.73	1492.66	Baker
Comcast (CMCSA)	★★★★	$42	$35.31	Medium	Wide	0.84	161.79	Macker
Telefonica (TEF)	★★★★★	$13	$7.32	High	Narrow	0.56	38.04	C. Nichols
Telstra (TLS)	★★★★	AUD 4.4	AUD 3.21	Medium	Narrow	0.73	38.18	Han
Consumer Cyclical								
Advance Auto Parts (AAP)	★★★	$165	$163.26	Medium	Narrow	0.99	12.09	Akbari
Bayerische Motoren Werke (BMW)	★★★★	EUR 117	EUR 81.08	High	Narrow	0.69	52.74	Hilgert
Expedia Group (EXPE)	★★★★	$185	$128.92	High	Narrow	0.70	19.27	Wasiolek
General Motors (GM)	★★★★	$45	$35.67	High	None	0.79	50.33	Whiston
Great Wall Motor (2333)	★★★★	HKD 6.6	HKD 4.7	High	None	0.71	62.98	Su
Hanesbrands (HBI)	★★★★★	$27	$17.78	Medium	Narrow	0.66	6.41	Hottovy
InvoCare (IVC)	★★★★	AUD 17	AUD 12.74	Medium	Wide	0.75	1.40	Ragonese
Mattel (MAT)	★★★★	$21.5	$15.25	High	Narrow	0.71	5.25	Katz
Norwegian Cruise Line Holdings (NCLH)	★★★★	$69	$52.38	High	Narrow	0.76	11.60	Katz
Walt Disney (DIS)	★★★★	$130	$112	Medium	Wide	0.86	166.57	Macker
WPP (WPP)	★★★★	GBX 1500	GBX 1296	Medium	Narrow	0.86	16.35	Mogharabi
Consumer Defensive								
G8 Education (GEM)	★★★★★	AUD 4	AUD 2.42	High	None	0.61	1.10	James
General Mills (GIS)	★★★★★	$59	$45.59	Low	Wide	0.77	27.17	Vora
Imperial Brands (IMB)	★★★★★	GBX 3700	GBX 2844.5	Low	Wide	0.77	27.13	Gorham
Kao (4452)	★★★★	JPY 8800	JPY 8363	Low	Wide	0.95	4076.30	Wei
Mondelez International (MDLZ)	★★★★	$52	$42.09	Medium	Wide	0.81	61.73	Lash
PepsiCo (PEP)	★★★★	$123	$111.93	Low	Wide	0.91	158.31	Vora
Procter & Gamble (PG)	★★★★	$97	$83.24	Low	Wide	0.86	207.10	Lash
Reckitt Benckiser Group (RB.)	★★★★	GBX 7300	GBX 6731	Low	Wide	0.92	47.56	Gorham
Energy								
Cenovus Energy (CVE)	★★★★	$21	$12.29	Very High	None	0.59	15.10	Gemino
Enbridge (ENB)	★★★★	$64	$47.12	Medium	Wide	0.74	80.83	Gemino
Enterprise Products Partners (EPD)	★★★★	$35.5	$29.48	Low	Wide	0.83	64.15	Ellis
Royal Dutch Shell (RDS.B)	★★★★	$78	$67.16	Low	None	0.86	273.41	Good
Total (TOT)	★★★★	$74	$62.83	Medium	None	0.85	162.61	Good
Financial Services								
Agricultural Bank of China (601288)	★★★★	CNY 4.2	CNY 3.61	High	Narrow	0.86	1252.14	Tan
American International Group (AIG)	★★★★	$76	$52.61	Medium	None	0.69	46.74	Horn
Capital One Financial (COF)	★★★★	$127	$99.54	Medium	Narrow	0.78	47.62	Plunkett
Credit Suisse Group (CSGN)	★★★★	CHF 22	CHF 14.76	High	Narrow	0.67	37.65	Scholtz
Invesco (IVZ)	★★★★★	$38	$24.29	Medium	Narrow	0.64	9.98	Warren

Source: Morningstar. As of Aug. 24, 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.)								
Mitsubishi UFJ Financial Group (8306)	★★★★	JPY 880	JPY 668.6	Medium	None	0.76	8744.41	Wu
Pendal Group (PDL)	★★★★	AUD 11	AUD 9.23	Medium	Narrow	0.84	2.59	Likos
QBE Insurance Group (QBE)	★★★	AUD 12.5	AUD 10.77	High	None	0.86	14.53	Ellis
Westpac Banking (WBC)	★★★★	AUD 35	AUD 27.66	Medium	Wide	0.79	93.66	Ellis
Healthcare								
Allergan (AGN)	★★★★★	$263	$186.7	Medium	Wide	0.71	63.37	Waterhouse
McKesson (MCK)	★★★★★	$210	$129.36	Medium	Wide	0.62	25.84	Lekraj
Medtronic (MDT)	★★★★	$105	$95.61	Medium	Wide	0.91	129.24	Wang
Ramsay Health Care (RHC)	★★★★★	AUD 82	AUD 57	Medium	Narrow	0.70	11.52	Kallos
Roche Holding (ROG)	★★★★★	CHF 337	CHF 240.95	Low	Wide	0.71	206.21	Andersen
Shire (SHP)	★★★★	GBX 4990	GBX 4422.5	Medium	Narrow	0.89	40.44	Andersen
Industrials								
Allegion (ALLE)	★★★	$91	$86.44	Medium	Wide	0.95	8.21	Bernard
Anixter International (AXE)	★★★★★	$107	$71.85	Medium	Narrow	0.67	2.40	Bernard
Beijing Enterprises Holdings (392)	★★★★★	HKD 58	HKD 35.45	Medium	Narrow	0.61	44.74	Song
Brambles (BXB)	★★★	AUD 11.2	AUD 10.6	Medium	Wide	0.95	16.87	Fleck
CK Hutchison Holdings (1)	★★★★	HKD 118	HKD 87.95	Medium	None	0.75	339.28	Tan
G4S (GFS)	★★★★	GBX 337	GBX 251	Medium	None	0.74	3.89	Field
GEA Group (G1A)	★★★★★	EUR 47	EUR 33.23	Medium	Wide	0.71	6.00	Molina
General Dynamics (GD)	★★★	$220	$191.59	Medium	Wide	0.87	56.76	Higgins
Grupo Aeroportuario del Pacifico (GAP B)	★★★★	MXN 217	MXN 182.17	High	Wide	0.84	102.20	Higgins
Guangshen Railway (525)	★★★★★	HKD 6.5	HKD 3.37	High	None	0.52	30.37	Song
Johnson Controls International (JCI)	★★★★	$53	$39.14	High	Narrow	0.74	36.20	Bernard
Kion Group (KGX)	★★★★★	EUR 90	EUR 57.84	Medium	Narrow	0.64	6.81	Molina
Royal Philips (PHIA)	★★★★	EUR 42	EUR 37.93	Medium	Narrow	0.90	35.33	Vonk
Sodexo (SW)	★★★★	EUR 110	EUR 92.66	Medium	Narrow	NA	13.74	Field
Stericycle (SRCL)	★★★★	$86	$61.4	High	Narrow	0.71	5.27	Young
Real Estate								
Aveo Group (AOG)	★★★★	AUD 2.8	AUD 2.28	Medium	None	0.81	1.32	Sherlock
Sun Hung Kai Properties (16)	★★★★	HKD 153	HKD 116.9	Medium	Narrow	0.76	338.66	Zhong
Welltower (WELL)	★★★	$74	$65.91	High	None	0.89	24.52	Brown
Technology								
Intel (INTC)	★★★★	$65	$46.98	Medium	Wide	0.72	216.62	Davuluri
Microchip Technology (MCHP)	★★★★	$112	$85.67	Medium	Wide	0.76	20.18	Colello
MYOB Group (MYO)	★★★★	AUD 3.82	AUD 3.05	Medium	Narrow	0.80	1.81	James
ServiceNow (NOW)	★★★★	$221	$184.85	Medium	Wide	0.84	32.88	Fitzsimmons
Synaptics (SYNA)	★★★★	$64	$45.27	Very High	None	0.71	1.60	Davuluri
TDK (6762)	★★★	JPY 12500	JPY 11700	High	None	0.94	1477.07	Ito
Tencent Holdings (700)	★★★★★	HKD 590	HKD 354	High	Wide	0.60	3370.87	Tam
Utilities								
Dominion Energy (D)	★★★★	$84	$71.07	Low	Wide	0.85	46.46	Fishman
Enel (ENEL)	★★★★	EUR 5.7	EUR 4.38	Medium	None	0.77	44.60	Fulop
FirstEnergy (FE)	★★★★	$41	$36.78	Low	Narrow	0.90	17.88	Fishman
Scana (SCG)	★★★★★	$56	$37.59	Medium	Narrow	0.67	5.36	Miller

Source: Morningstar. As of Aug. 24, 2018

Highlighted Stocks

Dufry DUFN:CH

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Consumer	Stable	CHF	144	121.35	High	Narrow	0.84	6.53

Source: Morningstar. As of Aug. 24, 2018

Travel retail is an attractive niche with a captive and affluent audience, a good value proposition in duty-free sales, a high share of impulse purchases, and no direct competition.

Analyst Note, Aug. 20, 2018
We are initiating coverage of Dufry, the leader in airport and travel retail, with a narrow moat rating. We believe the shares offer an attractive margin of safety, trading around a 20% discount to our CHF 144 per share fair value estimate, which implies a 2018 adjusted P/E and EBITDA multiple of 17 times and 10.6 times, respectively.

Travel retail is an attractive niche with a captive and affluent audience, a good value proposition in duty-free (60% of Dufry's sales), a high share of impulse purchases, and no direct competition (operators are usually the sole providers for a specific product in an airport). While airports capture the bulk of retail profits as owners of unique real estate (concession fees around 25%-30%), we believe that Dufry is likely to continue generating economic profits, as the most scaled player in a fragmented industry. It is present in 300 airports with over 20% airport retail market share, double that of the next biggest peer. Further, concession contracts are long-term (average duration of eight years for Dufry) and highly sticky (80%-90% renewal rates across the industry). Also, increasing concession fees will likely make business uneconomical for smaller, subscale operators, which would help market leaders such as Dufry take market share and consolidate the market further.

We forecast Dufry to increase revenue at 4%-5% annually over the next 10 years with some cyclicality, with a largely flat adjusted EBITDA margin, as improvements in gross margin and operating costs are offset by concession inflation. We expect both effects to moderate over time, as supply efficiencies get more difficult to extract, and as the industry consolidates and Dufry gains more negotiating clout with the airports.

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JM Smucker SJM

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Consumer	Negative	USD	129	105.09	Medium	Narrow	0.81	11.86

Source: Morningstar. As of Aug. 24, 2018

We believe sentiment underestimates Smucker's in-aisle clout, which, though diminished amid stiff competition, is still considerable.

Analyst Note, Aug. 21, 2018

We do not plan a large change to our $129 fair value estimate for narrow-moat Smucker, as soft first-quarter results are offset by the time value of money. Smucker reported a 9% sales increase and 17% adjusted operating margin versus our full-year estimates of 10% and 18%, respectively. Reflecting its pending baking divestiture, management revised its fiscal 2019 revenue guidance from $8.3 billion to $8 billion and maintained its $8.40-$8.65 adjusted earnings per share mark (versus our respective estimates of $8 billion and $8.38). We think the softness reflects transitory factors like product launch expenses and the timing of promotions, so our long-term outlook for 3% sales growth and high teens adjusted operating margins, on average, over the next decade is intact. We see the shares as attractive and believe sentiment underestimates Smucker's in-aisle clout, which, though diminished amid stiff competition, is still considerable.

The pet food unit (near 40% of pro forma sales) disappointed, with organic sales down 2% and profit margin down 380 basis points to 15% due to lower price realization and volume declines led by Natural Balance and the discontinuation of some Gravy Train items. However, we still expect premiumization will leave segment margins in the high teens (versus 20% in fiscal 2018) despite competition. The recently acquired Rachael Ray Nutrish brand's double-digit comparable sales growth and Ainsworth's 28% consumption growth in the newly entered specialty channel bolster our view.

Coffee (near 30% of pro forma sales) benefited from on-trend brands (Dunkin' Donuts, Cafe Bustelo, and the new 1850 mark) offset by mainstream segment declines (Folgers). Sales rose 2% thanks to volume and mix benefits from premium brands, near our 3% full-year forecast. The unit's profit margin was up 450 basis points to 30.2%, benefiting from low input costs; in a normalized environment, we still expect high 20s segment margins.

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Toll Brothers TOL

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Consumer	Stable	USD	49	37	High	None	0.76	5.66

Source: Morningstar. As of Aug. 24, 2018

Demand for Toll Brothers homes remained strong during the quarter.

Analyst Note, Aug. 21, 2018

Toll Brothers' stock rallied almost 14% on Aug. 21 in response to the no-moat homebuilder's strong fiscal third-quarter results. Revenue grew 27% year over year to $1.9 billion, which beat the consensus estimate by 6%. Home delivery volumes during the third quarter increased 18%, and the average selling price of homes delivered increased about 8%. GAAP EPS of $1.26 was 45% higher than the year-ago quarter and easily beat the $1.03 consensus estimate. Prior to the earnings release, Toll Brothers' stock was down 28% year to date as investors fretted over homeowner affordability and rising input costs. Clearly, Toll Brothers' strong results assuaged some of these concerns. After reviewing Toll Brothers' third-quarter results, we didn't materially change our key valuation assumptions, and we're therefore maintaining our $49 per share fair value estimate.

Demand for Toll Brothers homes remained strong during the quarter; new order volume increased 7% year over year to 2,316 units. However, this growth rate doesn't tell the whole story as Toll Brothers operated out of fewer communities versus the year-ago quarter (301 at the end of third-quarter 2018 versus 312 last year). New orders per community grew at a more robust 18% year over year pace to 8.1 units per community. In terms of community count, management expects to finish fiscal 2018 with 315 selling communities and continue to grow community count in 2019. In our view, Toll Brothers has plenty of land to accomplish this goal. Year-to-date, the homebuilder has spent $810 million for 8,110 lots versus $491 million for 4,677 lots last year. Toll Brothers ended the third quarter with 53,604 lots versus 47,840 at the end of the year-ago quarter. Given that Toll Brothers is sitting on a backlog valued at $6.5 billion, up 22% year over year, and typically only about 40% of that backlog is delivered in the fourth quarter, the company is well-positioned for another year of growth in fiscal 2019.

Management typically provides quarterly guidance for six key metrics: home deliveries; average selling price of home deliveries; adjusted gross margin; selling, general, and administrative expenses as a percentage of sales; other income and unconsolidated income, and effective tax rate. Actual third-quarter results across each of these metrics topped management's guidance.

Toll Brothers continues to repurchase shares at prices below our $49 per share fair value estimate, which we see as a good use of capital. The firm purchased 3.7 million shares during the third quarter at an average price of $37.24 per share. Year to date, Toll Brothers has purchased 10.2 million shares at an average price of $43.05 per share.

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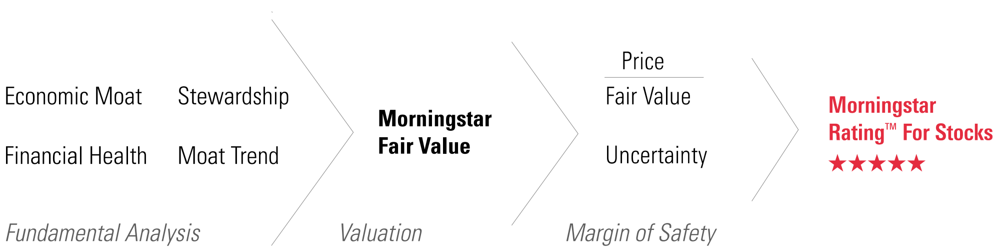
Research Methodology for Valuing Companies

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.

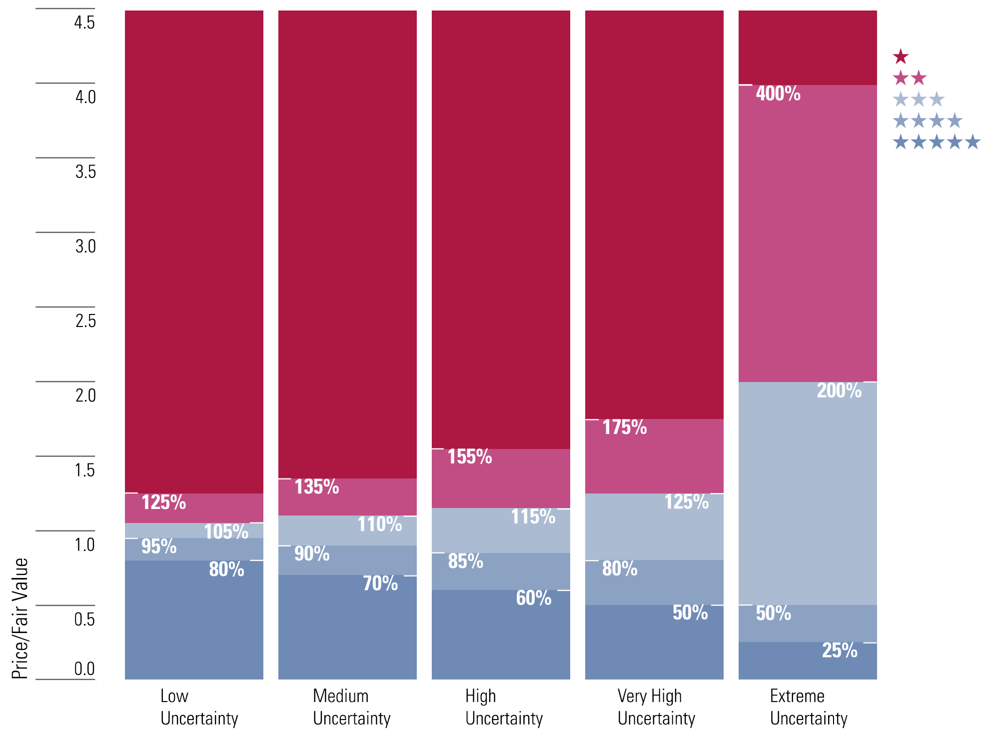
Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case and a 25% probability that the company will perform worse than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

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