Research Highlights

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

Morningstar Equity Research
May 7-11, 2018

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

Initiating Coverage of TransUnion

We are initiating coverage of TransUnion. We think that like its peers Equifax and Experian, TransUnion benefits from a wide moat. However, our fair value estimate is $58 per share, and we see the shares as currently fully valued.

TransUnion's data is critical to users' underwriting decisions, and the price of its services is negligible relative to the loan amounts at risk. We estimate that North American credit bureau industry revenue equates to about 2 basis points of total household debt. With only three meaningful players domestically and many clients using more than one credit bureau, TransUnion and its competitors have little incentive to compete on price, which has led to an EBITDA margin of almost 40% in this segment. There is a stable oligopolistic structure to the industry, and we think there are high barriers to entry surrounding this business, as replicating the databases of leading players like TransUnion would be incredibly difficult, and users are more concerned about the breadth and accuracy of the data than the price. We think the strength of this intangible asset supports a wide economic moat for the business as a whole.

TransUnion is the smallest of the three credit bureaus, but since its IPO in 2015 it has been the strongest performer, generating double-digit top-line growth and sizable margin improvement. We think the company can maintain its outperformance in the near term, as its upgraded infrastructure, product innovation, and smaller size are all working in its favor. However, the company is aggressively pursuing acquisitions, and its longer-term outlook will likely hinge on execution on this front and how the makeup of the company shifts over time. The company’s track record suggests that so far it is managing this evolution without any material dilution to the wide moat that surrounds its core business. Its most recent move is an acquisition of Callcredit, the second-largest credit bureau in the United Kingdom, in a deal valued at $1.4 billion. This marks a break from the string of smaller deals the company has pursued. In our view, the price looks reasonable, and we like that TransUnion is doubling down on the moatiest part of its business.

We think the most value-creative long-term expansion opportunity for TransUnion and its peers lies in emerging markets, where growing middle-class populations should allow the companies to export their business model. But opportunities are somewhat limited, given the set of conditions necessary to establish operations, and we think the near-term opportunities are in smaller countries that won't move the needle. For TransUnion, the most intriguing opportunity is in India, which we think is the only country with long-term revenue potential comparable to the domestic market. TransUnion’s early entry has allowed it to build a leading position in this country. While it will likely take years to realize, we think this position provides meaningful long-term upside.

Bulls Say

- TransUnion's efforts to modernize its data infrastructure not only lowered costs, but could improve its nimbleness in generating new revenue. In terms of growth, TransUnion has clearly outperformed its larger peers since its IPO.
- Credit scoring is in its infancy in emerging markets. Although the ramp-up could take many years, TransUnion has a leading position in India, the one emerging market that we believe has long-term revenue potential in line with the U.S.
- The recent breach at Equifax could open up some opportunities for TransUnion to take business.

Bears Say

- U.S. mortgage-related business has been a tailwind in recent years and is poised to now turn into a headwind as interest rates increase.
- While TransUnion was not directly involved, the breach at Equifax could lead to a more restrictive regulatory environment for all players.
- Management's predilection for M&A could ultimately dilute the wide moat surrounding the core business.

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Telstra's Road to Recovery Paved With Cost-Cutting Opportunities

We are confident that narrow-moat-rated Telstra can achieve its AUD 1.5 billion productivity and cost-out program by the end of fiscal 2022. Indeed, the core underlying fixed cost reduction target of AUD 1.3 billion appears conservative, and we estimate that it will amount to AUD 1.5 billion in itself, with another AUD 200 million productivity gains likely to be realised as part of the current incremental AUD 3 billion capital expenditure project. The importance of executing on this "self-help" measure was first flagged in our July 7, 2017, report We Need to Talk About Telstra and cannot be understated.

It is not only critical for filling the AUD 3 billion EBITDA hole inflicted by the National Broadband Network, or NBN, but also serves as a litmus test for management credibility. Success on this cost front is paramount to assuaging current market fears regarding dividend sustainability, and will go a long way towards closing the current discount between the stock price and our AUD 4.60 per share fair value estimate.

- Encouraging progress to date supports our confidence on the cost-cutting front, with AUD 493 million in underlying fixed expenses already slashed in the 14 months to the end of December 2017. In fact, Telstra has twice upgraded its initial cost-reduction target since it was first revealed in November 2016, and we see more upgrades over the next 12 months, to the tune of another AUD 200 million.
- We concede that all telecom operators globally are preaching the need to cut costs. However, Telstra is one of the most leveraged on the upside due to significant inefficiencies buried within its Byzantine mess of legacy systems and processes, in addition to the excess people still employed to manage those systems, processes, and the people themselves. This is reflected in Telstra's labour cost/sales ratio of 19.8%, versus a global average of 14.9%, equating to AUD 1.3 billion upside just from cutting staff expenses to the peer average.
- Importantly, amid all the headwinds, we have not wavered on our belief that Telstra boasts an economic moat, sourced primarily from the cost advantages the group enjoys from its dominant scale and market shares. This is augmented by characteristics of efficient scale in the Australian telecom industry (mature demand, high sunk costs). The capital costs required for a new entrant to replicate even a small part of Telstra's extensive infrastructure footprint, scale, and brand power and still earn a suitable long-term return on capital would be prohibitive, especially in a relatively small country such as Australia.

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Time to Up the Anta

Hong Kong-listed Anta Sports Products is China's largest home-grown sportswear brand. As the third-largest player (10% market share) in China's USD 31 billion sportswear market, Anta is set to be the prime beneficiary of growing spending on sportswear. We expect the Chinese sportswear market to grow at an average of 12% over the next five years, and 10% over the next 10 years. Robust growth will be driven by factors including our 6% per year growth forecast for Chinese household consumption over the next 10 years and the drastic increase in the role of sport in Chinese society. Anta's traditional brand accounts for around 70% of its revenue and is focused on the mass sportswear market in China. Most of its remaining revenue comes from the Fila (China) brand it purchased in 2009, which centers on the higher-end sports fashion and athleisure market. While the Fila brand is floundering globally, Anta has been able to grow its sales in China at an annual average of over 50% since 2013, in fact hitting 70% revenue growth in first-quarter 2018. With a number of other recent niche sporting brand purchases, we expect Anta to continue to increase its market share over the next five years and forecast it to generate an average of 25% revenue and earnings per share growth over that period.

- The Chinese sportswear market is set to boom over the next 10 years as disposable income rises and sports participation grows. This is coupled with growing acceptance of wearing activewear outside of the sports setting. As the leading domestic sportswear company with a stellar operational track record, Anta is set to benefit. Anta shares are trading at a 23% discount to our HKD 55 fair value estimate.
- Shenzhou International is the leading sportswear knitting manufacturer in the world, but its leverage to the Chinese market is smaller at 27% of its revenue base. Despite this, we forecast 11% annual revenue growth and 13% earnings per share growth over the next five years for the company. We still see the stock as overvalued and are somewhat concerned about the long-term aim of their global manufacturing customers to nearshore their manufacturing using robots and 3D printing.

Bulls Say

- Margins will rise as a result of a rising proportion of sales coming from the higher-margin direct-to-consumer Fila brand over the next few years.
- The completion of logistics center will cut down Anta's factory to store replenishment time from one month to as little as two days, allowing the company to react quickly to consumer demands.
- The acquisition of Kingkow allows the company to capture the expanding premium kidswear market.

Bears Say

- The nature of Fila makes it subject to fashion misses, and it takes time to prove the brand can remain relevant in the years to come.
- Fast-fashion brands are rushing into the sportswear space by providing low-cost options that compete directly with Anta's core brand.
- Acquiring nonsportswear brands that fall outside of the company's comfort zone carries additional risks. Acquisition valuations may be at a premium and reinventions may be harder than expected.

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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	$11.46	High	Narrow	0.67	4.52	Inton
Compass Minerals International (CMP)	★★★★	$83	$69	High	Wide	0.83	2.34	Goldstein
Martin Marietta Materials (MLM)	★★★★	$265	$210.72	High	Narrow	0.80	13.27	Inton
Communication Services								
BT Group (BT.A)	★★★★	GBX 360	GBX 221.05	High	Narrow	0.61	21.93	C. Nichols
China Mobile (941)	★★★★	HKD 102	HKD 73.85	Medium	Narrow	0.72	1512.11	Baker
Telefonica (TEF)	★★★★	$13	$8.34	High	Narrow	0.64	43.34	C. Nichols
Telstra (TLS)	★★★★★	AUD 4.6	AUD 3.2	Medium	Narrow	0.70	38.06	Han
Consumer Cyclical								
Advance Auto Parts (AAP)	★★★★	$159	$118.23	Medium	Narrow	0.74	8.75	Akbari
Bapcor (BAP)	★★★★	AUD 7	AUD 6.28	Medium	Narrow	0.90	1.76	Ragonese
Bayerische Motoren Werke (BMW)	★★★★	EUR 117	EUR 92.18	High	Narrow	0.79	60.05	Hilgert
Domino's Pizza Enterprises (DMP)	★★★★	AUD 53	AUD 42.72	Medium	Narrow	0.81	3.74	Faul
General Motors (GM)	★★★★	$56	$37.16	High	None	0.66	52.37	Whiston
Great Wall Motor (2333)	★★★★★	HKD 13.5	HKD 8.06	High	None	0.60	106.48	Hu
Hanesbrands (HBI)	★★★★★	$29	$16.58	Medium	Narrow	0.57	5.97	Hottovy
Mattel (MAT)	★★★★	$21.5	$14.51	High	Narrow	0.67	4.99	Katz
TripAdvisor (TRIP)	★★★★	$56	$48.51	High	Narrow	0.87	6.67	Wasiolek
Walt Disney (DIS)	★★★★	$130	$101.68	Medium	Wide	0.78	151.56	Macker
Williams-Sonoma (WSM)	★★★★	$68	$48.01	Medium	Narrow	0.71	4.00	Katz
WPP (WPP)	★★★★	GBX 1500	GBX 1306	Medium	Narrow	0.87	16.53	Mogharabi
Consumer Defensive								
G8 Education (GEM)	★★★★★	AUD 4	AUD 2.49	High	None	0.62	1.13	James
General Mills (GIS)	★★★★★	$59	$42.62	Low	Wide	0.72	24.30	Vora
Imperial Brands (IMB)	★★★★★	GBX 3900	GBX 2795.5	Low	Wide	0.72	26.66	Gorham
Kao (4452)	★★★★	JPY 8800	JPY 7641	Low	Wide	0.87	3765.29	Wei
Mondelez International (MDLZ)	★★★★	$51	$39.1	Medium	Wide	0.77	57.68	Lash
Procter & Gamble (PG)	★★★★★	$98	$73.15	Low	Wide	0.75	183.94	Lash
Reckitt Benckiser Group (RB.)	★★★★★	GBX 7300	GBX 5732	Low	Wide	0.79	40.39	Gorham
Energy								
Cenovus Energy (CVE)	★★★★	$21	$14.07	Very High	None	0.67	17.29	Gemino
Enbridge (ENB)	★★★★★	$62	$42.25	Medium	Wide	0.68	72.03	Gemino
Enterprise Products Partners (EPD)	★★★★	$31	$27.39	Low	Wide	0.88	59.51	Ellis
Royal Dutch Shell (RDS.B)	★★★★	$78	$73.6	Low	None	0.94	307.01	Good
Total (TOT)	★★★★	$74	$62.99	Medium	None	0.85	164.07	Good
Financial Services								
American International Group (AIG)	★★★★	$76	$52.75	Medium	None	0.69	47.35	Horn
Capital One Financial (COF)	★★★★	$126	$92.67	Medium	Narrow	0.74	45.08	Plunkett
Credit Suisse Group (CSGN)	★★★★	CHF 22	CHF 17.14	High	Narrow	0.78	43.54	Scholtz
Invesco (IVZ)	★★★★	$40	$28.14	Medium	Narrow	0.70	11.56	Warren
Mitsubishi UFJ Financial Group (8306)	★★★★	JPY 880	JPY 723	Medium	None	0.82	9516.73	Wu
QBE Insurance Group (QBE)	★★★★	AUD 13	AUD 10.21	High	Narrow	0.79	13.86	Ellis
Westpac Banking (WBC)	★★★★	AUD 35	AUD 29.59	Medium	Wide	0.85	100.20	Ellis

Source: Morningstar. As of May 11, 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	$151.91	Medium	Wide	0.58	51.51	Waterhouse
McKesson (MCK)	★★★★	$210	$147.26	Medium	Wide	0.70	30.39	Lekraj
Medtronic (MDT)	★★★★	$105	$85.68	Medium	Wide	0.82	116.13	Wang
Ramsay Health Care (RHC)	★★★★	AUD 82	AUD 64.37	Medium	Narrow	0.79	13.01	Kallos
Roche Holding (ROG)	★★★★★	CHF 325	CHF 222.15	Low	Wide	0.68	190.49	Andersen
Shire (SHP)	★★★★	GBX 4890	GBX 4061.5	Medium	Narrow	0.83	37.11	Andersen
Industrials								
Anixter International (AXE)	★★★★★	$107	$63.3	Medium	Narrow	0.59	2.12	Bernard
Beijing Enterprises Holdings (392)	★★★★★	HKD 58	HKD 40.85	Medium	Narrow	0.70	51.55	Song
Brambles (BXB)	★★★★	AUD 11.2	AUD 9.85	Medium	Wide	0.88	15.67	Fleck
CK Hutchison Holdings (1)	★★★★	HKD 124	HKD 92.35	Medium	None	0.74	356.26	Tan
Fluor (FLR)	★★★★	$65	$46.36	High	Narrow	0.71	6.52	Silver
G4S (GFS)	★★★★	GBX 337	GBX 260.5	Medium	None	0.77	4.04	Field
GEA Group (G1A)	★★★★	EUR 47	EUR 33.08	Medium	Wide	0.70	6.37	Molina
Grupo Aeroportuario del Pacifico (GAP B)	★★★★	MXN 225	MXN 180.77	High	Wide	0.80	101.41	Higgins
Guangshen Railway (525)	★★★★	HKD 6.8	HKD 4.67	High	None	0.69	39.39	Song
Johnson Controls International (JCI)	★★★★	$53	$36.72	High	Narrow	0.69	34.01	Bernard
KION GROUP (KGX)	★★★★	EUR 86	EUR 71.82	Medium	Narrow	0.84	8.47	Molina
Royal Philips (PHIA)	★★★★	EUR 42	EUR 35.52	Medium	Narrow	0.85	32.49	Vonk
Sodexo (SW)	★★★★	EUR 110	EUR 83.24	Medium	Narrow	0.76	12.34	Field
Stericycle (SRCL)	★★★★	$86	$64.06	High	Narrow	0.74	5.48	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 127	Medium	Narrow	0.83	367.92	Zhong
Vornado Realty Trust (VNO)	★★★★	$84	$70.27	Medium	None	0.84	13.36	Schwer
Welltower (WELL)	★★★★	$74	$56.14	High	None	NA	20.88	Brown
Technology								
Guidewire Software (GWRE)	★★★★	$100	$92.46	Medium	Wide	0.92	7.39	Nelson
Intel (INTC)	★★★★	$62	$54.98	Medium	Wide	0.89	256.21	Davuluri
KLA-Tencor (KLAC)	★★★	$125	$111.06	High	Wide	0.89	17.31	Davuluri
Microchip Technology (MCHP)	★★★★	$112	$93.16	Medium	Wide	0.83	21.83	Colello
Microsoft (MSFT)	★★★★	$117	$97.91	Medium	Wide	0.84	752.26	Nelson
MYOB Group (MYO)	★★★★	AUD 4.05	AUD 3.16	Medium	Narrow	0.78	1.89	James
Qualcomm (QCOM)	★★★★	$75	$54.97	High	Narrow	0.73	81.50	Davuluri
Sabre (SABR)	★★★★	$27	$23.18	Medium	Narrow	0.86	6.39	Wasiolek
Salesforce.com (CRM)	★★★★	$145	$130.62	Medium	Wide	0.90	97.04	Nelson
Synaptics (SYNA)	★★★★	$64	$45.62	Very High	None	0.71	1.58	Davuluri
TDK (6762)	★★★	JPY 11500	JPY 10290	High	None	0.89	1298.60	Ito
Tencent Holdings (700)	★★★★	HKD 641	HKD 408.8	High	Wide	0.64	3884.91	Tam
Utilities								
Contact Energy (CEN)	★★★★	NZD 6.2	NZD 5.59	Medium	Narrow	0.90	4.00	Atkins
Dominion Energy (D)	★★★★★	$84	$64.06	Low	Wide	0.76	41.80	Fishman
FirstEnergy (FE)	★★★★	$40	$33.91	Low	Narrow	0.85	16.17	Fishman
Gas Natural SDG (GAS)	★★★	EUR 23.5	EUR 21.82	Medium	Narrow	0.93	21.82	Fulop
SCANA (SCG)	★★★★★	$57	$35.67	Medium	Narrow	0.63	5.09	Miller

Source: Morningstar. As of May 11, 2018

Highlighted Stocks

Anheuser-Busch InBev BUD

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★★	Consumer	Stable	USD	126	95.05	Low	Wide	0.75	160.19

Source: Morningstar. As of May 11, 2018

A strong performance by the global brands across the region, however, indicates that consumers are still trading up, and AB InBev stands to benefit from that trend.

Analyst Note, May 9, 2018
Bears will point to weakness in Brazil and the U.S. as justification for the sell-off in AB InBev's shares over the past six months, but this was a reasonable first quarter that demonstrated there is more to the story than those two markets. We are encouraged by evidence of continued premiumisation and by management's upbeat outlook. We remain constructive on the shares and reiterate our wide moat rating and our $126 fair value estimate for the ADRs.

For all investors' concerns about AB InBev's ability to grow, the 5.3% organic and geographically constant revenue growth that AB InBev achieved in the first quarter—and a weak quarter for volumes—puts the company at the top end of its global consumer staples peer group in terms of organic growth last year, with mid-single-digit growth achieved in markets such as China and South Africa. Nevertheless, the report was not without disappointments. We had anticipated a volume decline in Brazil because of technical issues in the year-over-year comparison, but the reported volume drop of 11% (with beer down 8% and other beverages down 19%) was more severe than our assumption, most likely because the firm was aggressive on pricing despite an overall market contraction in the mid-single-digit range. A strong performance by the global brands across the region, however, indicates that consumers are still trading up, and AB InBev stands to benefit from that trend.

In the U.S. the company underperformed again, with retail shipments down 3.3%, about 1 percentage point worse than the industry. The firm is struggling there because mainstream brands are losing share to craft, and we would not bet on a recovery, even though the above-premium portfolio has been winning share. Nevertheless, we think this is more than priced into the stock. We expect the U.S. to weigh on both group volumes and sales, and assume a gradual fading of revenue growth from 5% currently to just 3% in the steady state.

AB InBev is as much of a margin story as it is a growth story, however, and on that score, the company delivered solid execution again. The first-quarter EBITDA margin expanded 70 basis points, in spite of some up-front spending on marketing activities around the upcoming FIFA World Cup, which should support sales growth for the next two quarters, particularly in Latin America and Europe.

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Albemarle ALB

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Basic Materials	Stable	USD	120	98.37	High	Narrow	0.82	10.89

Source: Morningstar. As of May 11, 2018

We support Albemarle's strategy of pursuing longer-term contracts and think this will allow the lithium business to maintain EBITDA margins in the mid-40% range through 2025 despite our forecast of lower long-term lithium prices.

Analyst Note, May 10, 2018

Albemarle reported solid first-quarter results, as total EBITDA was up 18% year on year to nearly $250 million during the quarter, driven by double-digit lithium volume and pricing growth. Although management raised the low end of EPS guidance by $0.10 per share to $5.10 from $5.00, the company left the high end of guidance unchanged at $5.40. The market reacted negatively to this news, sending shares down over 4% to roughly $97.50 per share at the time of writing. We see no reason to change our outlook for the company and as a result, we maintain our $120 per share fair value estimate and our narrow moat rating. At current prices, we think Albemarle has an attractive risk-adjusted upside.

Albemarle sells a higher proportion of its lithium volumes under contract than its competitors, which makes the company's annual earnings outlook less volatile from quarter to quarter. Management noted that the company has nearly 100% of its 2018 lithium volumes under contract. Further, management said that lithium contract lengths are expanding from three- to five-year terms to five to 10 years as customers want security of supply. We support Albemarle's strategy of pursuing longer-term contracts and think this will allow the lithium business to maintain EBITDA margins in the mid-40% range through 2025 despite our forecast of lower long-term lithium prices.

Our lithium outlook is unchanged. We forecast lithium carbonate prices on an LCE contract basis will remain at roughly $11,000 per metric ton (in real terms) through 2020 as we see new supply ramping up more slowly than the market expects while demand continues to grow at roughly 16% per year. Over the long term, we maintain our forecast for a gradual lithium price decline to $8,500 per metric, in real terms, as we continue to see new supply pushing the marginal cost of lithium carbonate production from high-cost operations in Europe and China to mid- to high-cost Western Australia spodumene.

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Medtronic MDT

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Healthcare	Stable	USD	105	85.46	Medium	Wide	0.81	116.13

Source: Morningstar. As of May 11, 2018

We think that the addition of Weinstein will bring a deep well of med-tech expertise and connections in the industry.

Analyst Note, May 7, 2018
In an interesting—but increasingly common—move, Medtronic has hired longtime sell-side analyst Mike Weinstein to head up strategy. Considering Weinstein just joined Medtronic, we're holding steady on our valuation, though we continue to think shares are currently undervalued. We think that the addition of Weinstein will bring a deep well of med-tech expertise and connections in the industry, which current CFO Karen Parkhill lacks as she came from a banking background. None of this changes our view of Medtronic's wide economic moat, which stems from intangible assets including intellectual property and broad relationships with practitioners and hospitals.

We expect that Weinstein will sharpen Medtronic's focus on M&A activities, help streamline the portfolio (including the potential sale of some products or businesses), and influence and clarify the firm's approach to capital allocation. Following years of tuck-in acquisitions and the larger purchase of Covidien, Medtronic is truly a sprawling med-tech behemoth where any single product is unlikely to boost or sink the ship. This also makes it more difficult for investors to understand what's driving the business. Indeed, we think the market doesn't fully appreciate how Medtronic's recent efforts to forge value-based contracts with hospitals will help insulate the firm from the peaks and valleys of product cycles that have historically characterized the cardiac device industry.

While we expect Weinstein will contribute positively to Medtronic's strategy, operational execution can be challenging, especially for a firm of Medtronic's breadth. Although we do not think Medtronic has been subject to any extraordinary operational slip-ups, the firm has yet to deliver on promised margin expansion (which we don't anticipate will kick in until fiscal 2020). We recognize translating sound strategy into operational improvements and, ultimately, financial results can take time.

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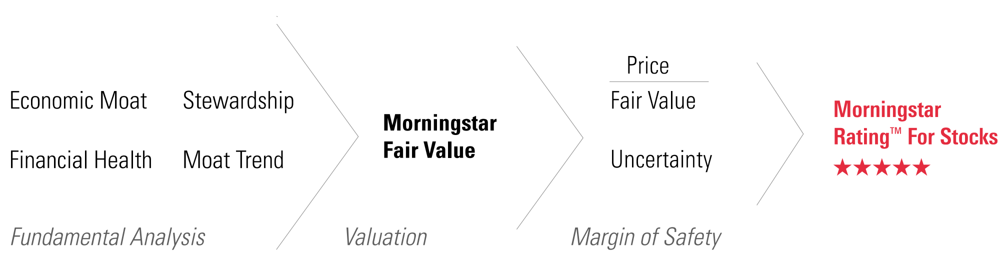
Research Methodology for Valuing Companies

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.

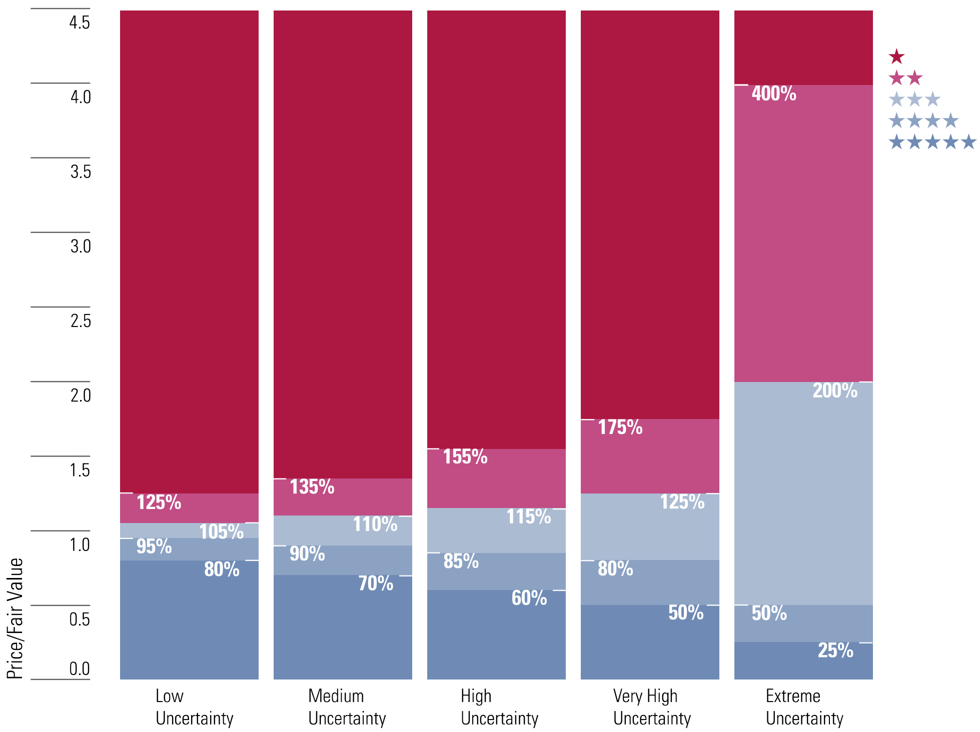
Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case and a 25% probability that the company will perform worse than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

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.

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