Research Highlights

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

Morningstar Equity Research
Oct. 29-Nov. 2, 2018

Contents

Dialysis Remains Moatworthy Despite Regulatory Concerns

We've long believed that the kidney care industry is one of the few healthcare provider markets supportive of durable economic moats. The attractive returns on capital posted by DaVita and Fresenius Medical Care support this view, as they have carved out distinct competitive positions underpinned by cost advantages attainable by only the largest companies in the space. With the industry's convoluted reimbursement structure back front-and-center in investors' minds, we took a closer look and came away confident in our outlook for both companies and for the industry.

These pricing concerns have weighed more heavily on DaVita's valuation, given its focus on dialysis services and reliance on the U.S. market. Fresenius has fared a bit better, with a more relevant international presence and a dominant dialysis products business that helps diversify its operations. Ultimately, we believe the critical products and services provided by both DaVita and Fresenius ensure their economic moats will endure over the long run. Following recent weakness, investors have the opportunity to invest in DaVita and Fresenius at roughly 20% and 13% discounts to our fair value estimates, respectively.

- We think DaVita and Fresenius have dug defensible economic moats underpinned by cost advantages that have been built up through aggregating scale. Now accounting for the treatment of 70% of patients nationwide, these businesses have secured market power that we think will be difficult to displace.
- Current market prices imply a near worst-case outcome regarding the upcoming vote on Proposition 8 in California. While we believe the ballot measure is unlikely to pass, our base-case assumption would call for roughly 6% lower EBITDA at DaVita, and only 1%–2% for Fresenius, versus market-implied expectations suggesting nearly 10%, and 6%–7%, respectively. Pages 8 and 9 detail these assumptions.
- Dialysis services is one of the few healthcare provider niches that we believe is exposed to structural growth drivers, which gives us added confidence in our forecasts. After growing at a 3.5% annual clip over the past decade, we expect the U.S. ESRD population to expand roughly 3% annually through 2022.
- Both DaVita and Fresenius now trade at meaningful discounts to our DCF-derived fair value estimates and their historical valuation multiples. At 13.0 times and 14.3 times our 2019 earnings forecasts, respectively, we think investors would be well-served picking up shares of these narrow-moat enterprises.

Industry Reimbursement Structure Has Encouraged Provider Consolidation

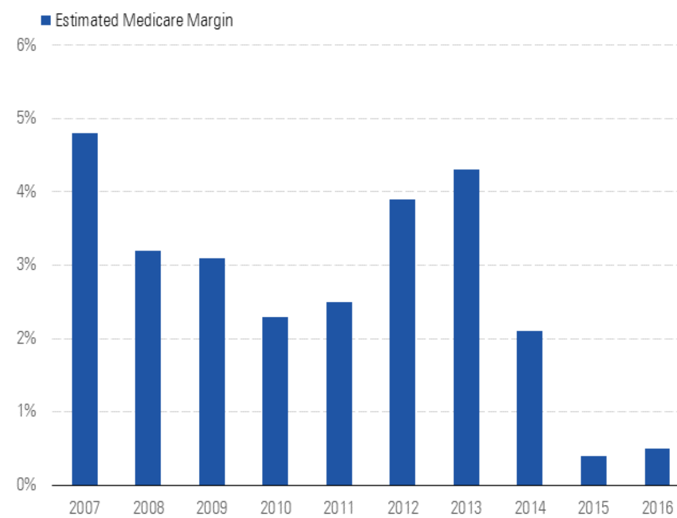
The dialysis industry is characterized by a number of factors that we think have created undue concern for investors, not least of which is its reimbursement structure that looks almost nothing like any other area of healthcare. Unfortunately, in-center hemodialysis has been and will likely remain the primary treatment for patients suffering from end-stage renal disease, or ESRD. The need for patients to undergo treatment three times per week for three to four hours each indefinitely (or until receiving a kidney transplant) ensures that ESRD patients are a cost outlier nationwide. As a result, Congress authorized the ESRD program under Medicare in 1972 classifying ESRD as the only disease category universally covered by Medicare following diagnosis, irrespective of age or disability.

The program maintains a 33-month care coordination period, during which a patient's commercial insurance plan remains the primary payer for any kidney care needs, ensuring that Medicare shares the cost of this patient population with the private sector. While a positive for patients and their families, this dynamic creates a tough reimbursement environment for those providing dialysis services.

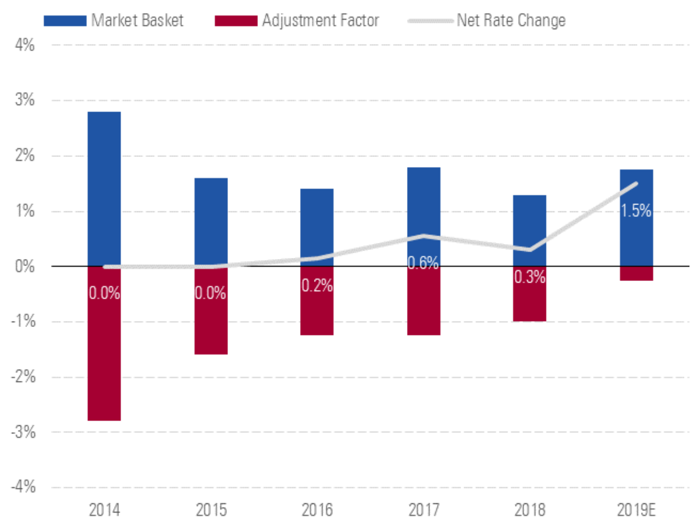
Medicare pays a composite rate that the Medicare Payment Advisory Commission, or MedPAC, estimates provides roughly breakeven profitability for service providers, as shown in Exhibit 1. While there's some profitability dispersion at the individual facility level explained by differences in treatment volume that indicates the presence of scale advantages in the industry, we believe that Medicare covered patients contribute very little to the overall industry profit pool.

Exhibit 1 Medicare Reimbursement Rates Allow for Break-Even Margins

Medicare Margins Have Weakened in Recent Years…



…As Net Payment Rates Haven't Kept Pace With Cost Inflation



Source: Morningstar, Medicare Payment Advisory Commission, company filings.

Jake Strole | jake.strole@morningstar.com

Netflix Needs to Chill

Even with a recent pullback in the stock, shares in Netflix remain up over 50% year to date, due in part to the reaction to the continued expansion of the subscriber base. We continue to believe that the market is overreacting to the subscriber growth, and we reiterate our $120 fair value estimate for this narrow-moat firm. We also have reservations about its ability to meet or exceed market expectations around future subscriber growth and margin expansion as well as the chances that the firm can reverse its ongoing cash burn in the near term.

We project that the firm will face increased competition in the U.S. and internationally from current players and new subscription video on demand services from media and tech firms. Netflix will also need to compete with entrenched players in emerging markets such as India, where the firm's offering is overpriced. As a result, we expect Netflix's ability to raise prices and expand margins to be constrained as it faces larger firms with deeper pockets.

While we still believe that Netflix enjoys a narrow moat based on its intangible assets and network effect, shares of the firm still appear fundamentally overvalued. Our 1-star call rests on five key points about Netflix and the competitive landscape:

1. Competition in the U.S. and internationally is increasing and will continue to do so in the near future.
2. SVOD competitors plan on undercutting Netflix's pricing, which should limit the speed of price increases.
3. Netflix's free cash flow burn will continue as the company ramps up its investment in content.
4. The need for increased content and marketing spending outside of the U.S. will limit the rate of margin expansion for the international segment.
5. We envisage a world in which Netflix is one of the major OTT media channels, not the only one or part of a duopoly with Amazon.

These five issues form the outline of our discussion of the SVOD marketplace and Netflix's unique position within it.

One challenge is the increased competition that the firm faces in the U.S. and international markets, not only from Amazon, but also from new well-capitalized entrants and other established local or regional players. Disney will launch its own branded SVOD service in the second half of 2019, and other firms such as Apple and Walmart are reportedly planning on entering the market as well. Because of these firms' other revenue sources, we suspect that the new platforms will undercut Netflix on price, a promise already made by Disney management. Netflix already faces lower-price competitors in major markets, such Hotstar in India.

Many Netflix bulls appear to view the current $8 billion annual content expense as a long-term investment that, once made, will enable the firm to lower its content spending. We believe that while content libraries do have enduring value, Netflix is similar to more traditional media networks such as CBS or HBO in that it needs to constantly acquire and produce new content to both attract and retain viewers (also known as subscribers in the case of Netflix and HBO). If Netflix significantly reduced the amount of new content that it put onto its platform, we would expect churn to increase as viewers flocked to the other OTT providers and traditional channels, which would be adding new shows and movies. In addition, while Netflix is building out a strong content backlog, competitors such as Disney, Warner Bros., and NBC Universal have been creating their libraries for decades and continue to expand them with new content. These firms can also monetize both new and old content on multiple platforms, unlike Netflix, which has only one primary source of revenue, subscriptions.

While Netflix is the largest global SVOD platform, we don't believe that viewers of the near future will only have a choice between Netflix and Amazon. Not only will there be SVODs from traditional firms like Disney, we believe that consumers will continue to watch linear TV. While cord-cutting and cord-shaving have hurt the traditional pay-television providers in the U.S., the lower-priced OTT bundles from providers such as Sling, Hulu, and YouTube have attracted over 6 million subscribers. And though ratings are down for TV viewing, the average American household still watches over four hours of live and time-shifted TV a day, according to Nielsen. Beyond traditional media firms like Disney and CBS, tech firms like Facebook and Apple have started to invest in content creation. We believe that the current stock price reflects a final state in which Netflix is either the only major content provider or part of a duopoly with Amazon, particularly for serial (or TV) content.

Neil Macker, CFA | neil.macker@morningstar.com

Employment Recruiters Offer Attractive Opportunities

The recruitment sector is often viewed with caution and suspicion by investors who focus on short-term trends while frequently overlooking longer-term strategies and themes. In this piece, we highlight several structural changes occurring across the recruitment industry, the outcomes of which should provide a tailwind to growth over the coming years. We also look at the efforts of the largest industry players, Adecco and Randstad, to diversify their exposures away from general staffing into higher-margin and less-cyclical areas of recruitment.

While acknowledging that these companies remain highly exposed to the economic cycle, we recognize the material benefits that are accruing to Adecco and Randstad as a result of their strategic actions. As such, we believe both companies are in a far better position than they were a decade ago, with higher-quality businesses and stronger balance sheets. We believe the sell-off in both stocks year to date and the lack of clear guidance from the sell side have provided an attractive opportunity for investors to accumulate positions in these names with an appropriate margin of safety.

- Concerns about a recession are premature, with performance year to date at both companies robust.
- Investors have overlooked the structural progress Adecco and Randstad have made in improving the quality of their businesses.
- Structural changes to the recruitment market are also providing significant tailwinds that should support growth over the medium term.
- Current valuations are highly attractive, with the risk/reward equation disproportionately skewed in favour of investors.

Michael Field, CFA | michael.field@morningstar.com

Best Ideas

Company and Industry	Morningstar Rating	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price / Fair Value	Market Cap (B)	Analyst
Basic Materials								
Cameco (CCJ)	★★★★★	$19.5	$11.06	High	Narrow	0.57	4.38	Inton
Compass Minerals International (CMP)	★★★★	$81	$51.42	High	Wide	0.63	1.74	Goldstein
Martin Marietta Materials (MLM)	★★★★	$260	$175.29	High	Narrow	0.67	11.05	Inton
Communication Services								
BT Group (BT.A)	★★★★	GBX 360	GBX 240.55	High	Narrow	0.67	23.87	C. Nichols
China Mobile (941)	★★★★	HKD 97	HKD 74.05	Medium	Narrow	0.76	1516.21	Baker
Comcast (CMCSA)	★★★★	$42	$37.95	Medium	Wide	0.90	173.52	Macker
Telefonica (TEF)	★★★★★	$13	$7.36	High	Narrow	0.57	38.26	C. Nichols
Telstra (TLS)	★★★★	AUD 4.4	AUD 3.06	Medium	Narrow	0.70	36.39	Han
Vodafone Group (VOD)	★★★★	$250	$151.5	High	Narrow	0.61	40.48	C. Nichols
Consumer Cyclical								
Alibaba Group Holding (BABA)	★★★★	$240	$151.25	High	Wide	0.63	365.93	Hottovy
Bayerische Motoren Werke (BMW)	★★★★	EUR 117	EUR 76.79	High	Narrow	0.66	49.60	Hilgert
Expedia Group (EXPE)	★★★★	$180	$127.62	High	Narrow	0.71	18.69	Wasiolek
General Motors (GM)	★★★★	$45	$36.47	High	None	0.81	51.64	Whiston
Hanesbrands (HBI)	★★★★★	$27	$16.22	Medium	Narrow	0.60	5.85	Swartz
InvoCare (IVC)	★★★★	AUD 16	AUD 11.85	Medium	Wide	0.74	1.30	Ragonese
Mattel (MAT)	★★★★	$21	$14.27	High	Narrow	0.68	4.69	Katz
Norwegian Cruise Line Holdings (NCLH)	★★★★	$69	$46.4	High	Narrow	0.67	10.28	Katz
Walt Disney (DIS)	★★★★	$130	$116.1	Medium	Wide	0.89	172.67	Macker
WPP (WPP)	★★★★★	GBX 1450	GBX 893	Medium	Narrow	0.62	11.27	Mogharabi
Consumer Defensive								
A2 Milk (ATM)	★★★★	AUD 14.6	AUD 10.7	High	Narrow	0.73	7.97	Fleck
Anheuser-Busch InBev (BUD)	★★★★★	$118	$76.68	Low	Wide	0.65	144.60	Gorham
G8 Education (GEM)	★★★★★	AUD 3.5	AUD 2.02	High	None	0.58	0.92	James
General Mills (GIS)	★★★★★	$58	$44.32	Low	Wide	0.76	26.11	Vora
Imperial Brands (IMB)	★★★★★	GBX 3700	GBX 2653	Low	Wide	0.72	25.30	Gorham
Kao (4452)	★★★★	JPY 8800	JPY 7730	Low	Wide	0.88	3767.76	Wei
Mondelez International (MDLZ)	★★★★	$52	$42.37	Medium	Wide	0.81	61.03	Lash
PepsiCo (PEP)	★★★★	$122	$111.51	Low	Wide	0.91	157.40	Vora
Procter & Gamble (PG)	★★★★	$97	$89.59	Low	Wide	0.92	220.94	Lash
Energy								
Cenovus Energy (CVE)	★★★★	$21	$11.49	Very High	None	0.55	14.12	Gemino
Enbridge (ENB)	★★★★★	$62	$40.89	Medium	Wide	0.66	71.61	Gemino
Enterprise Products Partners (EPD)	★★★★★	$35.5	$27.01	Low	Wide	0.76	58.77	Ellis
Royal Dutch Shell (RDS.B)	★★★★	$83	$65.24	Medium	Narrow	0.79	258.80	Good
Total (TOT)	★★★★	$77	$57.82	Medium	None	0.75	150.95	Good
Woodside Petroleum (WPL)	★★★★	AUD 46.5	AUD 34.18	High	None	0.74	32.00	Taylor

Source: Morningstar. As of Nov. 2, 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								
Agricultural Bank of China (601288)	★★★	CNY 4.2	CNY 3.87	High	Narrow	0.92	1317.14	Tan
Altaba (AABA)	★★★★	$98	$62.86	High	None	0.64	37.88	Mogharabi
American International Group (AIG)	★★★★★	$76	$43.12	Medium	None	0.57	36.53	Horn
BlackRock (BLK)	★★★★★	$580	$412.99	Medium	Wide	0.71	66.40	Warren
Capital One Financial (COF)	★★★★	$127	$89.3	Medium	Narrow	0.70	42.30	Plunkett
Credit Suisse Group (CSGN)	★★★★★	CHF 22	CHF 12.93	High	Narrow	0.59	33.02	Scholtz
Link Administration Holdings (LNK)	★★★★	AUD 8.5	AUD 7.52	Medium	Narrow	0.88	3.98	James
Macquarie Group (MQG)	★★★	AUD 130	AUD 122.42	Medium	Narrow	0.94	42.02	Ellis
Pendal Group (PDL)	★★★★	AUD 11	AUD 8.18	Medium	Narrow	0.74	2.29	Likos
Westpac Banking (WBC)	★★★★	AUD 35	AUD 26.5	Medium	Wide	0.76	89.73	Ellis
Healthcare								
Allergan (AGN)	★★★★★	$263	$164.46	Medium	Wide	0.63	55.47	Waterhouse
McKesson (MCK)	★★★★★	$210	$129.09	Medium	Wide	0.61	25.22	Lekraj
Medtronic (MDT)	★★★★	$110	$91.55	Medium	Wide	0.83	123.88	Wang
Roche Holding (ROG)	★★★★★	CHF 333	CHF 241.75	Low	Wide	0.73	206.50	Andersen
Industrials								
Anixter International (AXE)	★★★★★	$107	$66.65	Medium	Narrow	0.62	2.23	Bernard
Beijing Enterprises Holdings (392)	★★★★	HKD 58	HKD 43.25	Medium	Narrow	0.75	54.58	Song
CK Hutchison Holdings (1)	★★★★★	HKD 118	HKD 81.9	Medium	None	0.69	315.83	Tan
G4S (GFS)	★★★★★	GBX 337	GBX 215	Medium	None	0.64	3.34	Field
GEA Group (G1A)	★★★★★	EUR 45	EUR 26.81	Medium	Wide	0.60	4.84	Molina
General Dynamics (GD)	★★★★	$216	$178.4	Medium	Wide	0.83	52.83	Higgins
Grupo Aeroportuario del Pacifico (GAP B)	★★★★	MXN 210	MXN 173.18	High	Wide	0.82	108.42	Higgins
Guangshen Railway (525)	★★★★★	HKD 6.3	HKD 2.96	High	None	0.47	23.93	Song
Johnson Controls International (JCI)	★★★★	$53	$33.34	High	Narrow	0.63	30.84	Bernard
Kion Group (KGX)	★★★★★	EUR 90	EUR 52.26	Medium	Narrow	0.58	6.10	Molina
Sodexo (SW)	★★★★	EUR 110	EUR 90.7	Medium	Narrow	NA	13.21	Field
Stericycle (SRCL)	★★★★★	$86	$50.78	High	Narrow	0.59	4.60	Young
Real Estate								
Aveo Group (AOG)	★★★★★	AUD 2.8	AUD 1.8	Medium	None	0.64	1.05	Sherlock
Sun Hung Kai Properties (16)	★★★★★	HKD 153	HKD 106.9	Medium	Narrow	0.70	309.69	Zhong
Welltower (WELL)	★★★	$72	$67.5	Medium	None	0.94	25.36	Brown
Technology								
Applied Materials (AMAT)	★★★★	$49	$35.35	High	Wide	0.72	32.32	Davuluri
Intel (INTC)	★★★★	$65	$48.22	Medium	Wide	0.74	213.96	Davuluri
KLA-Tencor (KLAC)	★★★★	$128	$94.92	High	Wide	0.74	14.01	Davuluri
Lam Research (LRCX)	★★★★	$185	$151.86	High	Narrow	0.82	21.99	Davuluri
Microchip Technology (MCHP)	★★★★★	$112	$70.37	Medium	Wide	0.63	15.49	Colello
Murata Manufacturing (6981)	★★★★	JPY 24000	JPY 18740	High	Narrow	0.78	3996.32	Ito
Tencent Holdings (700)	★★★★★	HKD 590	HKD 303.6	High	Wide	0.51	2890.34	Tam
Utilities								
Dominion Energy (D)	★★★★	$84	$70.33	Low	Wide	0.84	45.98	Fishman
Enel (ENEL)	★★★★	EUR 5.7	EUR 4.37	Medium	None	0.77	44.06	Fulop
FirstEnergy (FE)	★★★★	$41	$37.17	Low	Narrow	0.91	19.01	Fishman
Orsted (ORSTED)	★★★	DKK 450	DKK 421	Low	Narrow	0.94	175.20	Fulop
Scana (SCG)	★★★★	$56	$40.05	Medium	Narrow	0.72	5.71	Miller

Source: Morningstar. As of Nov. 2, 2018

Highlighted Stocks

Intercept Pharmaceuticals ICPT

Morningstar Rating	Sector	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Healthcare	Stable	USD	150	109.59	Very High	None	0.73	3.14

Source: Morningstar. As of Nov. 2, 2018

Despite the stock trading nearly 10% higher on Oct. 31, shares remain undervalued, presenting an attractive entry point for investors.

Analyst Note, Oct. 31, 2018
No-moat Intercept reported third-quarter results, with $46.6 million in worldwide Ocaliva sales, up 9% sequentially and 14% year over year. This quarter's sales were marginally lighter than we anticipated, so we have adjusted our full-year outlook to $181 million in Ocaliva sales, down from $185 million. Management attributed some weakness to seasonality, with patients less likely to be diagnosed or start new medication during the summer months, but reiterated full-year guidance of $170 million to $185 million in Ocaliva sales.

Further, Intercept reported lower-than-expected operating spending, so we've adjusted near-term expectations accordingly. After these adjustments, we do not expect a material change to our fair value estimate of $150 per share. Despite the stock trading nearly 10% higher on Oct. 31, shares remain undervalued, presenting an attractive entry point for investors.

Intercept has continued to build out its salesforce, focusing on targeting hepatologists and gastroenterologists, preparing the capacity necessary for selling Ocaliva in primary biliary cholangitis, or PBC, as well as the potential approval of obeticholic acid, or OCA, in noncirrhotic NASH (nonalcoholic steatohepatitis) patients with advanced fibrosis. The company's first potential regulatory approvals in NASH patients would be based on the results of the Regenerate trial of over 2,000 patients, which is expected to read out in the first half of 2019. While we expect Ocaliva to provide steady cash generation as uptake continues and the firm unlocks reimbursement negotiations in other regions, our valuation is significantly driven by our expectations for OCA in NASH. We model probability-weighted OCA sales of over $2 billion by 2023 compared with less than $600 million Ocaliva sales in 2023.

Karen Andersen, CFA | karen.andersen@morningstar.com

BT Group BT

Morningstar Rating	Sector	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Communications	Stable	USD	23	17.13	High	Narrow	0.74	33.10

Source: Morningstar. As of Nov. 2, 2018

Importantly, despite revenue declines, most of the other segments cut costs sufficiently to improve their EBITDA.

Analyst Note, Nov. 1, 2018
BT reported in-line fiscal second-quarter results, and we expect to maintain our GBX 360 per local share fair value estimate and narrow moat rating. Despite the local shares being up over 8% on the news, we believe the stock remains significantly undervalued. The firm reported revenue fell 2% year over year versus our full-year projection of a decline of 1.9%.

Once again, the consumer sector, which generates about 45% of net firmwide revenue, is driving revenue growth. We were particularly pleased that segment revenue growth accelerated to 4% after a more muted performance the first quarter. BT continues with its “more for more” strategy, where it raises prices, but offers additional services or faster speeds. This continues to be well received. Its newly launched BT Plus converged product is off to a good start and already has about 500,000 customers. We expect consumer will remain the main revenue growth driver, but it will be unable to offset revenue declines elsewhere this year.

While revenue in the other segments was flat to negative year over year, most of them declined less than in the first quarter. This trend provides hope that the other divisions can continue to shrink their losses, such that consumer will be able to lead the entire firm to revenue growth next year.

Importantly, despite revenue declines, most of the other segments cut costs sufficiently to improve their EBITDA. Overall, BT generated an adjusted EBITDA margin of 31.6% versus our full year projection of 31.4%. With this improved result management raised its EBITDA guidance to the high end of its range of GBP 7.3 billion to GBP 7.4 billion. We have been near the bottom of the range. However, updating our margin will likely just offset the higher pension deficit, which came in at GBP 4.5 billion, GBP 600 million higher than at the end of the first quarter.

Allan C. Nichols, CFA | allan.nichols@morningstar.com

Stifel Financial SF

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Financial	Stable	USD	60	47.73	High	None	0.80	3.32

Source: Morningstar. As of Nov. 2, 2018

Management expects that the fourth quarter will be the best of the year, which is typical for investment banks, and that net revenue in 2019 will be flat to up 13% compared with 2018.

Analyst Note, Oct. 31, 2018

Revenue growth has materially slowed at Stifel Financial, but the shares are starting to look attractive. For the first nine months of 2018, net revenue increased 5.1% to $2.23 billion. However, third-quarter net revenue of $738 million was only 2.4% higher than a year ago and about flat with the first two quarters of the year. The 9% growth in client assets to a record $289 billion and related increase in wealth management segment revenue have scarcely been enough to offset the fall in institutional trading and financial advisory revenue. Management expects that the fourth quarter will be the best of the year, which is typical for investment banks, and that net revenue in 2019 will be flat to up 13% compared with 2018. We find this range for 2019 plausible, as our base-case net revenue growth estimate is nearly 10%, close to the high end of the range, while environmental factors that are casting a shadow over short- to medium-term results would result in the low end. We don't anticipate making a material change to our $60 fair value estimate for no-moat Stifel Financial, and we assess that the shares are moderately undervalued.

There are many cautionary signs lately, but we believe the market has overreacted. For investment banking, fear of trade restrictions and rising interest rates hurting financing are being cited for stalling acquisition activity. The recently volatile and downward-trending equity markets can also scuttle equity underwriting transactions and weigh on the client assets that power the wealth management business. Net interest income that had been a driver of earnings has materially slowed, because cash balances of clients have in multiple cases decreased banking deposits and net interest margins aren't materially expanding from rising funding costs. That said, on a long-term basis, we still think the shares are moderately undervalued, despite all of these signs of slowing growth and even a potential downturn.

On the margin, there were several positive signs at Stifel. The company completed its acquisition of a bank, Business Bancshares, which will allow more client cash to be swept into Stifel-owned banks. This should increase net interest income growth. The company also had one of its best financial advisor recruiting quarters, adding 31 net new advisors. It seems that the reduction in uncertainty regarding the Department of Labor's fiduciary rule has helped recruiting, while the Securities and Exchange Commission's best-interest standard and some wealth management firms exiting the broker protocol for recruiting haven't severely restrained advisors from switching firms. Finally, Stifel's management said it believes the shares are undervalued, and the firm is likely to step up share-repurchase activity.

Michael Wong, CFA, CPA | michael.wong@morningstar.com

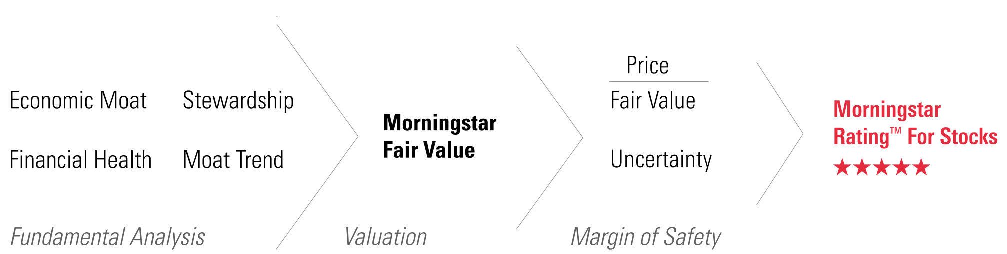
Research Methodology for Valuing Companies

Overview

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

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

Morningstar Research Methodology



Source: Morningstar.

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

Economic Moat

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

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

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

Estimated Fair Value

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

Our model is divided into three distinct stages:

Stage I: Explicit Forecast

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

Stage II: Fade

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

Stage III: Perpetuity

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

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

Uncertainty Around That Fair Value Estimate

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

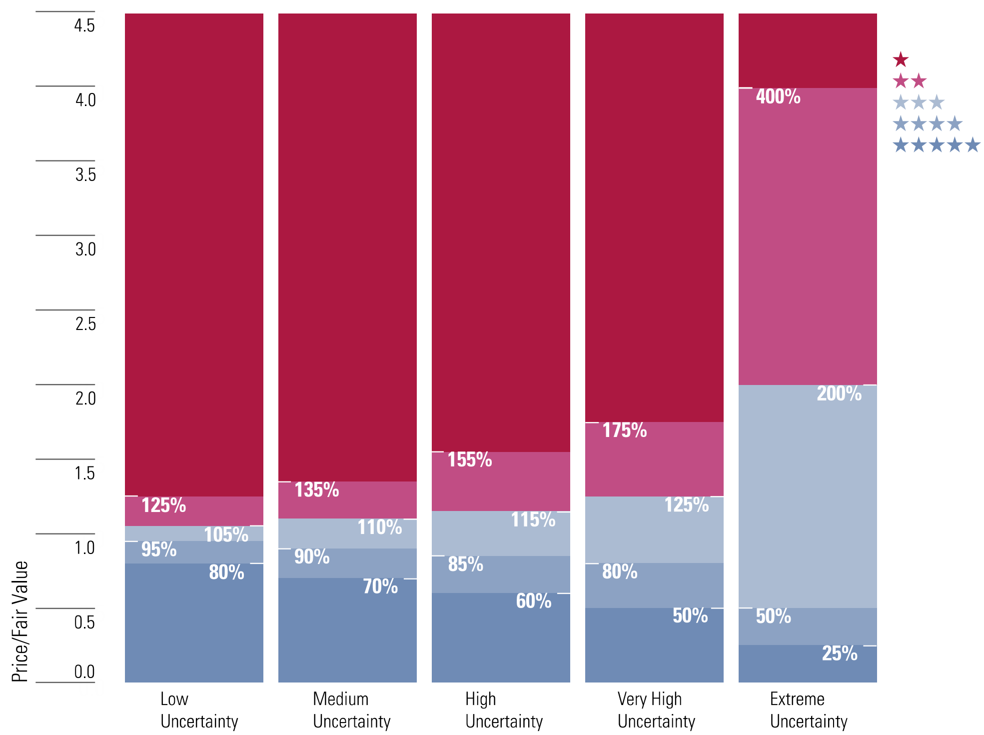
Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case and a 25% probability that the company will perform worse than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

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

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

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

Morningstar Equity Research Star Rating Methodology



Market Price

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

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

Morningstar Star Rating for Stocks

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

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

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

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

The Morningstar Star Ratings for stocks are defined below:

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

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

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

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

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

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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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For More Information

+1 312 696-6869
equitysupport@morningstar.com

22 West Washington Street
Chicago, IL 60602 USA