Research Highlights

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

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

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Blockchain Is a Broad Threat, but Some Companies Are More Insulated Than Others

Blockchain is full of promise. Investment in the space totals billions of dollars. Large corporations, venture capital funds, and initial coin offerings are funding projects. The activity is not completely misguided; blockchains have the potential to disrupt economic activities ranging from simple payments to the structure of a corporation as it currently exists. We see three broad categories of applications for the technology: financial transactions, data management, and marketplace activity. Companies that engage in these functions are seemingly at risk, as blockchain technology can potentially lower transaction costs as well as the costs of recordkeeping. However, we've identified some narrow- and wide-moat companies that will be less vulnerable to the blockchain threat. These companies provide value-added services along with simpler transaction processing and recordkeeping functions. Then, we point out that the early-stage technology still suffers from a handful of technical issues, including problems with scalability, privacy, and leadership.

Exhibit 1 Blockchain Could Disrupt Multiple Industries

		Relevant moat sources			
Industry	**Blockchain Threat Synopsis**	**Intangible assets**	**Network effects**	**Switching costs**	**Cost advantages**
Custody	An immutable public record on the blockchain could eliminate the need for custody, storage, and record-keeping services.			●	●
Securities exchanges	Blockchain enables direct value transfer and record-keeping, eliminating the need for costly capital markets intermediation.	●	●		
Payments	Blockchain enables direct value transfer without issuers, acquirers, networks, and other intermediaries.	●	●		
Cloud computing	A decentralized network of computers can be used for data processing and storage.	●			●
Transportation brokerage	Third-party intermediaries connect buyers and sellers of transportation services.	●	●		
Marketplaces and distributors	Buyers and suppliers can coordinate activities via blockchain.	●	●		●
Credit reporting	Blockchain enables secure storage and personalized control of private customer data.	●			

Source: Morningstar

- Ideally, a blockchain is trustworthy, transparent, and decentralized. These features provide most of the technology's appeal, allowing businesses to solve problems related to trust, recordkeeping, and transaction costs.
- Blockchain technology provides a way to decentralize three important economic functions: financial transactions, identity and data management, and marketplaces. Decentralized solutions could disrupt companies that create value by centralizing such activities.

- The financial-services sector abounds with companies that serve to centralize financial transaction activity. Blockchain technology removes the need for a trusted third party and lowers transaction costs.
- Centralized control of data and identity management is increasingly creating security and privacy issues. Blockchains allow individuals to maintain control over their own digital identities.
- Marketplaces such as Amazon and Expedia, which serve as intermediaries between buyers and sellers, have arisen in numerous sectors. Marketplace activity can conceivably migrate to a blockchain, removing the need for a corporate intermediary.
- Corporations exist to lower transaction costs and solve problems of trust. Blockchain technology therefore can also enable entirely new forms of economic organization.
- Moats arising from network effects and cost advantages are, on the surface, most vulnerable to a technology that decentralizes activity and reduces transaction costs. Moats arising from switching costs and intangible assets are less vulnerable.
- Blockchain technology removes the need for a trusted third party and potentially lowers transaction costs, but cost advantages are seldom the only variable in play. Many intermediaries provide value-added services in addition to commoditized transaction processing and recordkeeping, and companies often benefit from multiple moat sources. Even in commoditized lines of business, incumbents often benefit from massive economies of scale.
- Blockchain technology is in its infancy, with major technical hurdles to overcome before reaching mainstream viability. Scalability and cost are primary concerns, as are privacy issues, despite the security inherent to encrypted, distributed ledgers. Decentralized control can exacerbate differences, slow progress, and lead to balkanization. Ironically, private and permissioned blockchains might better balance the benefits of decentralized ledgers with those of centralized systems. In this case, the benefits of blockchain technology could accrue to incumbents or their customers.
- Narrow- and wide-moat companies serving as trusted intermediaries in several industries are trading at significant discounts to fair value. American Express, McKesson, Anixter, TripAdvisor, and Facebook are some of our top current picks among these companies.
- Utility token demand rests on 1) the ability of an individual token to add value for users, and 2) the lack of viable alternatives to its use. We believe that value creation in the token world will depend not only on networks of users and developers, but also durable competitive advantages over both decentralized and centralized competitors.

Jim Sinegal | james.sinegal@morningstar.com

Shale Reckoning Might Take Longer Than We Thought

We believe the market continues to underestimate the capacity of the shale industry to throw oil markets back into oversupply. U.S. production reached a new high-water mark in November 2017 and is widely expected to keep growing through 2018. But this growth hasn't prevented inventory fundamentals from improving, leading many to believe that the market can soak up U.S. growth indefinitely.

This assumption is false, but the reckoning may not happen as quickly as we previously thought. Economic malaise in Venezuela has triggered precipitous output declines, and it isn't clear how quickly this can be rectified, if at all. The likelihood of hefty outages in Iran has soared now that U.S. President Donald Trump is no longer expected to waive sanctions next month. And other OPEC producers are fanning the flames with even steeper cuts than they originally agreed to. All this creates a supply vacuum this year that can easily offset U.S. growth, however strong, and prolong the illusion that shale isn't a threat.

Current oil prices have risen to reflect this scenario and are now more than 20% higher than our midcycle forecast of $55 per barrel of West Texas Intermediate. But that sends entirely the wrong signal to shale producers. The U.S. light tight oil rig count has spiked to 664, which is well above the "Goldilocks" level that keeps the market balanced in the long run, setting up a shale surge that could overwhelm the market after 2018. But the industry hasn't recognized the danger. Because of the long lag between adding rigs and seeing a production response, the impact of the most recent additions hasn't been felt yet.

And to make matters worse, temporary equipment bottlenecks and labor shortages are still slowing completions and masking shale's growth potential (only 70% of Permian Basin wells drilled in 2017 were completed). When these are resolved, the shale industry will find itself rapidly overheating unless producers start slowing down, and only a drop in oil prices can persuade them to do that. But current stock prices assume a far more benign environment—the average price/fair value for the segment is currently 1.25, and there are few compelling opportunities.

- **2018 Fundamentals Look Strong:** Global crude stockpiles have normalized after several years at an uncomfortable elevation. OPEC cuts have been a major contributor, with surprisingly strong compliance thus far (aided by Venezuela's collapse). But the success of the cartel's strategy was also underpinned by an unexpected surge in demand, fueled by robust economic growth.
- **Venezuelan Collapse Continues:** Venezuela remains in crisis, and its oil production has slumped further after an initial plunge in the fourth quarter of 2017. As this doesn't look like a natural geological decline, there is still hope that at least some of the volumes lost can be restored in short order. But so far, output has tracked the low end of our prior forecasts, and we have reduced our base-case estimate for 2018 volumes.
- **Iran Sanctions on the Horizon:** The likelihood now is that Trump will refuse to extend sanctions relief for Iran. That puts more than 1 million barrels per day of oil supply at risk, based on the impact of previous sanctions, and could further ratchet pressure on oil markets, which already look undersupplied this year.

However, since the other stakeholders may not participate this time even if the U.S. reapplies sanctions, and because a diplomatic compromise could still emerge, the actual impact on Iranian production could be less than this worst-case scenario.

- **Instability in Libya and Nigeria:** There is a strong possibility of further supply disruptions, especially in Libya and Nigeria. Both countries suffered steep declines in the last few years due to political upheaval in the former and militia attacks in the latter. As a result, neither was officially given a production ceiling in the OPEC agreement, leaving them free to grow this year—and potentially reduce the supply shortfall we expect. But Libya has already suffered further outages this year, and militia groups in Nigeria have issued credible threats as well. If conditions deteriorate in either country, over 500 mbpd could vanish from the market.
- **Temporary Constraints Keeping Shale Growth Below Potential:** Despite a rapid increase in rigs and activity, U.S. growth has been lackluster since the bottom of the downturn, leading many to believe that the shale patch has limited capacity for further expansion. But the labor and equipment shortages that have anchored shale growth thus far are not expected to persist, which means we haven't seen the shale growth machine firing on all cylinders yet. Strong near-term fundamentals have pushed up prices, sending shale producers off to the races—the current tight oil rig count is more than 100 higher than it needs to be. A pent-up shale surge could overwhelm the market unless producers slow down, and lower crude prices are the only way to incentivize that.
- **Enormous Uncertainty, and Investment Implications:** Oil markets are deeply cyclical, and WTI crude remains more than 20% above our midcycle forecast of $55/bbl. If it stays at that level, the shale industry will have no reason to make the activity cuts it urgently needs to. But the market hasn't noticed yet. Stocks, driven up by strong near-term fundamentals, are priced for perfection. Even our top picks, narrow-moat-rated industry cost leaders Diamondback Energy and Pioneer Natural Resources, have limited upside at current prices. But we'd need to see a pullback from current levels before getting excited about either name.

Dave Meats, CFA | david.meats@morningstar.com

Apple Paints a Rosier 3Q Picture

Apple reported solid fiscal second-quarter results and provided investors with a decent third-quarter forecast that was not as bad as we feared. Although the iPhone X "super cycle" did not transpire over the past six months, iPhone unit sales held up well while higher average selling prices, or ASPs, per device continued to contribute to robust revenue growth. We were also impressed with growth seen in Other Products and Services, especially as we continue to believe that sales of add-on hardware and services should continue to drive switching costs that will help Apple make repeat, high-margin iPhone sales to its customers over time. Meanwhile, the company authorized another $100 billion of share repurchases while boosting its quarterly dividend by 16% to $0.73 per share, taking advantage of changes in U.S. corporate tax policies.

We plan to modestly raise our fair value estimate for narrow-moat Apple to $175 per share from $170 but continue to view shares as fairly valued.

Apple sold 52.2 million iPhones in the September quarter, up 3% year over year. However, iPhone revenue rose 14% year over year, thanks to an 11% increase in ASPs driven by sales of the higher-priced iPhone X. Apple noted that the X was its highest selling model in each of its 13 weeks in the March quarter (as opposed to the iPhone 8 or 8 Plus), which we again view as an encouraging sign regarding Apple's ability to maintain premium pricing. Other Products revenue rose 38% year over year thanks to Apple Watch and Airpods, which we think is an underrated, innovative hit for Apple. Services revenue rose 31% year over year, accelerating from 18% year-over-year growth in the December quarter, with particular strength in iCloud storage and Apple Music.

For the June quarter, Apple expects revenue of $51.5 billion-$53.5 billion, which, at the midpoint, would represent 16% year-over-year growth. We think the forecast implies iPhone unit sales of about 40 million units, or low- to mid-single-digit year-over-year growth. Yet unit sales at such levels would also imply another quarter of low-double-digit revenue growth, again thanks to structurally higher ASPs with the iPhone X introduction than in the year-ago quarter.

We note that many component suppliers pointed out slowdowns in smartphone-related chip orders in recent weeks, implying Apple as the main culprit. From our vantage point, it looks like demand for the iPhone lineup is still relatively healthy, but that Apple has a significant inventory buildup which it will attempt to drawdown in the June quarter. We note Apple's inventory balance of $7.7 billion as of the end of March, versus $2.9 billion at the end of the March 2017 quarter and $4.9 billion at the end of the September 2017 quarter.

We suspect that Apple built up enough iPhone Xs to prepare for a super cycle, but as one did not emerge, the company will sell these prebuilt devices in the June quarter (and perhaps September as well), thus severely crimping its ongoing iPhone production and passing the ramifications down through its supply chain. We view this as an encouraging sign for not only Apple, but its suppliers as well as any wireless chip weakness appears to be a timing problem, rather than Apple losing market share.

Bulls Say

- Between first-time smartphone buyers, users switching from Android, and repeat sales to current customers, Apple has plenty of opportunity to reap the rewards of its iPhone business.
- Apple's iPhone and iOS operating system have consistently been rated at the head of the pack in terms of customer loyalty, engagement, and security, which bodes well for long-term customer retention.
- We think Apple is still innovating with introductions of Apple Pay, Apple Watch, Apple TV, and AirPods; each of these could drive incremental revenue, but more crucially help to retain iPhone users over time.

Bears Say

- Apple’s decisions to maintain a premium pricing strategy may help fend off gross margin compression but could limit unit sales growth, as devices may be unaffordable for many customers.
- If Apple were to ever launch a buggy software update or subpar services, it could diminish the firm's reputation for building products that "just work."
- Apple is believed to be behind firms like Google and Amazon in artificial intelligence, or AI, development, which could be problematic as tech firms look to integrate AI in order to deliver premium services to customers.

Brian Colello, CPA | brian.colello@morningstar.com

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	$11.21	High	Narrow	0.66	4.51	Inton
Compass Minerals International (CMP)	★★★★	$83	$66.3	High	Wide	0.80	2.24	Goldstein
Martin Marietta Materials (MLM)	★★★★	$265	$202.41	High	Narrow	0.76	12.72	Inton
Communication Services								
BT Group (BT.A)	★★★★	GBX 370	GBX 232.15	High	Narrow	0.63	23.03	C. Nichols
China Mobile (941)	★★★★	HKD 102	HKD 73	Medium	Narrow	0.72	1494.71	Baker
Telefonica (TEF)	★★★★	$13	$8.3	High	Narrow	0.64	43.13	C. Nichols
Telstra (TLS)	★★★★★	AUD 4.6	AUD 3.24	Medium	Narrow	0.70	38.53	Han
Consumer Cyclical								
Advance Auto Parts (AAP)	★★★★	$159	$115.43	Medium	Narrow	0.73	8.54	Akbari
Bapcor (BAP)	★★★★	AUD 7	AUD 6.27	Medium	Narrow	0.90	1.75	Ragonese
Bayerische Motoren Werke (BMW)	★★★★	EUR 110	EUR 92.16	High	Narrow	0.84	59.94	Hilgert
Domino's Pizza Enterprises (DMP)	★★★★	AUD 53	AUD 42.05	Medium	Narrow	0.79	3.68	Faul
General Motors (GM)	★★★★	$56	$36.15	High	None	0.65	50.95	Whiston
Great Wall Motor (2333)	★★★★★	HKD 13.5	HKD 7.98	High	None	0.59	106.69	Hu
Hanesbrands (HBI)	★★★★★	$29	$16.51	Medium	Narrow	0.57	5.95	Weishaar
Mattel (MAT)	★★★★	$21.5	$13.95	High	Narrow	0.65	4.80	Katz
TripAdvisor (TRIP)	★★★★	$55	$38	High	Narrow	0.69	5.27	Wasiolek
Walt Disney (DIS)	★★★★	$130	$98.76	Medium	Wide	0.76	148.50	Macker
Consumer Defensive								
G8 Education (GEM)	★★★★★	AUD 4	AUD 2.41	High	None	0.60	1.09	James
General Mills (GIS)	★★★★★	$59	$41.21	Low	Wide	0.70	23.50	Vora
Imperial Brands (IMB)	★★★★★	GBX 3900	GBX 2595	Low	Wide	0.67	24.75	Gorham
Kao (4452)	★★★★	JPY 8800	JPY 7640	Low	Wide	0.87	3764.80	Wei
Mondelez International (MDLZ)	★★★★	$51	$37.57	Medium	Wide	0.74	55.42	Lash
Procter & Gamble (PG)	★★★★★	$98	$71.36	Low	Wide	0.73	179.44	Lash
Reckitt Benckiser Group (RB.)	★★★★★	GBX 7300	GBX 5560	Low	Wide	0.76	39.17	Gorham
Energy								
Cenovus Energy (CVE)	★★★★	$21	$12.99	Very High	None	0.62	15.96	Gemino
Enbridge (ENB)	★★★★★	$62	$39.75	Medium	Wide	0.64	67.75	Gemino
Enterprise Products Partners (EPD)	★★★★	$31	$26.66	Low	Wide	0.86	57.61	Ellis
Royal Dutch Shell (RDS.B)	★★★★	$78	$72.23	Low	None	0.93	301.29	Good
Total (TOT)	★★★★	$74	$62.36	Medium	None	0.84	162.24	Good
Financial Services								
American International Group (AIG)	★★★★	$76	$51.94	Medium	None	0.68	46.63	Horn
Capital One Financial (COF)	★★★★	$126	$87.92	Medium	Narrow	0.70	42.77	Plunkett
Credit Suisse Group (CSGN)	★★★★	CHF 22	CHF 16.4	High	Narrow	0.75	41.66	Scholtz
Invesco (IVZ)	★★★★	$40	$27.96	Medium	Narrow	0.70	11.48	Warren
Mitsubishi UFJ Financial Group (8306)	★★★★	JPY 880	JPY 710.2	Medium	None	0.81	9348.25	Wu
QBE Insurance Group (QBE)	★★★★	AUD 13	AUD 10.24	High	Narrow	0.79	13.90	Ellis
Healthcare								
Allergan (AGN)	★★★★★	$263	$147.6	Medium	Wide	0.56	50.05	Waterhouse
McKesson (MCK)	★★★★	$210	$146.59	Medium	Wide	0.70	30.25	Lekraj

Source: Morningstar. As of May 4, 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 (cont.)								
Medtronic (MDT)	★★★★	$105	$79.58	Medium	Wide	0.76	107.86	Wang
Ramsay Health Care (RHC)	★★★★	AUD 82	AUD 64.96	Medium	Narrow	0.79	13.13	Kallos
Roche Holding (ROG)	★★★★★	CHF 325	CHF 225.8	Low	Wide	0.69	193.57	Andersen
Shire (SHP)	★★★★	GBX 4890	GBX 3843	Medium	Narrow	0.79	35.11	Andersen
Industrials								
Anixter International (AXE)	★★★★★	$107	$56.75	Medium	Narrow	0.53	1.90	Bernard
Beijing Enterprises Holdings (392)	★★★★★	HKD 58	HKD 38.6	Medium	Narrow	0.67	48.72	Song
Brambles (BXB)	★★★★	AUD 11.2	AUD 9.8	Medium	Wide	0.88	15.59	Fleck
CK Hutchison Holdings (1)	★★★★	HKD 124	HKD 91.25	Medium	None	0.74	352.01	Tan
Fluor (FLR)	★★★	$69	$58.99	High	Narrow	0.85	8.29	Silver
G4S (GFS)	★★★★	GBX 337	GBX 258.6	Medium	None	0.77	4.01	Field
GEA Group (G1A)	★★★★	EUR 47	EUR 33.1	Medium	Wide	0.70	6.37	Molina
Grupo Aeroportuario del Pacifico (GAP B)	★★★	MXN 225	MXN 190.22	High	Wide	0.85	106.71	Higgins
Guangshen Railway (525)	★★★★	HKD 6.8	HKD 4.56	High	None	0.67	38.12	Song
Johnson Controls International (JCI)	★★★★	$53	$35.39	High	Narrow	0.67	32.78	Bernard
KION GROUP (KGX)	★★★★	EUR 86	EUR 70.58	Medium	Narrow	0.82	8.32	Molina
Royal Philips (PHIA)	★★★★	EUR 42	EUR 35.83	Medium	Narrow	0.85	32.78	Vonk
Sodexo (SW)	★★★★	EUR 110	EUR 82.36	Medium	Narrow	0.75	12.24	Field
Stericycle (SRCL)	★★★★	$86	$59.08	High	Narrow	0.69	5.06	Young
Real Estate								
AVEO Group (AOG)	★★★★	AUD 3.1	AUD 2.64	Medium	None	0.85	1.53	Sherlock
Sun Hung Kai Properties (16)	★★★★	HKD 153	HKD 123	Medium	Narrow	0.80	356.33	Zhong
Vornado Realty Trust (VNO)	★★★★	$84	$69.39	Medium	None	0.83	13.20	Schwer
Technology								
Guidewire Software (GWRE)	★★★★	$100	$87.04	Medium	Wide	0.87	6.96	Nelson
Intel (INTC)	★★★★	$62	$52.28	Medium	Wide	0.84	243.62	Davuluri
KLA-Tencor (KLAC)	★★★★	$125	$102.99	High	Wide	0.82	16.05	Davuluri
Microchip Technology (MCHP)	★★★★	$112	$86.11	Medium	Wide	NA	20.18	Colello
Microsoft (MSFT)	★★★★	$117	$94.07	Medium	Wide	0.80	722.76	Nelson
MYOB Group (MYO)	★★★★	AUD 4.05	AUD 3.27	Medium	Narrow	0.81	1.96	James
Qualcomm (QCOM)	★★★★	$75	$50.31	High	Narrow	0.67	74.59	Davuluri
Sabre (SABR)	★★★★	$27	$23.31	Medium	Narrow	0.86	6.43	Wasiolek
Salesforce.com (CRM)	★★★★	$145	$124.41	Medium	Wide	0.86	91.24	Nelson
Synaptics (SYNA)	★★★★	$64	$43.94	Very High	None	0.69	1.52	Davuluri
TDK (6762)	★★★★	JPY 11500	JPY 9650	High	None	0.84	1217.83	Ito
Tencent Holdings (700)	★★★★	HKD 641	HKD 382.8	High	Wide	0.60	3637.82	Tam
Utilities								
Contact Energy (CEN)	★★★★	NZD 6.2	NZD 5.47	Medium	Narrow	0.88	3.92	Atkins
Dominion Energy (D)	★★★★★	$84	$65.53	Low	Wide	0.78	42.76	Fishman
FirstEnergy (FE)	★★★★	$40	$33.88	Low	Narrow	0.85	16.16	Fishman
Gas Natural SDG (GAS)	★★★	EUR 23.5	EUR 21.15	Medium	Narrow	0.90	21.15	Fulop
SCANA (SCG)	★★★★★	$57	$36.15	Medium	Narrow	0.63	5.16	Miller

Source: Morningstar. As of May 4, 2018

Highlighted Stocks

McDonald's MCD

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Consumer	Negative	USD	190	165.03	Medium	Wide	0.87	129.7

Source: Morningstar. As of May 4, 2018

McDonald's remains in a favorable position because of its menu, restaurant experience, and technology pipeline.

Analyst Note, April 30, 2018

Two items stuck out to us on McDonald's first-quarter update, both of which we view as positives for longer-term investors. First, McDonald's continues to navigate a challenging U.S. fast-food environment better than its peers. There are still areas for improvement—traffic was negative in the U.S. amid heavy morning daypart competition—but increased delivery availability (called out as a "meaningful contributor" to comps in most major markets), greater awareness for mobile order and pay (which is in early stages, but driving demand for curbside pickup), the fresh beef launch in the U.S. in May, ongoing benefit from menu price increases of 2%-3% (to offset value initiatives), and increase in the number of items per transaction due to its $1-$2-$3 menu should keep U.S. comps at 3%-4% for the rest of 2018.

Second, and more important, we believe international lead segment comps (up 7.8%)—markets where Experience of the Future initiatives have been in place for multiple years—hints at U.S. comp acceleration. With expectations to convert 4,000 U.S. locations to EOTF per quarter this year and next, we expect to see tangible traffic and ticket benefits heading into next year, with 2018 comps moving from the low 3% range this year to 4%-5% in 2019-20.

There is no change to our $190 fair value estimate, and we view shares as undervalued, while offering an attractive dividend yield (2.5%). While valuation multiples have contracted across the industry as refranchising activity has wound down and transaction growth has remained elusive, McDonald's remains in a favorable position because of its menu, restaurant experience, and technology pipeline, which should also be additive to the brand intangible asset behind our wide moat rating. While some of these investments will weigh on near-term margins, we still see a clear path to mid-40s operating margins by 2019-20 through refranchising and operating leverage from new sales drivers.

R.J. Hottovy, CFA | rj.hottovy@morningstar.com

Pfizer PFE

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Healthcare	Stable	USD	43.50	34.84	Low	Wide	0.80	207.2

Source: Morningstar. As of May 4, 2018

We expect new pipeline drugs and recently launched drugs to offset generic headwinds, leading to total overall sales growth of 3% annually over the next three years.

Analyst Note, May 1, 2018
Pfizer reported first-quarter results slightly below both our and consensus top-line expectations, but we don’t expect any major changes to our $43.50 fair value estimate. We continue to view the stock as undervalued, partly due to an underappreciation for Pfizer’s overall growth potential and growing strength in oncology led by Ibrance. We continue to view the company with a wide moat, supported by one of the widest portfolios of patent-protected drugs in Big Pharma.

In the quarter, total sales fell operationally by 2% as order timing, generic competition, and manufacturing issues on older injectable drugs weighed on growth, but we expect growth will accelerate in subsequent quarters. Destocking hurt cancer drug Ibrance and immunology drug Xeljanz, but we expect these trends to reverse later in the year. Further, despite emerging competition for these fast-growing drugs, Pfizer’s first-mover advantage combined with relatively well-positioned efficacy and side effect profiles should result in continued growth for these drugs. We expect Ibrance to generate peak sales of over $9 billion based on expanding indications to include adjuvant use. Additionally, U.S. order timing for Prevnar 13 led to a sales decline in the quarter, but we expect continued strength internationally in the older patient population and a stabilization in U.S. ordering to return the vaccine to growth in 2019. Also, Pfizer’s next-generation vaccine, covering 20 valents, should move into phase 3 development by 2019, which should provide protection against Merck’s late-stage competitive vaccine that is targeting 15 valents.

On patent losses, Pfizer continues to work through generic competition, which we expect will lead to close to $7 billion in lost sales over the next five years. In the quarter, generic pressures on neuroscience drug Lyrica, immunology drug Enbrel, and erectile dysfunction drug Viagra weighed on results and will likely continue to create a drag in 2018.

However, we expect new pipeline drugs and recently launched drugs to offset generic headwinds, leading to total overall sales growth of 3% annually over the next three years, with the bottom line growing faster due to minor operating margin expansion, a lower tax rate, and share repurchases.

Damien Conover, CFA | damien.conover@morningstar.com

Under Armour UA

Morningstar Rating	Industry	Moat Trend	Currency	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price/Fair Value	Market Cap (Bil)
★★★★	Consumer	Stable	USD	20.50	15.73	High	Narrow	0.77	7.0

Source: Morningstar. As of May 4, 2018

We think product innovation and technology improvements in its footwear lineup should enable its fare to resonate with consumers.

Analyst Note, May 1, 2018

Narrow-moat Under Armour's first-quarter results were similar to the previous few quarters, as weak North American sales were offset by growth in its international and direct-to-consumer, or DTC, segments. Despite the pressures on its home turf, we remain positive on the firm's long-term sales trajectory, given our belief that Under Armour is poised to continue growing abroad. Further, we think opportunities to expand its DTC reach and its presence in footwear should stem recent wholesale weakness. The firm's results are tracking toward our full-year expectations, and as such, we plan to maintain our $20.50 fair value estimate. However, following a mid-single-digit decline, we think investors would be wise to build a stake in this competitively advantaged name.

Under Armour grew its top line a healthy 6% (on top of the 7% posted last year and against our 4% full-year estimate), despite results being constrained by the mere 1% bump in North America. International remains a bright spot, growing 27% in the quarter (19% currency-neutral) to 24% of sales. This segment was supported by growth in all geographic regions, which suggests the brand remains strong globally, and we aren't wavering on our 30% segment growth forecast for this year to 28% of sales.

The firm's top line was also bolstered by DTC, up 17% to 30% of sales. We think DTC remains vital to alleviating the pressures resulting from the challenging North American wholesale market (and ensuring that it maintains more control over the consumer relationship). Further, we think product innovation and technology improvements in its footwear lineup should enable its fare to resonate with consumers. Supporting our stance, this quarter its newest footwear product sold out and stifled its growth as demand outpaced supply. Thus, despite segment sales ticking up only 0.8% in the quarter to 23% of sales, we remain comfortable with our 9% average long-term growth (compared to its 36% five-year average).

Our confidence in its ability to win in these segments is supported by the outsize investments Under Armour is making to enhance its competitive position over the past two years (we estimate an incremental $200 million in fiscal 2017 on top of the $150 million in fiscal 2016, or 4% and 3% of sales, respectively). Despite the near-term hit to operating margins (which amounted to the low-single-digits this quarter, up 70 basis points over a year ago), we believe this spending stands to reinforce the brand intangible assets that support our narrow moat rating.

John Brick, CFA | john.brick@morningstar.com

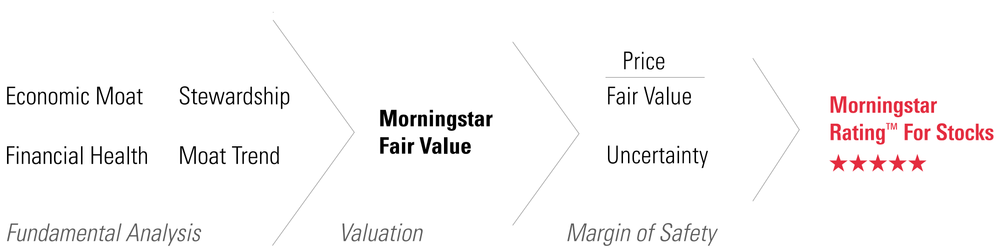
Research Methodology for Valuing Companies

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.

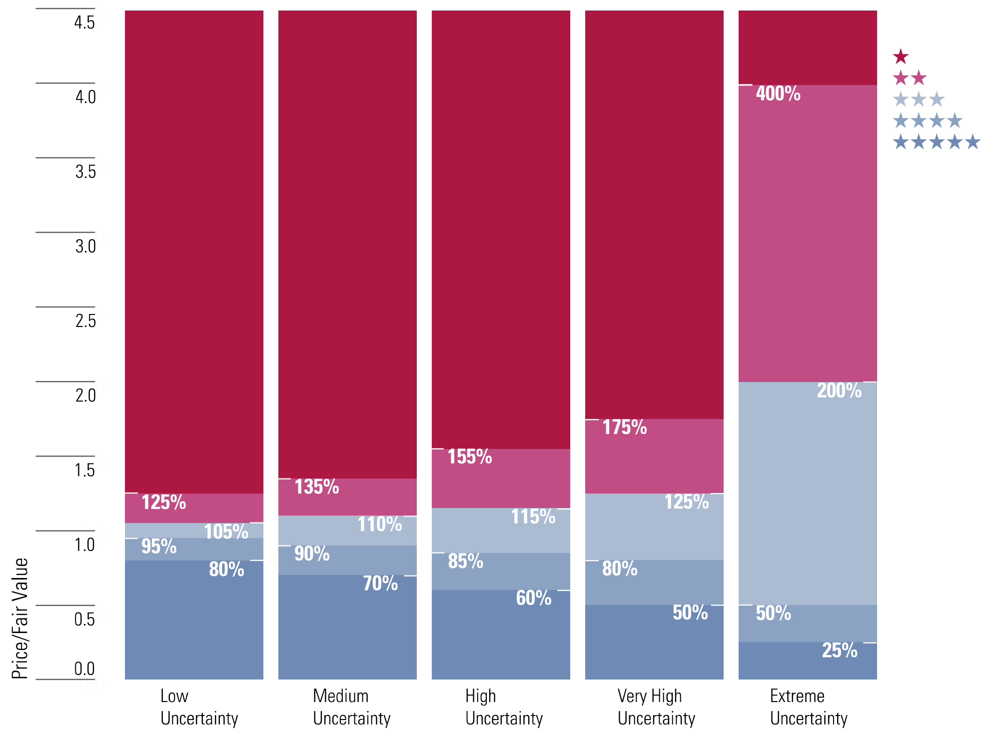
Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case and a 25% probability that the company will perform worse than 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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+1 312 696-6869
equitysupport@morningstar.com

MORNINGSTAR®

22 West Washington Street
Chicago, IL 60602 USA