A Wide-Moat Focus Outperforms the Market Over Time

Seeking competitive advantages and attractive valuations pays off.

Morningstar Equity Research
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The Morningstar Wide Moat Focus Index, a portfolio of our cheapest wide-moat stocks relative to fair value, has generated significant excess returns versus the overall market.
Over the trailing one-, three-, five-, and 10-year periods, and since company moat ratings were first assigned in late 2002, the Morningstar Wide Moat Focus Index has outperformed its benchmark. The strategy has also outperformed most large-cap and mid-cap mutual funds.

The Wide Moat Focus Index has outperformed through a variety of market conditions.
The index has generated alpha through volatile market conditions over the past decade thanks to its disciplined and repeatable strategy. Periods of underperformance have typically preceded periods of significant outperformance as the portfolio waits for out-of-favor companies with durable competitive advantages to revert toward fair value.

Identifying companies with sustainable competitive advantages is only step one.
A passive portfolio of all stocks that have received Morningstar's wide moat rating has underperformed the market since its 2002 inception. This reflects the premium valuation often placed on quality and the lower risk associated with these firms. The Wide Moat Focus Index adds substantial value by identifying the most undervalued wide-moat stocks through our disciplined, bottom-up approach to valuation.

Excess returns have been driven, almost exclusively, by stock selection.
Performance attribution shows that security selection has driven more than 98% of excess returns for the Wide Moat Focus Index, with the balance explained by style and sector tilts. Our moat methodology and bottom-up approach to valuation have proved to be a powerful combination, allowing for impressive stock selection results through market cycles.

Wide Moat Focus Index: Performance, Trailing Annualized Total Return (%)

	Trailing 1-Year	Trailing 3-Year	Trailing 5-Year	Trailing 10-Year	Inception 10/01/02
Morningstar Wide Moat Focus Index	22.4	8.7	16.0	11.0	14.6
Morningstar US Market Index	12.4	8.5	14.6	7.2	10.1
Out/Underperformance vs. S&P 500	10.0	0.2	1.4	3.8	4.5

Source: Morningstar Direct,
Data through Dec. 31, 2016

The Wide Moat Focus Index: Outstanding Performance Since Inception

In 2007, Morningstar created the Wide Moat Focus Index based on the most undervalued wide-moat stocks in our coverage. To construct the index, we start with all U.S.-based and U.S.-traded companies to which we assign a wide moat rating (excluding master limited partnerships). We then select the cheapest stocks, as measured by the relationship of market price to Morningstar's estimate of fair value. The index consists of two subportfolios, each holding 40 stocks.

Our successful track record demonstrates the benefit of investing in stocks of undervalued, high-quality businesses. From 2007 to the present, results are based on the index's actual performance. Before 2007, Morningstar compiled hypothetical results going back to late 2002, when moat ratings were first assigned. Including these results, the Wide Moat Focus Index has outperformed its Morningstar US Market Index benchmark by 4.5 percentage points annually.

Exhibit 1 Wide Moat Focus Index: Performance, Trailing Annualized Total Return (%)

	Trailing 1-Year	Trailing 3-Year	Trailing 5-Year	Trailing 10-Year	Inception 10/01/02
Morningstar Wide Moat Focus Index	22.4	8.7	16.0	11.0	14.6
Morningstar US Market Index	12.4	8.5	14.6	7.2	10.1
Out/Underperformance vs. S&P 500	10.0	0.2	1.4	3.8	4.5

Source: Morningstar Direct
Data through Dec. 31, 2016

The Wide Moat Focus Index has performed well over more than a decade, a period encompassing a variety of market conditions, including boom-bust cycles in the commodity and housing markets. Since 2002, periods of underperformance have typically been followed by periods of substantial outperformance. This speaks to the fact that our process helps us identify situations where valuation has become dislocated from intrinsic value, allowing us to capitalize on mispricing. The Wide Moat Focus Index's strong performance through several major market fluctuations highlights its disciplined and repeatable strategy.

Exhibit 2 Wide Moat Focus Index: Performance, Annual Total Returns (%)

	2002*	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Morningstar Wide Moat Focus Index	15.0	36.2	27.8	4.7	17.7	-1.3	-19.6	46.9	8.6	6.6	24.5	31.5	9.7	-4.3	22.4
Morningstar US Market Index	8.0	30.7	12.4	6.5	15.7	5.9	-37.0	28.4	16.8	1.6	16.3	33.1	12.9	0.7	12.4
Out/Underperformance vs. Benchmark	7.0	5.5	15.5	-1.8	2.0	-7.2	17.5	18.5	-8.2	5.0	8.2	-1.7	-3.2	-5.0	10.0

Source: Morningstar Direct
All data Oct. 1, 2002-Dec. 31, 2016
*2002 data reflects Oct. 1 through year-end

On the other hand, the Morningstar Wide Moat Index, which is a passive portfolio of all U.S. stocks with a wide moat rating regardless of valuation, has trailed the Morningstar US Market Index more often than not on an annual basis. Since inception, it has earned an average annual return of 8.7% versus

10.1% for the benchmark. The Wide Moat Index has produced less volatility over this period, but the difference isn't significant enough to compensate for lower returns. Sharpe and Sortino ratios for the Wide Moat Index are roughly in line with those of the Morningstar US Market Index. The Wide Moat Index provides an apples-to-apples comparison to the Wide Moat Focus Index, as all Wide Moat Focus Index holdings would be included in the Wide Moat Index.

Exhibit 3 Wide Moat Index: Performance, Annual Total Returns (%)

	2002*	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Morningstar Wide Moat Index	8.4	24.3	5.6	0.3	13.9	2.8	-28.2	18.3	8.9	9.6	14.3	31.8	13.2	4.3	8.7
Morningstar US Market Index	8.0	30.7	12.4	6.5	15.7	5.9	-37.0	28.4	16.8	1.6	16.3	33.1	12.9	0.7	12.4
Out/Underperformance vs. Benchmark	0.3	-6.4	-6.8	-6.2	-1.8	-3.1	8.9	-10.1	-7.9	8.1	-2.0	-1.4	0.4	3.6	-3.7

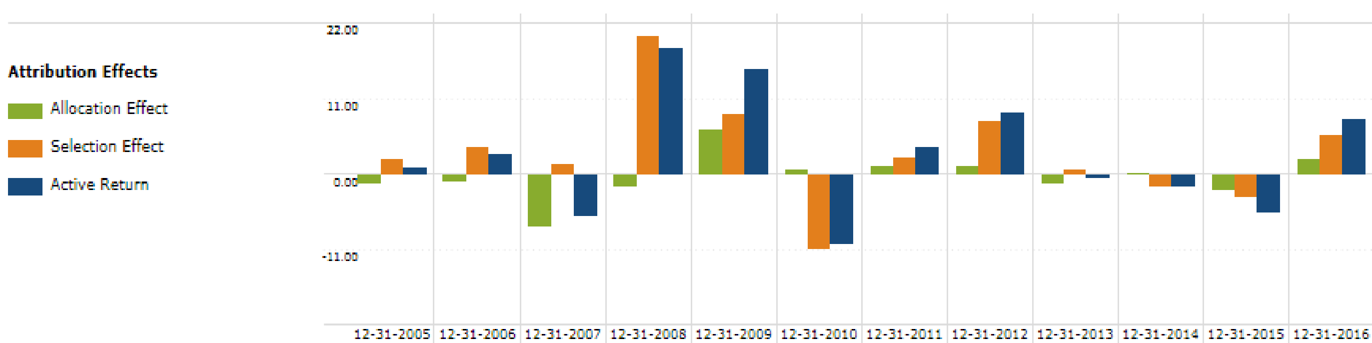
Source: Morningstar Direct
All data Oct. 1, 2002-Dec. 31, 2016
*2002 data reflects Oct. 1 through year-end

The significant difference between their relative long-term performance points to a core principle at Morningstar: Valuation is critical. Wide-moat stocks are often in favor when tumultuous market periods drive capital toward stalwart high-quality stocks. Patiently buying quality firms at attractive prices is key to long-term investing success.

Attribution Analysis of the Wide Moat Focus Index: Security Selection Drives Alpha

Attribution analysis highlights stock selection as the key driver of performance for the Wide Moat Focus Index. As shown in Exhibit 4, the allocation effect has accounted for a very small part of the total active performance in most periods. The selection effect has been dominant, accounting for more than 98% of excess returns. In other words, rather than relying on sector allocation to drive alpha, the strategy has done an excellent job of including the right stocks within each sector.

Exhibit 4 Attribution Analysis: Wide Moat Focus Index Relative to the Morningstar US Market Index

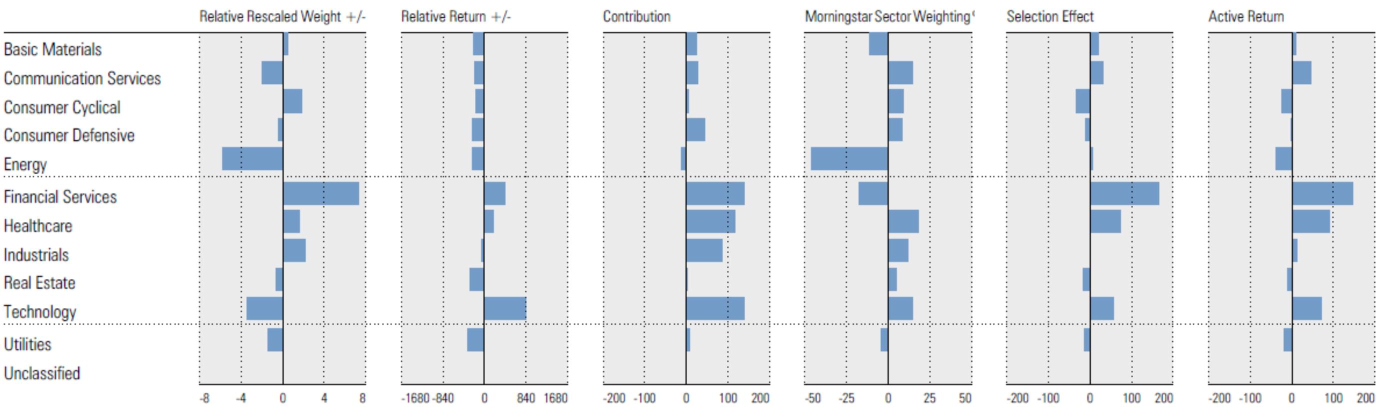


Source: Morningstar Direct
All data Jan. 1, 2005-Dec. 31, 2016
Benchmark: Morningstar US Market Index

The detailed sector analysis in Exhibit 5 demonstrates that the Wide Moat Focus Index has historically favored the financials sector and avoided the energy sector relative to the Morningstar US Market Index.

Simply put, sector tilt is a byproduct of our economic moat analysis and stock-picking, both bottom-up processes, and does not rely on a top-down overlay.

Exhibit 5 Wide Moat Focus Index: Sector Weightings and Impact on Relative Performance Since 2002



Source: Morningstar Direct
All data Oct. 1, 2002-Dec. 31, 2016
Benchmark: Morningstar US Market Index

The Morningstar Sector Weighting category above reflects the allocation effect by sector. Both the historical underweight in energy and overweight in financial services have driven a negative allocation effect. For the energy sector, a positive selection effect has served as a very slight offset. For the financials sector, however, a negative allocation effect has been far outweighed by a highly positive selection effect.

Exhibit 6 Wide Moat Focus Index: Cumulative Attribution by Sector Since Inception

	Weights %		Return %		Contribution %		Attribution %		
	Portfolio	Benchmark	Portfolio	Benchmark	Portfolio	Benchmark	Allocation Effect %	Selection Effect %	Return %
Basic Materials	3.9	3.4	108.5	321.4	23.1	9.0	-11.3	19.7	8.4
Communication Services	1.9	3.9	208.7	413.3	25.9	13.4	14.9	29.9	44.8
Consumer Cyclical	12.2	10.3	174.5	344.4	3.9	35.8	9.2	-34.0	-24.8
Consumer Defensive	9.4	9.8	49.9	300.2	45.3	28.8	8.1	-9.9	-1.8
Energy	3.7	9.4	94.2	350.5	-11.7	22.0	-45.8	7.2	-38.6
Financial Services	23.2	15.8	530.9	114.3	138.9	34.2	-17.8	164.6	146.8
Healthcare	15.0	13.4	464.1	296.1	116.1	40.3	17.9	73.6	91.5
Industrials	13.7	11.5	259.1	321.6	85.8	35.5	11.9	0.7	12.6
Real Estate	2.0	2.6	9.5	312.4	1.3	8.3	5.1	-15.9	-10.7
Technology	12.9	16.4	1,263.7	423.9	137.8	56.7	14.8	55.1	69.9
Utilities	2.1	3.5	10.7	349.3	7.7	10.4	-3.9	-14.3	-18.2
Attribution Total	**100.0**	**100.0**	**574.2***	**294.5***	**574.2**	**294.5**	**3.0**	**276.8**	**279.8**

*Reported returns for the Portfolio and Benchmark (including residuals) were 600.3% and 293.1%

Source: Morningstar Direct
All data Oct. 1, 2002-Dec. 31, 2016
Benchmark: Morningstar US Market Index

Wide Moat Focus Index: 2016 Performance

The Wide Moat Focus Index outperformed the Morningstar US Market Index benchmark by 10 percentage points in 2016, and more than 70% of this outperformance was driven by security selection.

Exhibit 7 Wide Moat Focus Index: Attribution by Sector, 2016 Total Return %

	Weights %		Return %		Contribution %		Attribution %		
	Portfolio	**Benchmark**	**Portfolio**	**Benchmark**	**Portfolio**	**Benchmark**	**Allocation Effect %**	**Selection Effect %**	**Return %**
Basic Materials	4.9	3.1	11.7	19.8	0.7	0.6	0.1	-0.3	-0.2
Communication Services	0.0	3.9	0.0	24.1	0.0	0.8	-0.4	0.0	-0.4
Consumer Cyclical	19.0	12.1	19.5	5.3	5.0	0.7	0.1	3.5	3.6
Consumer Defensive	1.4	9.3	12.6	7.1	0.7	0.6	0.8	0.4	1.2
Energy	1.4	6.5	29.7	27.2	1.5	1.7	-0.8	1.5	0.7
Financial Services	20.9	14.7	20.3	20.1	4.6	3.1	1.2	-0.8	0.4
Healthcare	23.7	14.4	-6.3	-3.2	0.5	-0.5	0.1	-0.5	-0.3
Industrials	15.5	10.9	23.6	19.7	4.0	2.1	0.8	0.8	1.6
Real Estate	4.7	4.0	-1.9	8.0	-0.8	0.3	0.1	-1.4	-1.4
Technology	8.4	17.9	77.5	13.9	4.1	2.5	0.4	2.5	2.9
Utilities	0.0	3.4	0.0	16.7	0.0	0.5	-0.2	0.0	-0.2
Attribution Total	**100.0**	**100.0**	**20.3***	**12.4***	**20.3**	**12.4**	**2.2**	**5.7**	**7.9**

*Reported 2016 returns for the Portfolio and Benchmark (including residuals) were 22.4% and 12.4%

Source: Morningstar Direct
Benchmark: Morningstar US Market Index

The strong security selection effect in the overweighted consumer cyclical sector offset the negative allocation effect of not holding any communication services or utilities stocks by more than fivefold. Healthcare had the highest sector weighting in 2016, making up nearly a quarter of the index. Although healthcare stock selection provided a modest headwind to overall performance in 2016, the depressed valuations of our healthcare holdings have led us to increase our allocation to healthcare stocks in early 2017, patiently waiting for our investment theses to play out.

Exhibit 8 reflects the contribution of specific stocks to the index's active return. While being overweight Jones Lang LaSalle, Stericycle, and Allergan negatively affected performance, being overweight St. Jude Medical, Spectra Energy, and Harley-Davidson boosted performance. On the other side of the coin, being underweight Johnson & Johnson, UnitedHealth Group, and Pfizer weighed on our active return, while being underweight CVS Health, General Electric, and Bristol-Myers Squibb contributed to outperformance.

Exhibit 8 Wide Moat Focus Index: 2016 Relative Weight % and Relative Return %

	Best Selections	Morningstar Sector	Weight +/-	Return +/-	Effect
1	St Jude Medical Inc	Healthcare	1.33	32.31	1.77
2	Spectra Energy Corp	Energy	1.40	53.00	1.44
3	Harley-Davidson Inc	Consumer Cyclical	2.53	27.09	1.33
4	Time Warner Inc	Consumer Cyclical	2.15	47.11	1.14
5	The Western Union Co	Financial Services	2.11	5.19	0.68
6	Norfolk Southern Corp	Industrials	2.50	11.77	0.53
7	International Business Machines Corp	Technology	0.93	11.27	0.50
8	Varian Medical Systems Inc	Healthcare	3.73	14.28	0.50
9	Berkshire Hathaway Inc B	Financial Services	0.77	3.36	0.49
10	Emerson Electric Co	Industrials	2.32	1.33	0.43
11	CSX Corp	Industrials	3.65	22.40	0.42
12	Wal-Mart Stores Inc	Consumer Defensive	1.31	8.95	0.40
13	CVS Health Corp	Healthcare	-0.78	-14.67	0.28
14	General Electric Co	Industrials	-1.88	-15.09	0.27
15	Bristol-Myers Squibb Company	Healthcare	-0.52	-10.33	0.22

	Worst Selections	Morningstar Sector	Weight +/-	Return +/-	Effect
1	Jones Lang LaSalle Inc	Real Estate	2.27	-44.41	-1.11
2	Stericycle Inc	Industrials	1.05	-55.80	-1.05
3	Allergan PLC	Healthcare	1.37	-29.63	-0.76
4	Gilead Sciences Inc	Healthcare	1.46	-24.45	-0.73
5	Salesforce.com Inc	Technology	1.08	-26.60	-0.71
6	Biogen Inc	Healthcare	3.38	-4.27	-0.63
7	Mastercard Inc A	Financial Services	1.92	-13.16	-0.60
8	Cerner Corp	Technology	0.95	-35.19	-0.59
9	Visa Inc Class A	Financial Services	1.51	-18.70	-0.53
10	Johnson & Johnson	Healthcare	-2.39	18.49	-0.43
11	American Express Co	Financial Services	1.99	-11.50	-0.42
12	UnitedHealth Group Inc	Healthcare	-0.98	41.57	-0.34
13	CBRE Group Inc	Real Estate	2.38	-16.95	-0.30
14	Pfizer Inc	Healthcare	-1.53	7.63	-0.30
15	JPMorgan Chase & Co	Financial Services	-1.58	14.50	-0.28

Source: Morningstar Direct
All data Jan. 1-Dec. 31, 2016
Benchmark: Morningstar US Market Index

Attractive Risk-Return Characteristics of the Wide Moat Focus Index

The Wide Moat Focus Index has provided more attractive risk-return characteristics than its benchmark, the Morningstar US Market Index, generating average annual returns of 14.6% since inception compared with 10.1% for the benchmark.

Wide Moat Focus investors have faced increased volatility relative to the benchmark, but the higher risk profile has been well-compensated, as demonstrated by the significantly higher Sharpe and Sortino ratios. The Wide Moat Focus Index has registered an impressive information ratio of 0.52 since its October 2002 inception. A recent study that considers the performance of 230 actively managed U.S. Large Cap equity funds over 10 years would place the Wide Moat Focus Index just outside the fifth percentile, which was defined at an information ratio of 0.54.[1] Grinold and Kahn, who have published multiple studies evaluating active portfolio management, determined that top-quartile active equity fund

1 Zephyr Associates, Inc. (2013). Zephyr StatFACTS: Information Ratio.

managers generally have information ratios of 0.50 or higher.[2] In a different study, Goodwin asserted that, over a 10-year period, very few long-only active managers have sustained an information ratio of 0.50 or higher.[3] Upside and downside capture ratios also paint an attractive picture of relative performance during volatile markets. The Wide Moat Focus Index has risen 14% more when the benchmark was generally rising, yet it has fallen about 5% less when the benchmark is falling.

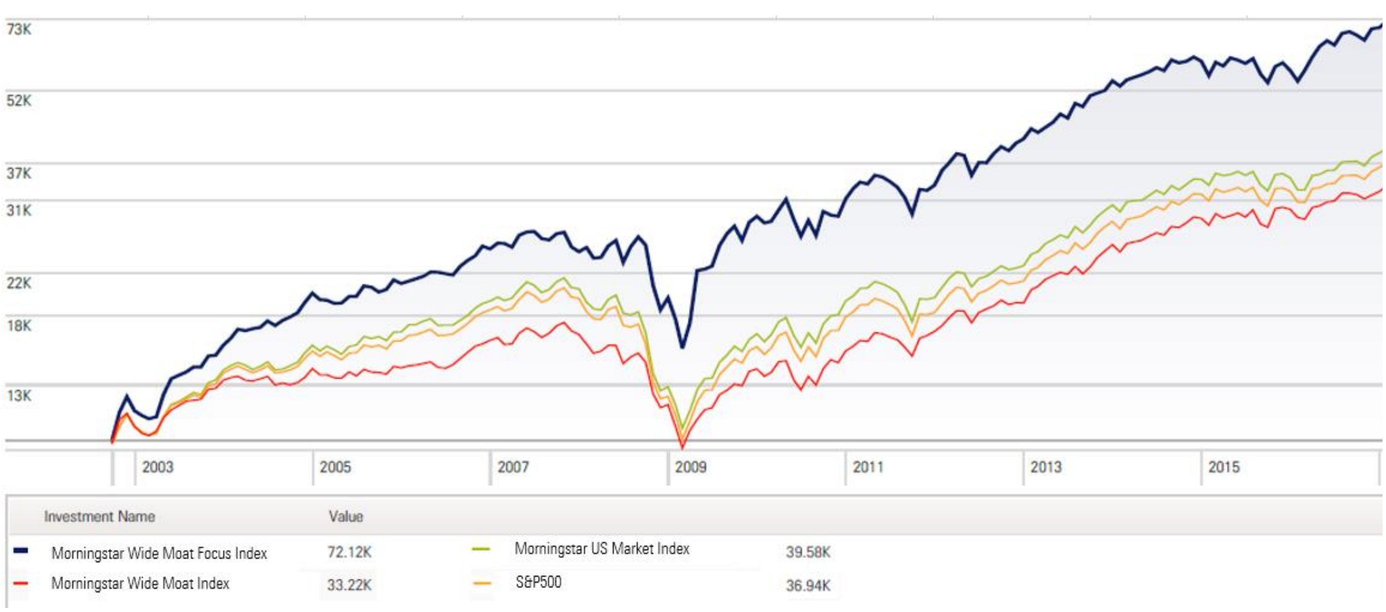
Exhibit 9 Wide Moat Focus Index: Risk and Return Metrics

Name	Return Ann.%	Std Dev (%)	Beta	Sharpe Ratio	Inf. Ratio (Arith)	Sortino Ratio	Upside Capture	Downside Capture	Max Ddwn (%)	Best Qtr (%)	Worst Qtr (%)
Morningstar Wide Moat Focus Index	14.6	18.1	1.12	0.78	0.52	1.33	113.9	94.9	-42.4	30.8	-22.0
Morningstar Wide Moat Index	8.7	12.7	0.84	0.62	-0.30	0.94	83.6	82.1	-44.7	12.7	-18.1
Morningstar US Market Index	10.1	14.2	1.00	0.66	n/a	0.98	100.0	100.0	-50.8	16.6	-22.5

Source: Morningstar Direct
All data Oct. 1, 2002-Dec. 31, 2016
Benchmark: Morningstar US Market Index

Exhibit 10 reflects the strong performance of the Wide Moat Focus Index over time, comparing its total return to those of the Wide Moat Index, the Morningstar US Market Index, and the S&P 500. A $10,000 investment in the Wide Moat Focus Index in October 2002 would have grown more than sevenfold by the end of 2016. The same investment in the S&P 500 or Morningstar US Market Index would have grown to just $30,000.

Exhibit 10 Growth Index From $10K Base



Source: Morningstar Direct
All data Oct. 1, 2002-Dec. 31, 2016
Official Benchmark: Morningstar US Market Index

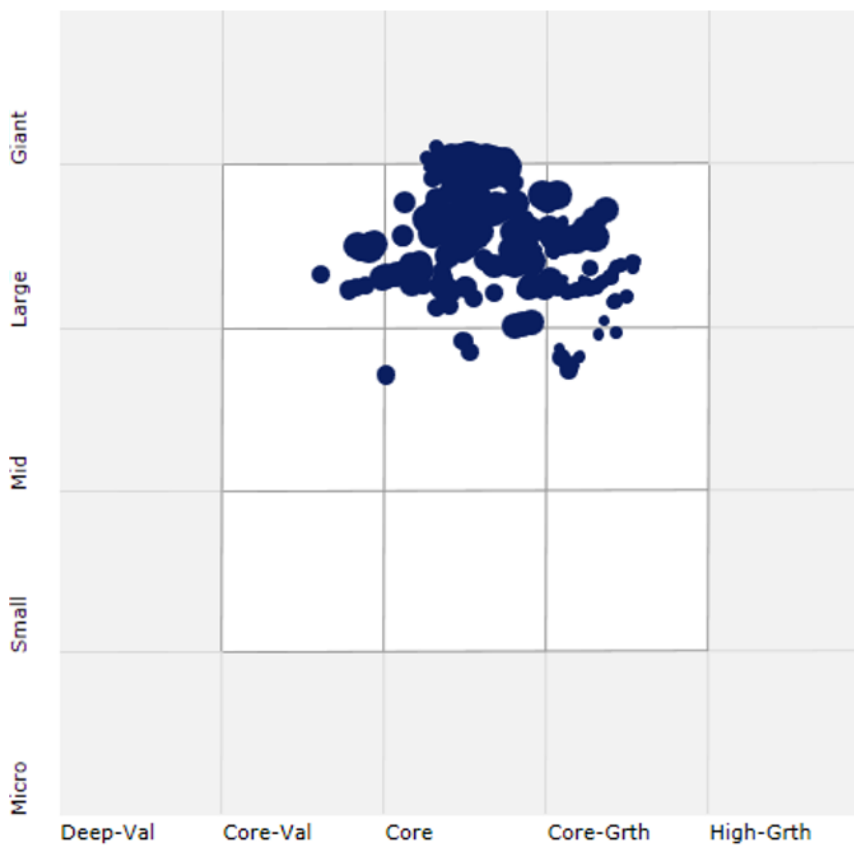
2 Grinold, Richard C., and Ronald N. Kahn (2000). Active Portfolio Management.

3 Goodwin, Thomas H. (2009). The Information Ratio.

The Wide Moat Focus Index Isn't Necessarily Value or Growth

In Exhibit 11, we plot the index with each one of its quarterly portfolios relative to the Morningstar Style Box (larger circles represent more recent portfolio positions). The Wide Moat Focus Index has generally skewed toward large-cap stocks over the past decade, as our wide-moat stocks tend to have larger market caps. However, no significant style bias toward either value or growth is observed. More than 90% of the time, the index has operated in the core section.

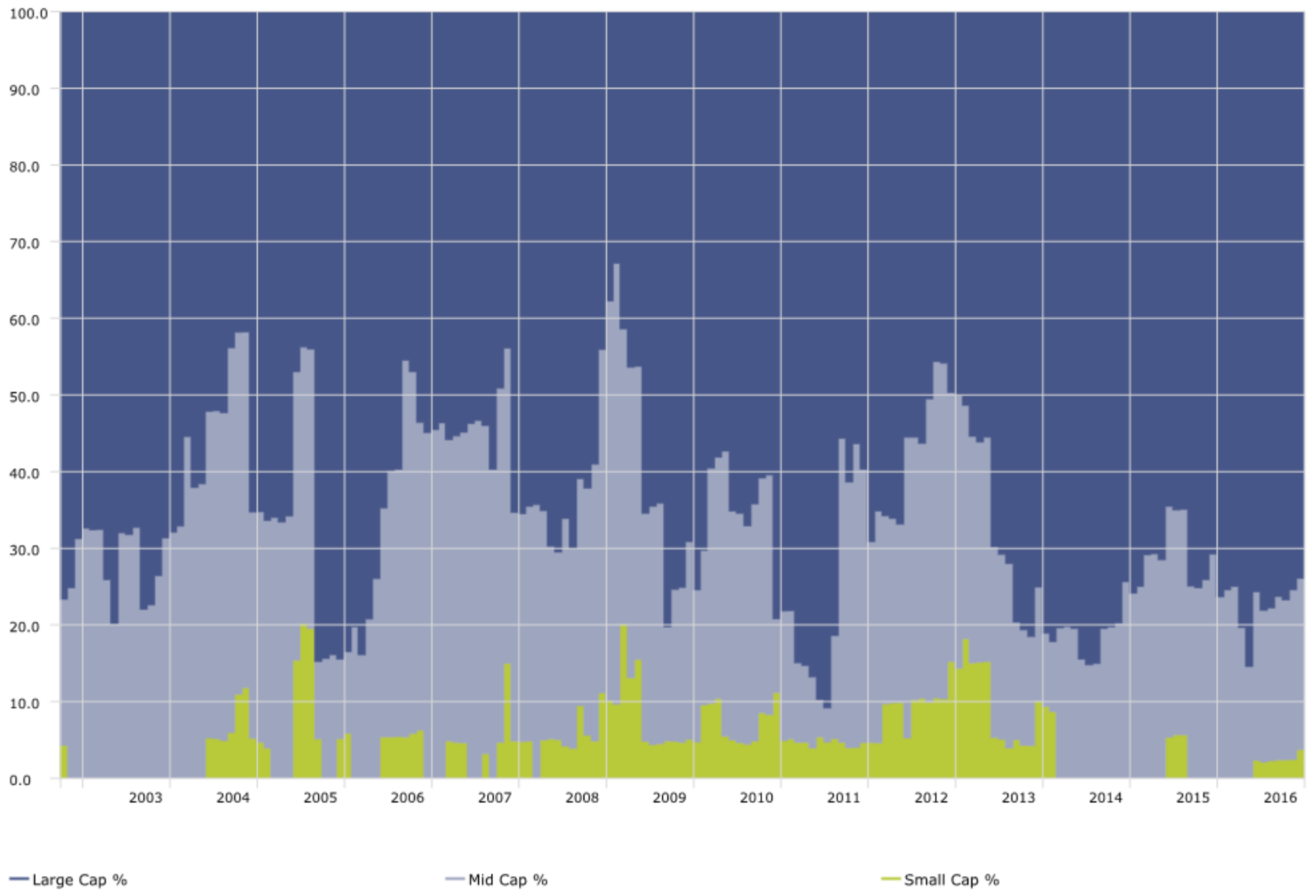
Exhibit 11 Wide Moat Focus Index: Size and Style, Since Inception



Source: Morningstar Direct
All data Oct. 1, 2002-Dec. 31, 2016

Over the past decade, large-cap stocks have typically accounted for most of the index holdings. In Exhibit 12 the index is broken out by market capitalization. Besides early 2009, large-cap wide-moat stocks constituted the index's main holdings. This is consistent with our coverage universe, as large-cap stocks account for roughly two thirds of the wide-moat stocks we cover.

Exhibit 12 Wide Moat Focus Index: Percentage of Holdings in Large/Mid-/Small Cap



Source: Morningstar Direct
All data Oct. 1, 2002-Dec. 31, 2016

The high concentration of large-cap stocks with wide moat ratings is attributable to a couple of key factors. First, two economic moat sources that we've identified—cost advantage and network effects—often benefit from companies with a large operational scale. Intangible assets, such as brands or patents, and high customer switching costs also tend to disproportionately accrue to larger firms. Second, companies with economic moats tend to outlast and earn more compelling returns than competitors, leading to a survivorship bias across our coverage. For a more detailed look at our moat sources, please see the Morningstar Economic Moat Methodology section in Appendix C.

Wide Moat Focus Index: Historically Overweight Growth, Large-Cap, and Mid-Cap Stocks
The Wide Moat Focus Index has exhibited a slightly higher exposure to growth stocks than the Morningstar US Market Index. Over the past decade, the Wide Moat Focus Index has had a 36% weighting to stocks in the growth category and a 31% weighting to stocks in the value category. Since inception across the broader market, value has slightly outperformed growth, so the index overweight toward growth stocks has likely provided a modest headwind for performance.

Exhibit 13 Wide Moat Focus Index: Average Portfolio Weights

	Wide Moat Focus (%)	US Market (%)	S&P 500 (%)
Growth	35.9	33.6	32.0
Core	33.4	33.6	34.1
Value	30.7	32.5	33.9
Large	76.4	73.9	87.3
Mid	22.4	19.4	12.6
Small	1.2	6.4	0.1

Source: Morningstar Direct
All data Oct. 1, 2002-Dec. 31, 2016
Official Benchmark: Morningstar US Market Index

The overweight to large- and mid-cap stocks is also relatively modest. The Wide Moat Focus Index has been roughly 3% overweight large- and mid-cap stocks, on average, relative to the US Market Index since inception. This size bias might have provided a slight headwind to performance, but again, security selection has been the overwhelmingly dominant driver of outperformance, as our attribution analysis has shown. M

Exhibit 14 Wide Moat Focus Index: Size and Style Returns

Index	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	10/01/02 (%)
Morningstar Wide Moat Focus	22.4	8.7	16.0	11.0	14.6
Morningstar Large Cap	11.2	8.7	14.5	6.9	9.3
Morningstar Mid Cap	14.4	8.2	15.1	8.1	12.0
Morningstar Small Cap	20.3	6.9	14.5	8.0	12.1
Morningstar Value	20.8	9.1	14.4	5.5	9.8
Morningstar Core	14.2	9.4	15.6	8.3	10.8
Morningstar Growth	3.2	7.0	13.9	7.8	9.5
Morningstar US Market	12.4	8.5	14.6	7.2	10.1
S&P 500	12.0	8.9	14.7	6.9	9.6

Source: Morningstar Direct
All data through Dec. 31, 2016
Official Benchmark: Morningstar US Market Index

Appendix A: Current Holdings

Exhibit 15 Current Holdings
Continued on next page

Name	Ticker	Sector	Market Cap ($B)	Price/Fair Value
Compass Minerals International	CMP	Basic Materials	2.8	0.94
Monsanto	MON	Basic Materials	47.5	0.86
Amazon.com	AMZN	Consumer Cyclical	391.3	0.91
Harley-Davidson	HOG	Consumer Cyclical	10.1	1.06
Lowe's Companies	LOW	Consumer Cyclical	63.6	0.88
Polaris Industries	PII	Consumer Cyclical	5.4	0.79
Starbucks	SBUX	Consumer Cyclical	80.5	0.84
Tiffany	TIF	Consumer Cyclical	9.8	1.02
Time Warner	TWX	Consumer Cyclical	74.7	1.01
Twenty-First Century Fox Class A	FOXA	Consumer Cyclical	57.5	0.89
VF	VFC	Consumer Cyclical	21.3	0.71
Walt Disney	DIS	Consumer Cyclical	175.3	0.83
Mead Johnson Nutrition	MJN	Consumer Defensive	13.0	0.86
Mondelez International Class A	MDLZ	Consumer Defensive	68.4	0.92
American Express	AXP	Financial Services	69.0	1.01
Bank of New York Mellon	BK	Financial Services	46.9	0.91
Berkshire Hathaway B	BRK.B	Financial Services	404.8	0.97
Mastercard A	MA	Financial Services	115.9	0.89
State Street	STT	Financial Services	29.1	0.95
US Bancorp	USB	Financial Services	89.3	1.07
Visa Class A	V	Financial Services	192.5	0.82
Wells Fargo	WFC	Financial Services	282.6	0.91
Allergan	AGN	Healthcare	82.1	0.73
AmerisourceBergen	ABC	Healthcare	18.9	0.86
Amgen	AMGN	Healthcare	116.6	0.81
Biogen	BIIB	Healthcare	59.9	0.76
Bristol-Myers Squibb	BMY	Healthcare	82.2	0.77
CVS Health	CVS	Healthcare	84.0	0.76
Eli Lilly and	LLY	Healthcare	85.0	0.87
Express Scripts Holding	ESRX	Healthcare	42.5	0.69
Gilead Sciences	GILD	Healthcare	95.4	0.74

Source: Morningstar
All data as of year-end 2016

Exhibit 15 Current Holdings
Continued

Name	Ticker	Sector	Market Cap ($B)	Price/Fair Value
McKesson	MCK	Healthcare	29.5	0.70
Medtronic	MDT	Healthcare	104.4	0.92
Patterson Companies	PDCO	Healthcare	4.1	0.89
Pfizer	PFE	Healthcare	192.5	0.86
Varian Medical Systems	VAR	Healthcare	7.3	0.88
Zimmer Biomet Holdings	ZBH	Healthcare	23.7	0.91
CSX	CSX	Industrials	43.1	1.13
Deere	DE	Industrials	34.1	1.03
Emerson Electric	EMR	Industrials	37.8	0.95
Norfolk Southern	NSC	Industrials	34.1	1.13
Stericycle	SRCL	Industrials	6.6	0.73
TransDigm Group	TDG	Industrials	11.6	0.71
United Technologies	UTX	Industrials	90.3	0.90
CBRE Group	CBG	Real Estate	10.2	0.82
Jones Lang LaSalle	JLL	Real Estate	4.7	0.81
Cerner	CERN	Technology	18.2	0.85
Guidewire Software	GWRE	Technology	3.8	0.78
Microsoft	MSFT	Technology	499.6	0.95
Salesforce.com	CRM	Technology	55.1	0.80

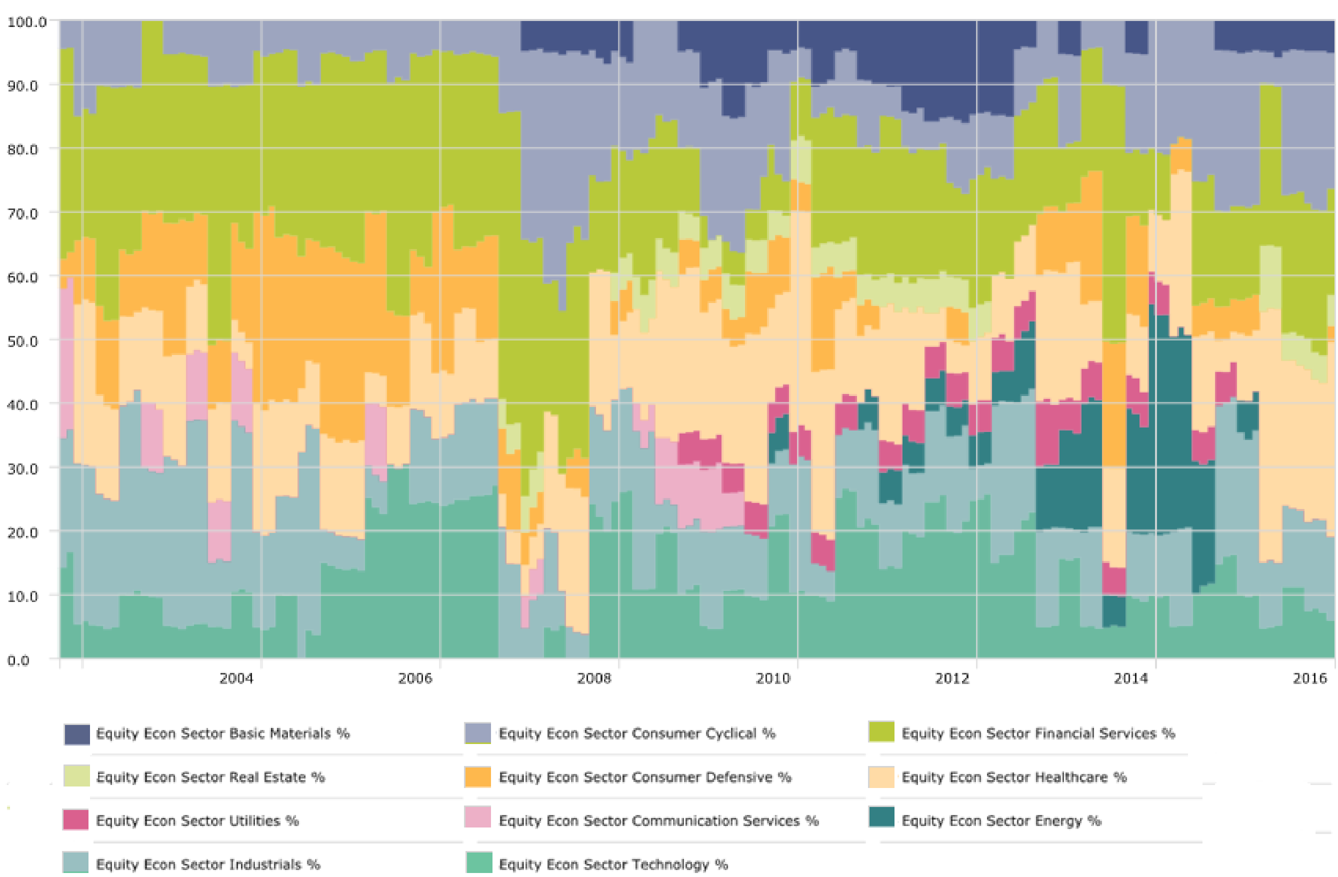
Source: Morningstar
All data as of year-end 2016

Appendix B: Sector Distribution

Sector Distribution

The Wide Moat Focus Index sector weightings have drifted a great deal over the years. As previously mentioned, the portfolio has a current heavy concentration in the healthcare sector. Such concentration is not abnormal. For example, toward the end of 2010, more than 25% of the portfolio was in technology, but the technology sector weighting dropped to 5% by early 2013 as opportunities in other sectors became more attractive.

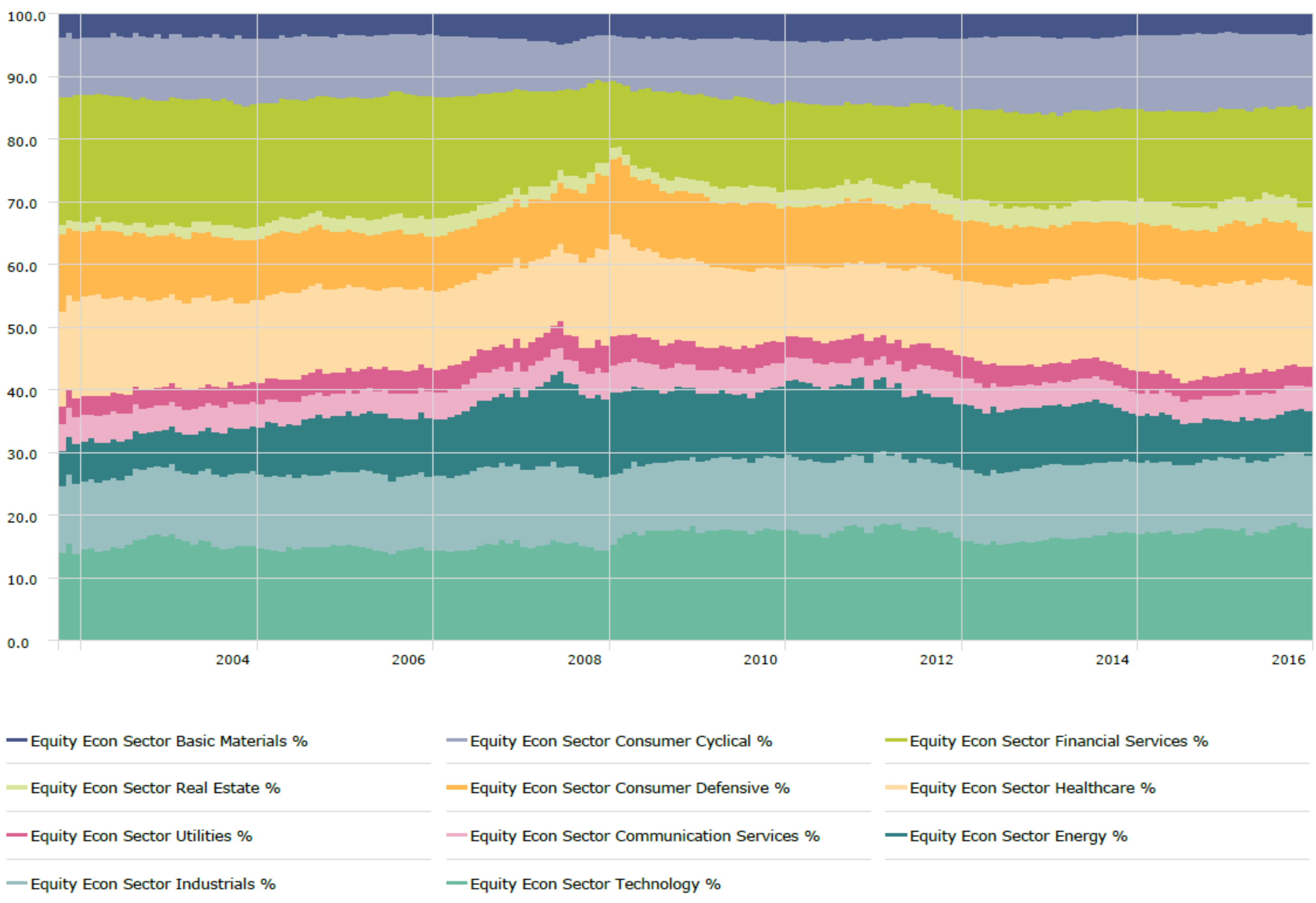
Exhibit 16 Wide Moat Focus Index: Sector Weightings, 2002-16



Source: Morningstar Direct
All data Oct. 1, 2002-Dec. 31, 2016

To put the Wide Moat Focus Index's sector allocation in perspective, Exhibit 16 shows the sector allocation for the benchmark Morningstar US Market Index. The Wide Moat Focus Index has historically been underweight the energy and technology sectors, which have collectively made up 25% to 30% of the Morningstar US Market Index. However, these sectors have lower concentrations of wide-moat firms.

Exhibit 17 Morningstar US Market Index: Sector Weightings, 2002-16



Source: Morningstar Direct
All data Oct. 1, 2002-Dec. 31, 2016

As part of our June 2016 methodology enhancements, we now implement a sector weighting cap that limits sector exposure to a maximum 40% of the total index. However, if the benchmark's sector exposure exceeds 30%, the Wide Moat Focus Index may maintain exposure to that sector up to 10% higher than the benchmark weight.

Appendix C: Morningstar Economic Moat Methodology

The Strategy Behind the Wide Moat Focus Index

Morningstar focuses on analyzing sustainable competitive advantages (economic moats) and understanding the source of each company's edge. We believe firms can establish an economic moat by having at least one of five specific moat sources: intangible assets, cost advantage, switching costs, network effect, or efficient scale. Additionally, in a midcycle environment, we expect wide-moat companies to generate returns on invested capital above their weighted average cost of capital.

Below, we describe the five moat sources that allow for durable competitive advantages. This analysis and the corresponding valuation work lie at the foundation of the Wide Moat Focus Index.

Intangible Assets

The intangible assets moat source is broad and includes brands, patents, and regulatory licenses. A brand creates an economic moat around a company's profits if it increases the customer's willingness to pay or increases customer captivity. A moatworthy brand manifests itself as pricing power or repeat business that translates into economic profits. Patents allow companies to generate excess profits while rivals are legally barred from competing, but we'd only award wide or narrow economic moat ratings to a company that has a demonstrated record of innovation that we're confident can continue, as well as a wide variety of patented products. Finally, regulatory licenses can lead to sustainable competitive advantages if the rules make it difficult or even impossible for competitors to enter the market. Regulations are especially favorable if a company can operate like a monopoly but isn't regulated like one with regard to pricing.

Cost Advantage

A company can dig an economic moat by having sustainably lower costs than its competitors. A favorable cost position can stem from process advantages, a superior location, economies of scale, or access to a unique asset. Process advantages are interesting, but we only award wide or narrow economic moat ratings to companies with this edge if the process cannot be easily replicated by competitors. An advantageous location can also provide a sustainable cost edge, given the difficulty of duplication. Companies with economies of scale have lower average costs than their competitors, with smaller production volumes. Finally, access to a unique asset can provide a sustainable low-cost advantage that competitors are unable to replicate.

Switching Costs

Switching costs are the expenses— in time or money—that a customer would incur to change from one producer or provider to another. Customers facing high switching costs often won't switch even if a competitor is offering a lower price or better-performing product or service. To make the switch, the improvement in performance or price must be large enough to offset the cost of switching. High switching costs are especially prevalent and powerful when there is a high cost of failure or the cost of the specific product or service is low relative to the customer's total operating costs.

Network Effect

The network effect is probably the most potent source of a sustainable competitive advantage, but it's also the least common across our coverage, with only 18% of our wide-moat firms benefiting from it. The network effect occurs when the value of a particular good or service increases for both new and existing users as more customers use that good or service. The network effect is a virtuous cycle that allows strong companies to get even stronger.

Efficient Scale

Efficient scale primarily describes a dynamic in which a market of limited size is effectively served by one company or a small number of companies. The incumbents generate economic profits, but a potential competitor is discouraged from entering because doing so would cause returns in the market to fall below the cost of capital. This phenomenon often applies when market entry requires a significant capital commitment. To cover its entry costs, a new entrant would want a sufficient share of the market, but if the market opportunity is limited, a fight for market share would impair returns for all players in the industry.

- Of the 200 or so wide-moat companies we cover, 72% benefit from intangible assets, 49% from sustainable cost advantage, 40% from customer switching costs, 18% from network effect, and 11% from efficient scale. Because firms can achieve a wide moat from multiple sources, the percentages do not add up to 100%.

Appendix D: Practical Issues

Practical Issues

The Wide Moat Focus Index has been offered as an exchange-traded note since October 2007 and was launched as an exchange-traded fund, the VanEck Vectors Morningstar Wide Moat ETF (Ticker: MOAT), in early 2012. Since launch, performance for the ETN and ETF have largely matched that of the Wide Moat Focus Index (lagging only the expense ratio). Given that the median market cap of the Wide Moat Focus Index's current constituents is about $50 billion, capacity should not be a concern for any new investor at the current stage.

Turnover Constraints

Since the portfolio construction process has been mechanical, it has also had somewhat high turnover. Initially, this was the case because a stock trading at a given discount to our fair value estimate would have been replaced by one trading at a very slightly larger discount at each reconstitution date. Of course, few rational portfolio managers would actually replace a security trading at a 15% discount to their estimated fair value with one trading at a 15.2% discount. For one, the transaction costs could eat up any potential alpha and, additionally, fair value estimates are just that—estimates.

To address this concern, we enhanced our reconstitution process in June 2016 to reduce turnover. We installed a new turnover buffer that retains current index holdings ranked in the top 150% of all investable stocks. In other words, if a holding falls out of the top 40 cheapest stocks that would typically be included in a given subportfolio but remains within the top 60, it will remain in the index at the expense of a would-be newcomer that might be trading at a slightly lower price/fair value ratio.

We designed the index construction process to be as hands-off as possible, which allows our bottom-up research on economic moats and intrinsic values to inform portfolio construction. We eschew top-down intervention that would otherwise lead observers to question whether the portfolio's returns stemmed from managerial overrides rather than our analysts' company-specific analysis.

Reconstitution

Until June 2016, the Wide Moat Focus Index was reconstituted quarterly to include the 20 wide-moat stocks trading at the largest discount to our estimated fair value. However, as part of our June 2016 methodology enhancements, we adjusted our approach. Now, the index consists of two subportfolios that each hold 40 companies and are reconstituted semiannually on a staggered basis. Although this doesn't prevent holdings from rising above fair value between reconstitutions, it aims to reduce turnover and increase capacity while minimizing timing risk.

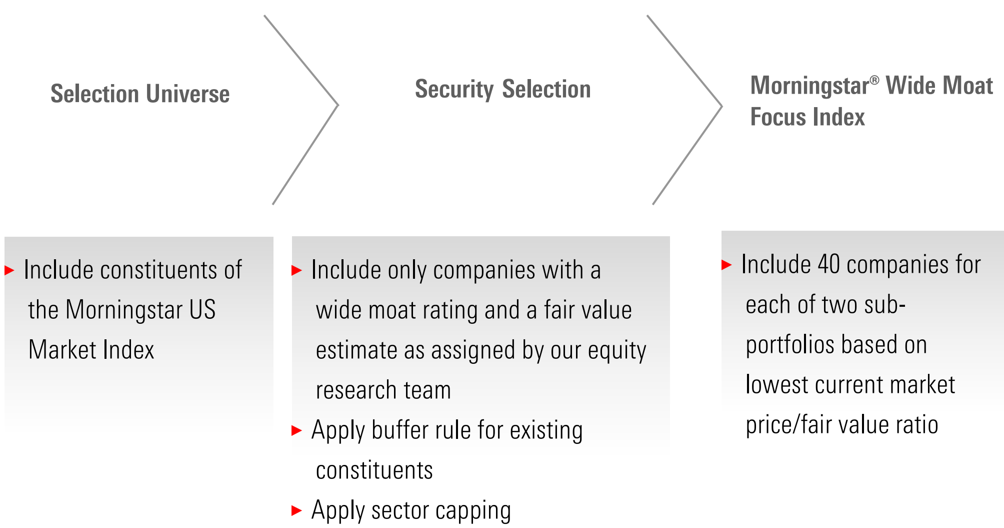
Appendix E: Construction Rules

Index Launch Date, Inception Date, and Base Market Value

The inception date of the Wide Moat Focus Index is Oct. 17, 2007, and the performance inception date is Sept. 30, 2002, when the first back-tested index value was calculated.

Index Construction

Exhibit 18 Wide Moat Focus Index: Construction Process



Source: Morningstar

Index Weighting

Index constituents are equally weighted within a given subportfolio upon its semiannual reconstitution. At reconstitution, the 40 stocks in a subportfolio each have a 2.5% weighting. At times, a stock will be held in one subportfolio but not the other, typically leading to a smaller overall weighting than holdings that are included in both subportfolios. If a stock price moves well above fair value and stays there, it would first be removed from the subportfolio that is reconstituted next and remain in the second subportfolio. It would then be removed from the second subportfolio (roughly three months later) when that subportfolio is reconstituted. When it's removed from the second portfolio, it is removed from the Wide Moat Focus Index altogether.

Selecting Stocks for the Morningstar Wide Moat Focus Index

The Morningstar Wide Moat Focus Index selects wide-moat stocks that represent the best value as determined by the ratio of the stock price to Morningstar's estimate of fair value. Therefore, index constituents represent the most compelling values across our wide-moat coverage, according to Morningstar analysts. The index holds a minimum of 40 stocks and a maximum of 80 stocks, but will typically hold somewhere around 50. The number of holdings depends on how many stocks are replaced when each subportfolio is reconstituted. The staggered reconstitution allows the index to hunt for undervalued stocks more frequently than a traditional semiannual reconstitution. It also aims to reduce total portfolio turnover.

Methodology

The Morningstar Wide Moat Focus Index is a subset of the Morningstar Wide Moat Index, which, in turn, is a subset of the Morningstar US Market Index, a broad market index representing 97% of U.S. equity market capitalization. The Morningstar US Market Index is the benchmark for the Wide Moat Focus Index.

To qualify for the Morningstar Wide Moat Focus Index, all US Market Index constituents must meet the following criteria:

- Company is assigned a wide-moat classification by a Morningstar analyst.
- Company's stock is assigned a fair value estimate by a Morningstar analyst.

Rebalancing and Reconstitution

Because of the staggered reconstitution, the Morningstar Wide Moat Focus Index consists of two subportfolios that each hold 40 companies. One subportfolio reconstitutes in March and September and the other in June and December. At each reconstitution, the 40 securities representing the lowest current market price/fair value are selected from the list of all eligible securities for the subportfolio. The two subportfolios are brought back to equal weight in the overall index portfolio every December and June.

Turnover Buffer

To reduce turnover, the index implements a turnover buffer that retains current index holdings ranked in the top 150% of all investable stocks. In other words, if a current holding falls out of the 40 cheapest stocks that would typically be included in a given subportfolio but remains within the top 60, it will remain in the index at the expense of a stock that is trading at a slightly lower price/fair value ratio.

Sector Capping

As a risk-control measure, exposure to any Morningstar sector shall not exceed 40% of index weight. However, if the sector exposure of the reference benchmark, the Morningstar US Market Index, exceeds 30%, the index may maintain exposure to that sector of 10 percentage points higher than the benchmark weight.

Number of Stocks

Each reconstituted subportfolio holds 40 stocks based on a transparent ranking system subject to selection and eligibility criteria at reconstitution. However, if securities fall short of the selection and eligibility criteria, or securities are added or deleted because of corporate actions after reconstitution, the subportfolio could hold more or fewer than 40 companies. In addition, securities that are removed from the Morningstar US Market Index after June and December reconstitutions are simultaneously deleted from the Wide Moat Focus Index. The aggregate portfolio can contain between 40 and 80 constituents, but should typically hold about 50.

Index Maintenance

The subportfolios are reconstituted semiannually with a quarterly staggered schedule. Index membership is reset on the Monday following the third Friday every quarter in March, June, September, and December. If that Monday is a holiday, reconstitution will become effective as of the next business day. In addition, the subportfolio weights are reset to 50% each in June and December. The analyst-driven data (company-specific economic moat ratings and fair value estimates) used to reconstitute the index is captured as of the Tuesday before the second Friday of the reconstitution month.

Portfolio Construction Process

- In March, the first subportfolio is reconstituted, while the second is not (drifted leg). As a result, the composition of the subportfolios may not be identical at this time.
- In June, the second subportfolio is reconstituted and the first forms the drifted leg. In addition, the subportfolio weights are reset to 50% each and distributed among the securities within them in proportion to their weights.
- In September, the first subportfolio is reconstituted again.
- In December, the second subportfolio is reconstituted. In addition, the subportfolio weights are reset to 50%.
- The process is repeated (go to step 2).

About Morningstar® Institutional Equity Research™

Morningstar Institutional Equity Research provides independent, fundamental equity research differentiated by a consistent focus on sustainable competitive advantages, or Economic Moats.

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