

# Morningstar Wide Moat Focus Index: 2021 Year in Review

The index modestly underperformed the broader market, but long-term results remain compelling.

## Morningstar Equity Research

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## Executive Summary

After historically strong first-quarter performance, the Morningstar Wide Moat Focus Index faltered over the remainder of 2021. When the dust had settled at the end of the year, the index had delivered slight underperformance versus the broader U.S. equity market. However, the strategy's long-term performance remains impressive, having now established a 15-year track record since live inception in February 2022. The index has outperformed its benchmark by 282 basis points annually since it went live in early 2007.

Over the index's long-term track record, stock selection, rather than sector weightings or factor exposures, has been the primary source of outperformance. However, for any strategy that involves the active element of analyst-driven valuation assessments, unfavorable stock selection is certain to rear its head from time to time. This scenario played out in 2021, as stock selection proved unfavorable.

Being underweight "momentum" relative to the benchmark also weighed on excess returns. However, a lower exposure to momentum relative to the benchmark is a structural dynamic that results from the use of a valuation screen. Accordingly, we view this as a "necessary evil" that helps ensure the index consistently trades at a discount to fair value.

An underweight position in Big Tech stocks (Alphabet, Amazon, Apple, Meta Platforms, Microsoft, and Tesla), also represented a mild performance headwind, as these stocks performed well on average, during the year. Across this group, Alphabet, Amazon, Meta Platforms, and Microsoft were each held by the index for at least a portion of the year, although each was held at a lower relative weighting versus the benchmark.

Although the portfolio has typically operated in the core/blend style category, it has exhibited a value tilt in recent years. This positioning had little impact on relative performance in 2021, as "growth" and "value" yielded similar returns.

### Morningstar Wide Moat Focus Index Performance Versus Benchmark (% Total Returns)

	2021	Trailing 3-Yr	Trailing 5-Yr	Trailing 10-Yr	Live Inception
Morningstar Wide Moat Focus Index	24.81%	24.89%	19.08%	17.54%	13.42%
Morningstar US Market Index	25.78%	25.89%	18.15%	16.36%	10.60%
<i>Out/Underperformance vs. Benchmark</i>	<i>-0.97%</i>	<i>-1.00%</i>	<i>0.93%</i>	<i>1.18%</i>	<i>2.82%</i>

Source: Morningstar Direct. Data from Feb. 14, 2007 to Dec. 31, 2021.

### The Morningstar Wide Moat Focus Index Has Established an Impressive Long-Term Track Record

Although this report focuses on Morningstar Wide Moat Focus Index performance in 2021, it is important to contextualize these results within long-term performance observations. Indeed, the index's 15-year live track record remains highly favorable.

### Long-Term Risk-Adjusted Return Metrics Remain Favorable

In addition to attractive total returns, the index has performed well on a risk-adjusted basis, with a Sharpe ratio of 0.76 and an information ratio of 0.37 since live inception. Perhaps most noteworthy is the index's quarterly upside capture ratio of 107 and downside capture of 86. These figures indicate the strategy has, on average, outperformed in quarters when its benchmark has risen and outperformed in quarters when its benchmark has declined. It is rare to see versatility of this nature, particularly over such a lengthy assessment period.

#### Exhibit 1 Attractive Risk-Adjusted Returns Over the Long Term

Index Name	Annual Total		Beta	Sharpe Ratio	Sortino Ratio	Information Ratio	Upside Capture	Downside Capture	Max Drawdown (%)
	Return %	Std Dev (%)							
Morningstar Wide Moat Focus Index	13.81	18.51	0.95	0.76	1.31	0.37	106.92	86.46	-35.10
Morningstar US Market Index	10.84	17.53	1.00	0.64	0.99	-	-	-	-45.54

Note: Annualized total return data differs slightly from the exhibit on the front page, as this exhibit uses quarterly data starting on April 1, 2007 rather than the index's Feb. 14, 2007 live inception date.  
Source: Morningstar Direct.  
Quarterly data from April 1, 2007, to Dec. 31, 2021.  
Benchmark: Morningstar US Market Index.

### Following Four Consecutive Years of Outperformance, the Index Underperformed in 2020 and 2021

The Morningstar Wide Moat Focus Index has generated higher total returns than its benchmark in eight of the 15 calendar years since its live inception date. Additionally, the magnitude of outperformance in positive years has, on average, exceeded the magnitude of underperformance in negative years.

#### Exhibit 2 Recent Underperformance Hasn't Tarnished the Index's Favorable Long-Term Results

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Morningstar Wide Moat Focus Index	-5.39%	-19.58%	46.93%	8.57%	6.61%	24.50%	31.46%	9.68%	-4.28%	22.37%	23.79%	-0.74%	35.65%	15.09%	24.81%
Morningstar US Market Index	2.47%	-37.03%	28.45%	16.80%	1.58%	16.27%	33.13%	12.85%	0.69%	12.44%	21.47%	-5.05%	31.22%	20.90%	25.78%
<i>Out/Underperformance vs. Benchmark</i>	<i>-7.85%</i>	<i>17.46%</i>	<i>18.48%</i>	<i>-8.23%</i>	<i>5.03%</i>	<i>8.24%</i>	<i>-1.68%</i>	<i>-3.17%</i>	<i>-4.97%</i>	<i>9.93%</i>	<i>2.32%</i>	<i>4.31%</i>	<i>4.43%</i>	<i>-5.81%</i>	<i>-0.97%</i>

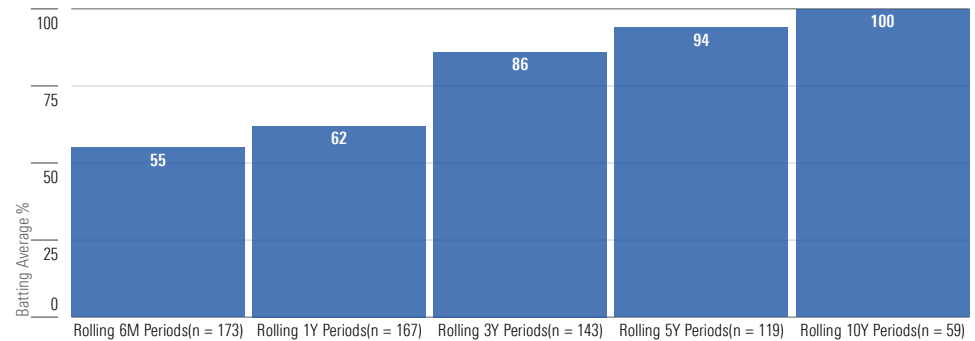
Source: Morningstar Direct.  
Data from Feb. 14, 2007 to Dec. 31, 2021.  
Benchmark: Morningstar US Market Index.

### We Observe a Positive Correlation Between Holding Period Length and "Batting Average"

The Morningstar Wide Moat Focus Index's historical performance becomes increasingly favorable as the implied holding period lengthens. Here, we consider the strategy's "batting average"—the percentage of time periods in which it has outperformed its benchmark—across various holding period lengths. The batting average metric doesn't account for the magnitude of excess returns in a given month; instead, it reflects only whether the index outperformed or underperformed its benchmark.

Exhibit 3 indicates that the index has outperformed its benchmark in 55% of the 178 months since its live inception. However, its batting average rises to 94% over the 119 five-year holding periods on a monthly rolling basis and it has outperformed in all 59 of the 10-year holding periods on a monthly rolling basis.

**Exhibit 3** The Index's Batting Average Rises as the Holding Period Increases

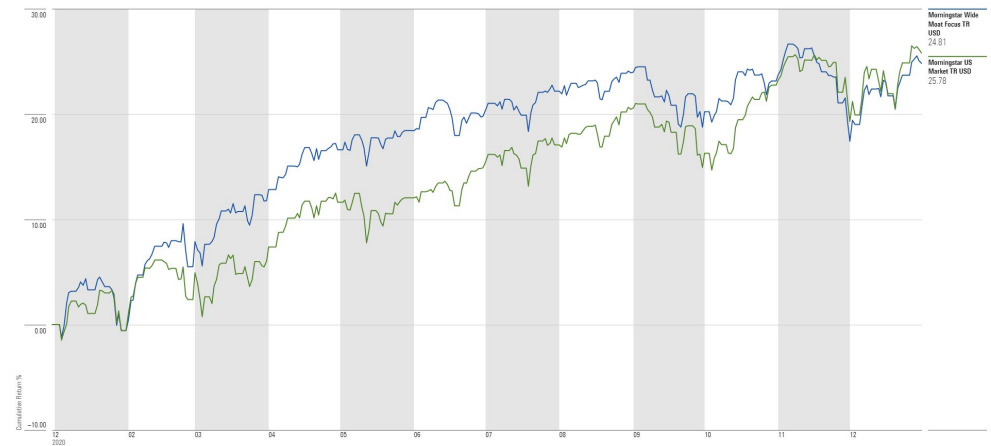


Source: Morningstar Direct. Data from March 1, 2007, to Dec. 31, 2021.  
 Benchmark: Morningstar US Market Index.  
 Data frequency: Monthly.

**Despite Strong Q1 Performance, Weak Q4 Results Drove Underperformance by Year-End**

The index opened a sizable lead on its benchmark during the first quarter. This lead was maintained for most of the year before weak results took hold in the fourth quarter.

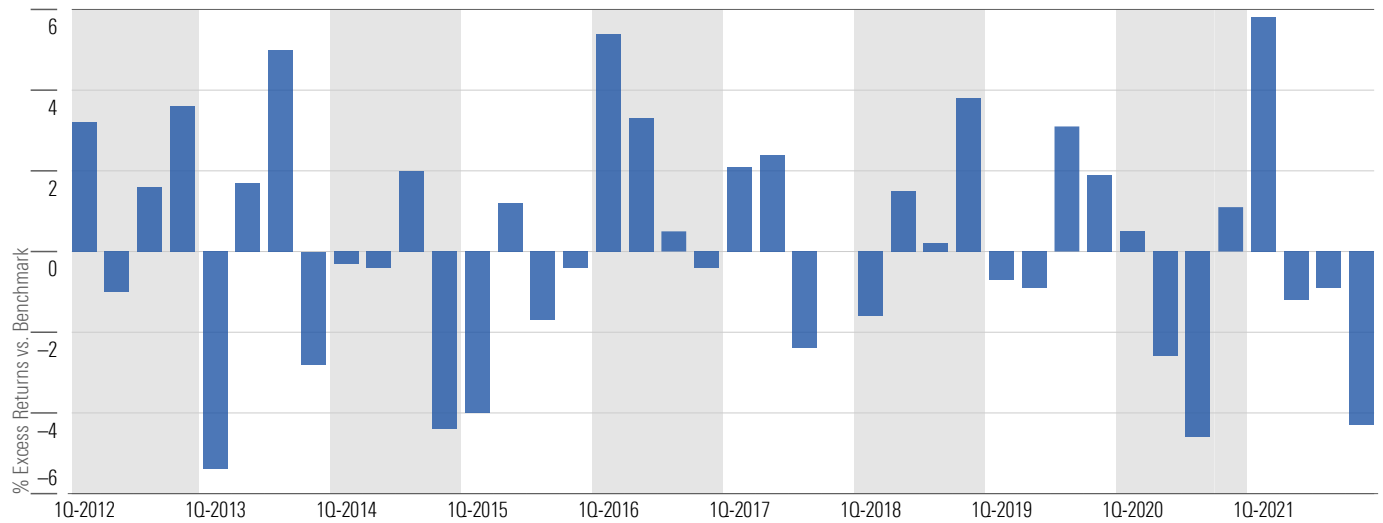
**Exhibit 4** The Index's Outperformance Gap Closed Over the Course of 2021



Source: Morningstar Direct. Data from Jan. 1, 2021 to Dec. 31, 2021.  
 Benchmark: Morningstar US Market Index.

In fact, the first quarter saw the index's highest single quarter of excess returns over the past decade, as it delivered an 11.8% total return versus the benchmark's 6.0%. However, the fourth quarter was the index's fourth-worst single quarter over the past decade, as it reported a 5.1% total return versus 9.5% for the benchmark.

**Exhibit 5** Quarterly Excess Returns Versus Benchmark (Trailing 10-yrs)



Source: Morningstar Direct.  
 Data from Jan. 1, 2021, to Dec. 31, 2021.  
 Benchmark: Morningstar US Market Index.

**Stock Selection Stands Out as the Primary Performance Headwind in 2021**

In assessing 2021 performance attribution, stock selection drove the index's underperformance while sector positioning provided a slight performance boost. As analyzed later in this report, being underweight Big Tech stocks was an unfavorable positioning but explained only a portion of the adverse stock selection effect.

**Exhibit 6** 2021 Performance Attribution: Sector Allocation and Stock Selection Effects

	Weights %			Return %		Contribution %		Attribution %		
	Portfolio	Benchmark	Difference	Portfolio	Benchmark	Portfolio	Benchmark	Allocation Effect %	Selection Effect %	Excess Return %
Basic Materials	4.95	2.41	2.54	4.78	29.88	0.25	0.71	0.21	-1.38	-1.17
Communication Services	6.53	10.37	-3.84	36.67	16.98	2.25	1.74	0.33	1.23	1.56
Consumer Cyclical	6.48	12.29	-5.81	11.11	20.93	0.74	2.65	0.26	-0.66	-0.40
Consumer Defensive	11.16	5.87	5.29	16.46	17.42	2.03	1.09	-0.36	-0.20	-0.56
Energy	2.76	2.48	0.28	69.48	55.37	1.66	1.14	0.23	0.20	0.43
Financial Services	12.72	13.64	-0.92	32.97	27.49	5.34	3.58	0.75	1.33	2.07
Healthcare	20.35	13.33	7.02	9.73	20.90	2.03	2.87	-0.24	-2.51	-2.74
Industrials	13.34	9.05	4.29	22.13	21.55	2.92	1.94	-0.35	0.15	-0.20
Real Estate	0.00	3.35	-3.35	-	38.58	-	1.25	-0.41	0.00	-0.41
Technology	19.62	24.74	-5.13	36.88	33.82	6.69	8.40	-0.16	0.03	-0.13
Utilities	2.09	2.46	-0.36	8.09	17.53	0.21	0.46	0.08	-0.23	-0.16
<b>Attribution Total</b>	<b>100</b>	<b>100</b>		<b>24.11</b>	<b>25.83</b>	<b>24.11</b>	<b>25.83</b>	<b>0.34</b>	<b>-2.05</b>	<b>-1.71</b>
								<b>Reported Excess Return:</b>		<b>-0.97</b>

\*\*\* Reported returns for the index and benchmark were 24.81% and 25.78%, respectively, after accounting for residuals.

Source: Morningstar Direct.

Data from Jan. 1, 2021, to Dec. 31, 2021.

Benchmark: Morningstar US Market Index.

**Notable Contributors to Index Active Returns in 2021**

To provide additional context regarding the individual companies that had the most significant impact on index performance, we've compiled the top- and bottom 10 contributors to active returns in 2021.

**Exhibit 7** 2021 Top/Bottom 10 Contributors to Active Returns in 2021

Company Name	Weights			Quarterly Return %	Contribution to Return %			Attribution Effect % Active Ret%
	Portfolio	Benchmark	+/-		Portfolio	Benchmark	+/-	
Applied Materials Inc	0.45	0.28	0.18	83.61	0.89	0.18	0.71	0.96
Wells Fargo & Co	2.84	0.42	2.42	61.12	1.55	0.20	1.34	0.74
Lam Research Corp	0.77	0.20	0.56	53.66	0.84	0.10	0.74	0.63
Alphabet Inc Class A	2.42	1.72	0.70	65.30	1.31	0.92	0.40	0.57
General Dynamics Corp	2.21	0.10	2.11	43.74	0.92	0.04	0.88	0.52
John Wiley & Sons Inc Class A	1.24	0.01	1.23	28.54	0.80	0.00	0.80	0.42
Pfizer Inc	2.17	0.54	1.63	66.74	1.20	0.36	0.84	0.38
Charles Schwab Corp	1.16	0.24	0.91	60.21	0.91	0.13	0.78	0.35
Visa Inc Class A	0.00	0.89	-0.89	-0.32	0.00	0.00	0.00	0.32
PayPal Holdings Inc	0.00	0.71	-0.71	-19.48	0.00	-0.14	0.14	0.27
Company Name	Portfolio	Benchmark	+/-	Benchmark	Portfolio	Benchmark	+/-	Active Ret%
Alphabet Inc Class C	0.00	1.64	-1.64	65.17	0.00	0.87	-0.87	-0.43
Salesforce.com Inc	2.50	0.55	1.95	14.20	0.40	0.08	0.33	-0.43
Intel Corp	2.40	0.54	1.86	6.02	0.13	0.04	0.10	-0.52
Boeing Co	2.37	0.29	2.08	-5.95	-0.16	-0.02	-0.14	-0.60
NVIDIA Corp	0.00	1.10	-1.10	125.48	0.00	1.08	-1.08	-0.61
Medtronic PLC	2.45	0.39	2.06	-9.81	-0.28	-0.04	-0.24	-0.65
The Western Union Co	1.41	0.02	1.39	-15.15	-0.36	0.00	-0.36	-0.76
Guidewire Software Inc	1.91	0.02	1.89	-11.81	-0.10	0.00	-0.09	-0.88
Zimmer Biomet Holdings Inc	2.42	0.08	2.35	-17.02	-0.52	-0.01	-0.51	-1.02
Compass Minerals International Inc	2.38	0.01	2.38	-14.24	-0.45	0.00	-0.45	-1.23

Source: Morningstar Direct.

Data from Jan. 1, 2021, to Dec. 31, 2021.

Benchmark: Morningstar US Market Index.

We'd note that positive contributors Visa and PayPal were not index holdings but still boosted active returns because of the combination of their weak performance and hefty benchmark weightings. Negative contributors Alphabet (Class C) and NVIDIA were also not held in the index but delivered strong returns. Partially offsetting the impact of the Alphabet (Class C) underweight position was the fact that the index was overweight Alphabet (Class A) shares.

### The Index Enjoyed a Slight Benefit From Sector Positioning in 2021

The Morningstar Wide Moat Focus Index's sector positioning versus that of the benchmark provided a modest relative performance tailwind to the tune of 34 basis points.

**Exhibit 8** 2021 Performance Attribution: Sector Allocation Effect

	Weights %			Return %	Attribution %
	Portfolio	Benchmark	Difference	Benchmark	Allocation Effect %
Basic Materials	4.95	2.41	2.54	29.88	0.21
Communication Services	6.53	10.37	-3.84	16.98	0.33
Consumer Cyclical	6.48	12.29	-5.81	20.93	0.26
Consumer Defensive	11.16	5.87	5.29	17.42	-0.36
Energy	2.76	2.48	0.28	55.37	0.23
Financial Services	12.72	13.64	-0.92	27.49	0.75
Healthcare	20.35	13.33	7.02	20.90	-0.24
Industrials	13.34	9.05	4.29	21.55	-0.35
Real Estate	0.00	3.35	-3.35	38.58	-0.41
Technology	19.62	24.74	-5.13	33.82	-0.16
Utilities	2.09	2.46	-0.36	17.53	0.08
<b>Attribution Total</b>	<b>100</b>	<b>100</b>		<b>25.83</b>	<b>0.34</b>

Source: Morningstar Direct.

Data from Jan. 1, 2021, to Dec. 31, 2021.

Benchmark: Morningstar US Market Index.

The index was well served by its exposure to the financial services sector exposure relative to the benchmark over the course of 2021. Exhibit 8 indicates that the index was underweight the financial services sector, on average, over the course of 2021. Therefore, it's counterintuitive that the sector outperformed the broader market but the index still enjoyed a positive financial services sector allocation effect. However, this is due to timing, as the index was overweight financial services in the first quarter when the sector soundly outperformed the market and then was then mostly underweight the sector over the rest of the year.

On the other side of the coin, holding no real estate companies, being overweight consumer defensive, and being overweight industrials each weighed on excess returns. Most sectors fluctuate between overweight and underweight positions relative to the benchmark based on where individual stock valuations lie from one quarter to the next. However, other sectors tend to be either structurally overweight (consumer defensive/healthcare) or underweight (communication services/energy/real

estate/utilities) due to either an abundance or dearth of wide moat-rated stocks from which index constituents are selected. In recent years, the index has been structurally underweight the technology sector due to its equal-weighting approach being unable to replicate the sizable benchmark weightings of Big Tech stocks.

### An Underweight Loading to Momentum Weighed on Excess Returns in 2021

With momentum having performed better, in isolation, than all other traditional factors in 2021, the index's lower momentum exposure relative to the benchmark represented a drag on excess returns. While a lower relative momentum loading was the most impactful factor exposure on active returns, its impact was more than offset by the combined impact of other factor weightings.

**Exhibit 9** 2021 Performance Attribution: Factor Exposures

	Portfolio Exposure	Benchmark Exposure	Active Exposure	Factor Premium %	Portfolio Contrib %	Benchmark Contrib %	Active Contrib %
Style	—	—	—	—	0.64	-0.08	0.72 ●
Size	0.16	-0.15	0.30	2.79	0.47	-0.41	0.89 ●
Style	-0.37	0.01	-0.38	-2.92	1.31	-0.05	1.37 ●
Yield	0.30	0.03	0.27	0.01	0.15	0.00	0.15 ●
Volatility	-0.14	-0.05	-0.09	-7.14	1.14	0.36	0.78 ●
Momentum	-0.33	-0.00	-0.33	7.24	-2.14	-0.04	-2.10 ●
Quality	-0.17	0.01	-0.18	1.17	-0.20	-0.00	-0.19 ●
Liquidity	-0.03	0.04	-0.07	1.83	-0.10	0.08	-0.17 ●

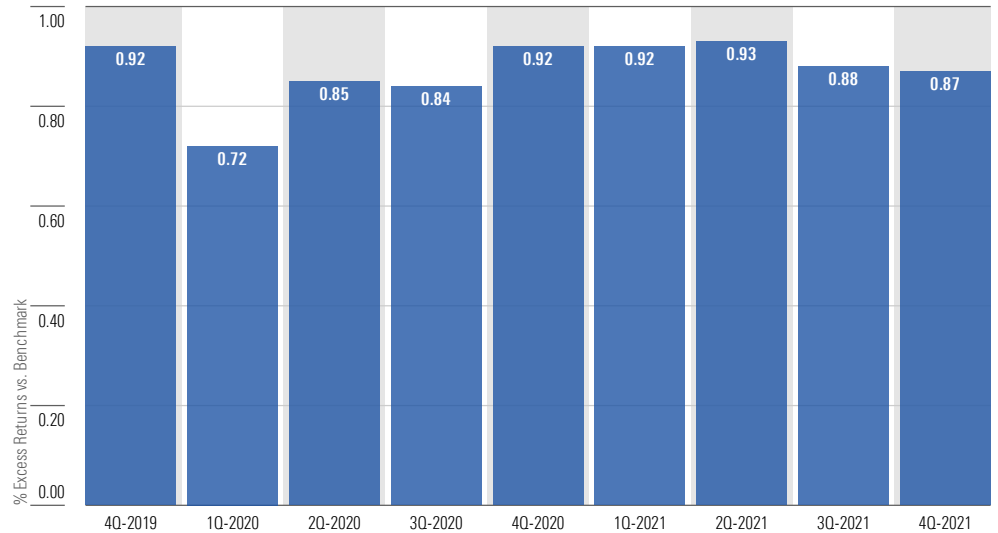
Source: Morningstar Direct.

Data from Jan. 1, 2021, to Dec. 31, 2021.

Benchmark: Morningstar US Market Index.

Risk Model: Standard Factor Model (USD)

The index's underweight momentum loading is a structural dynamic that stems from the use of a valuation screen. At each quarterly reconstitution, new additions to the index frequently enter with a negative loading to momentum, as determined by the company's stock price performance over roughly the trailing calendar year. This typically takes place when the stock has traded lower, but our analyst-driven fair value estimate hasn't decreased by the same magnitude or, in many cases, hasn't decreased at all. On the other side of the coin, when a stock performs well and eventually reaches or exceeds our fair value estimate, thereby establishing a positive momentum loading, it is often replaced by a new, more undervalued, holding at the next quarterly reconstitution. Accordingly, being underweight momentum has been a "necessary evil" that should continue to help ensure that the index consistently trades at a discount to fair value.

**Exhibit 10** The Index Consistently Trades at a Discount To Fair Value

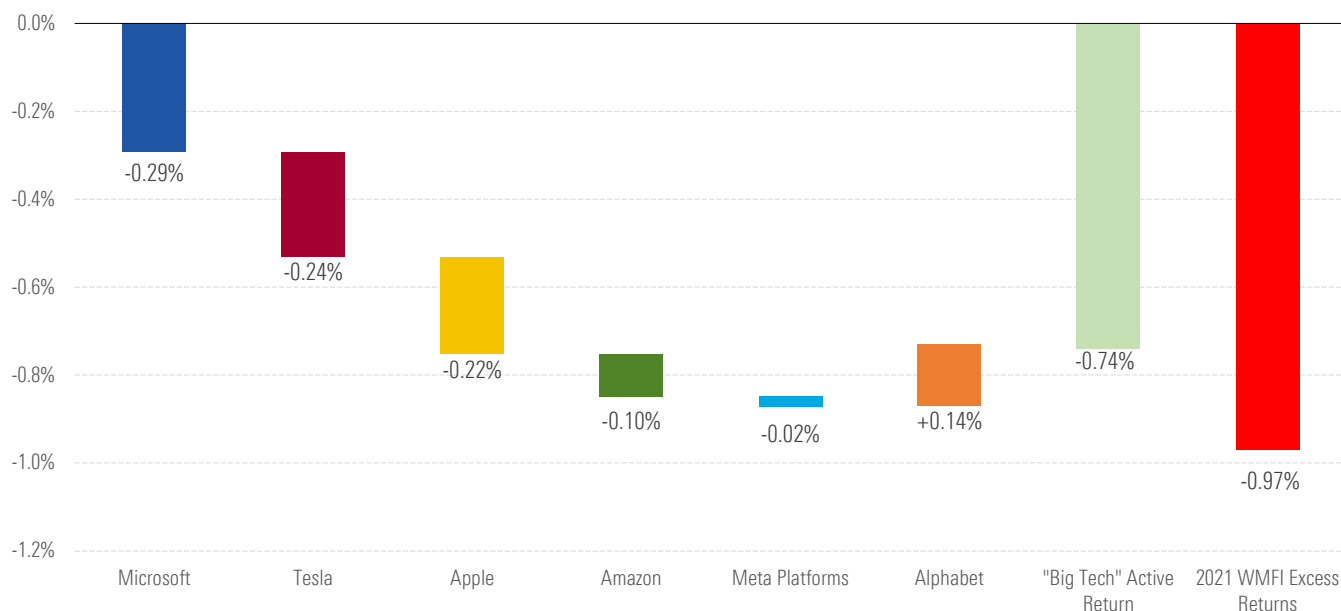
Source: Morningstar Direct.  
Data from Oct. 1, 2019, to Dec. 31, 2021.

### Being Underweight Big Tech Stocks Remained a Headwind in 2021

In recent years, index has maintained an underweight position in Big Tech stocks, including Facebook, Apple, Amazon, Alphabet, Microsoft, and Tesla (if we were to loosely consider it a "tech stock"). The index was once again underweight each of these stocks versus the benchmark, on average, over the course of 2021. We focus on these six companies, as they command the six heaviest weightings in the index's benchmark, the Morningstar US Market index.

Being underweight, Big Tech has proven adverse in recent years. This remained true in 2021, although the negative impact was relatively modest. In looking at active returns associated with each of these stocks in 2021, only Alphabet was a positive contributor. Active returns reflect the performance of a stock, adjusted for its weighting in the index relative to its weighting in the benchmark. For example, if a stock outperforms the broader market but has an underweight position in the index relative to the benchmark, active returns would be negative, representing a drag on excess returns for the index as a whole. In this case, both the index and the benchmark would benefit in absolute terms from holding a stock that performs well, but the benefit to the benchmark's performance would be greater, weighing on relative returns for the index.



**Exhibit 11** Active Returns From Big Tech Positions in 2021

Source: Morningstar Direct. Data from Jan. 1, 2021 to Dec. 31, 2021.  
Benchmark: Morningstar US Market Index.

With the Morningstar US Market Index having delivered a 25.8% total return in 2021, four of these six companies outperformed the benchmark — Alphabet (classes A and C), Microsoft, Tesla, and Apple.

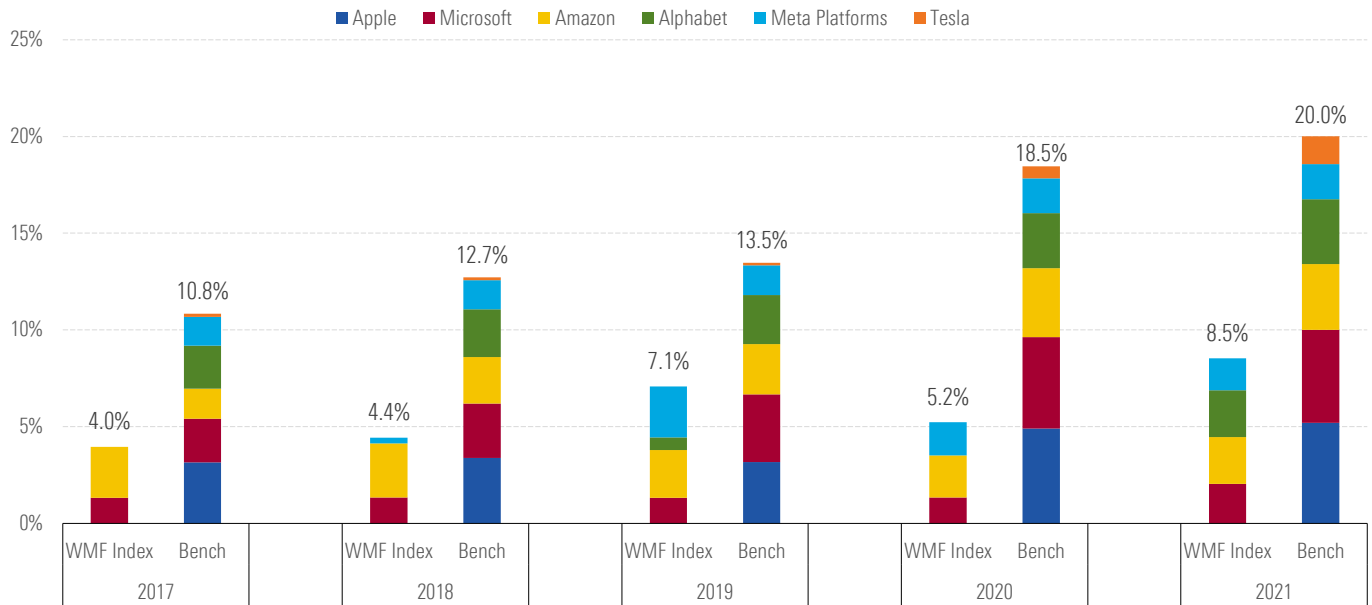
**Exhibit 12** 2021 Big Tech Total Returns and Weightings in Benchmark

Company	2021 Total Return %	WMFI Index Weighting %	Benchmark Weighting %
Apple	34.7%	-	5.2%
Microsoft	52.5%	2.0%	4.8%
Amazon.com	2.4%	2.4%	3.4%
Meta Platforms	23.1%	1.7%	1.8%
Alphabet Inc (Class A)	65.3%	2.4%	1.7%
Alphabet Inc (Class C)	65.2%	-	1.6%
Tesla	49.8%	-	1.4%
<b>Combined Weighting:</b>		<b>8.5%</b>	<b>20.0%</b>
	<b>2021 Total Return %</b>		
Morningstar US Market Index	25.8%		
Morningstar Wide Moat Focus Index	24.8%		

Source: Morningstar Direct.  
Total return data from Jan. 1, 2021, to Dec. 31, 2021.  
Weighting data reflective of annual average weighting.

While the index's weighting in this basket of Big Tech stocks has increased in recent years, its weighting in the benchmark has increased by a greater magnitude, having nearly doubled. For the index, this has led to a growing underweight position over time, although this underweight position contracted slightly in 2021 versus 2020. The Big Tech basket's weighting in the benchmark reached 20.0% at year-end 2021, up from 10.8% at year-end 2017.

**Exhibit 13** The Big Tech Basket Now Accounts For A 20% Weighting in the Morningstar US Market Index



Source: Morningstar Direct.  
 Benchmark: Morningstar US Market Index.  
 Data reflective of annual average weightings.

For more information on index and benchmark weightings for individual stocks in the Big Tech basket over the past five years, please see Exhibit 1A in the Appendix.

**The Index Is Likely to Remain Underweight "Big Tech"**

The index's underweight position in Big Tech stocks has become structural in nature. This holds true for three main reasons.

First, only four of the six stocks within the basket currently have a wide economic moat rating. Apple and Tesla command only a narrow moat rating, thereby excluding them from the index. Apple's exclusion is particularly noteworthy from a relative weighting perspective, as it accounted for the largest single position in the benchmark at a 5.2% weighting, on average, over the course of 2021.

Second, the index is equal-weighted. Even if the four wide moat-rated stocks from this basket were each held at a full approximately 2.5% weighting, the portfolio would remain materially underweight the overall basket stocks at a roughly 10% combined weighting versus the benchmark's 20% combined weighting for the group. We'd also note that in 2021, on average, Apple, Microsoft, Amazon, and Alphabet (classes A and C combined) each commanded a benchmark weighting above the approximately 2.5% full weighting that they could conceivably have in the index. Phrased differently, even a full weighting in any one of these four stocks would represent a relative underweight position in that stock, given its outside representation in the benchmark. On the other side of the coin, Meta

Platforms and Tesla had benchmark weightings of "only" 1.8% and 1.4%, on average, in 2021, meaning that the index could theoretically be overweight these stocks if they were held at a full ~2.5% weighting.

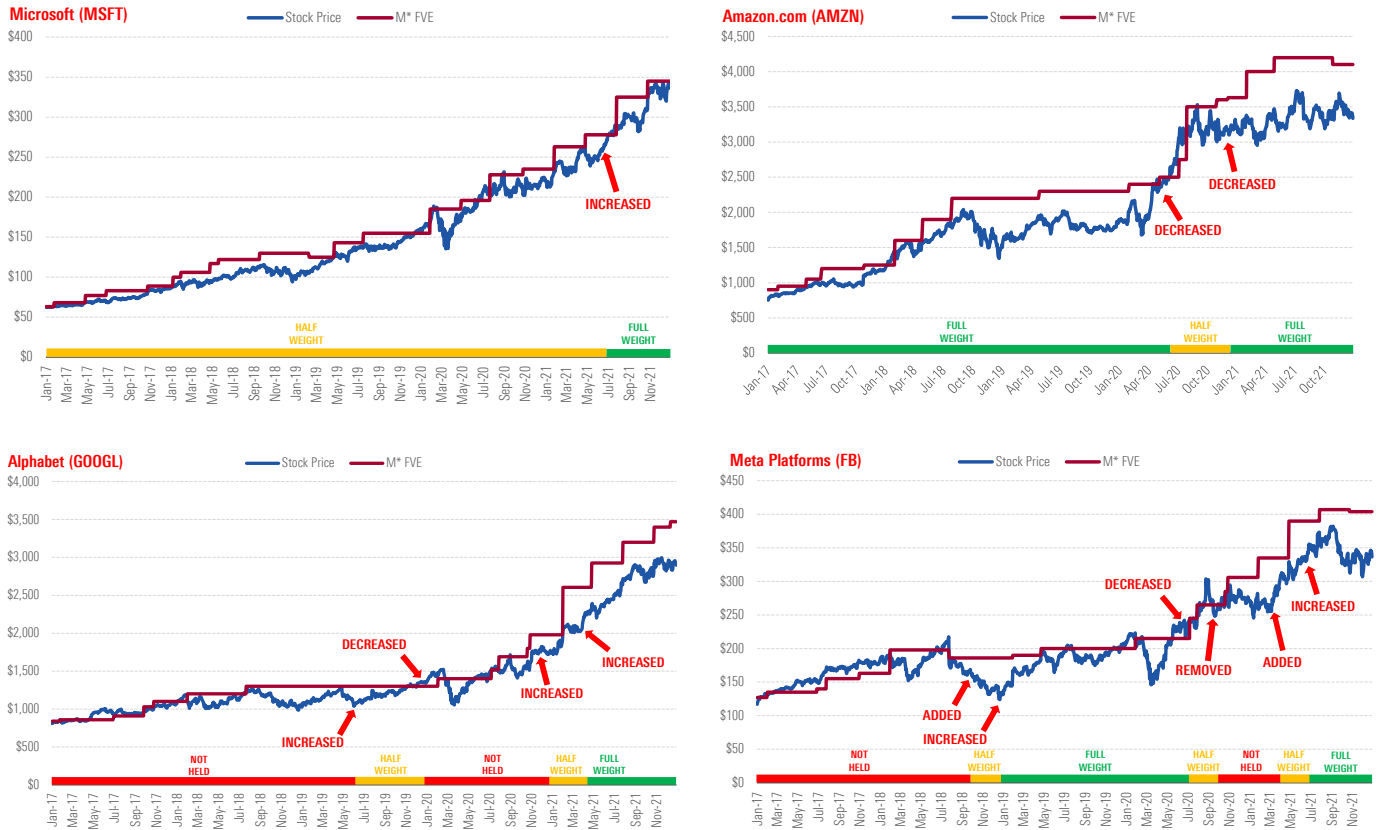
Third, a wide economic moat rating is only the first criterion that needs to be met for a company to be held in the index. To become a constituent, a stock must also pass the valuation screen, based on its market price relative to the fair value estimate assigned by Morningstar equity analysts. Of the roughly 140 U.S. wide-moat-rated stocks eligible for potential index inclusion at year-end 2021, the index held 46 stocks.

### **Big Tech Valuations Have Limited Their Representation in the Index**

The index's focus on valuation has proven opportunistic in helping increase Big Tech exposure when valuations are attractive and reduce exposure amid lofty valuations. This dynamic has helped offset what would otherwise be a very pressing headwind from being consistently underweight a group of stocks that has performed so well in recent years.

Although Microsoft, Amazon, Alphabet, and Meta Platforms have each been held at one time or another over the last five years, there have only been two stretches in which all four stocks were concurrent index holdings (June 2019 to December 2019 and June 2021 to the present day). This is because, as a group, they have rarely passed the index's valuation screen at the same time. In recent years, Alphabet and Meta Platforms have moved in and out of the index while Microsoft and Amazon have remained in the index for the full period (although not always at a full weighting).

**Exhibit 14** The Index's Valuation Screen Has Limited the Concurrent Ownership of Microsoft, Amazon, Google, and Meta Platforms

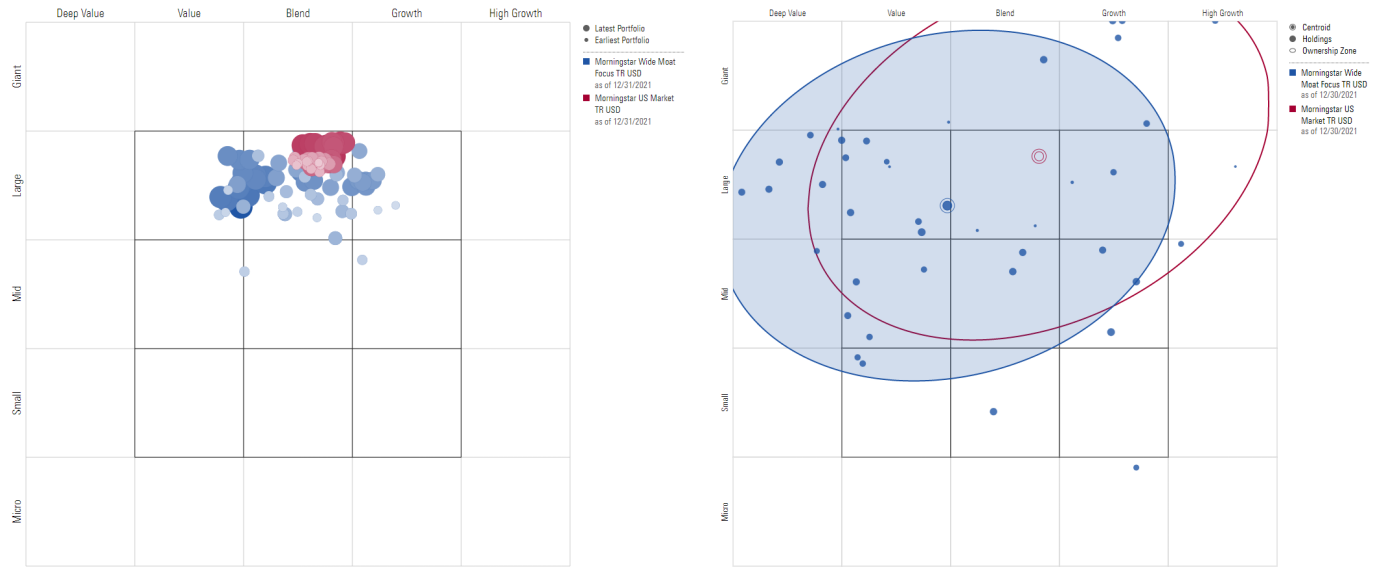


Source: Morningstar Direct. Data from Jan. 1, 2017, to Dec. 31, 2021.

**The Index's Style Bias Toward "Value" in 2021 Had Little Impact on Excess Returns**

While the index has typically operated in the large-cap core style box since its February 2007 live inception date, it has sometimes exhibited a value bias and other times a growth bias. In 2021, a modest bias toward value remained in place, largely consistent with the index's positioning over the past five years.

**Exhibit 15** Index Historical and Year-End Size/Style Positioning



Source: Morningstar Direct. Data from March 1, 2007, to Dec. 31, 2021.  
 Benchmark: Morningstar US Market Index.

However, this style bias toward value at the expense of growth had a limited impact on performance relative to the benchmark in 2021, representing only a modest drag.

**Exhibit 16** Performance Attribution by Style Box

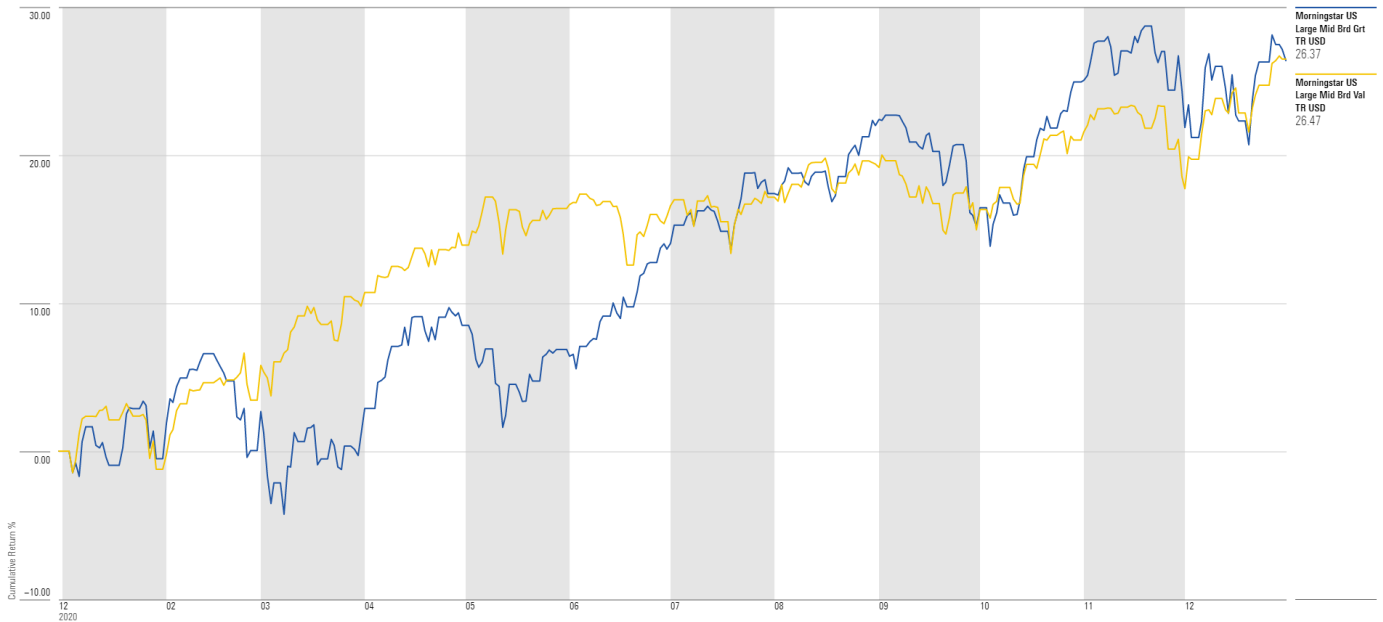
	Weights %			Return %		Contribution %		Attribution %		
	Portfolio	Benchmark	Difference	Portfolio	Benchmark	Portfolio	Benchmark	Allocation Effect %	Selection Effect %	Excess Return %
Large Value	35.65	17.46	18.19	21.95	22.61	8.43	3.92	-0.28	-0.01	-0.29
Mid Value	6.88	5.41	1.47	5.99	22.64	0.25	1.19	-0.19	-1.32	-1.51
Small Value	3.89	1.96	1.92	2.33	11.15	0.45	0.20	0.02	-0.28	-0.26
<b>Value</b>	<b>46.42</b>	<b>24.84</b>	<b>21.58</b>					<b>-0.46</b>	<b>-1.60</b>	<b>-2.07</b>
Large Blend	14.06	19.80	-5.74	38.49	31.30	5.47	6.16	-0.06	0.98	0.91
Mid Blend	14.54	8.83	5.71	23.67	26.79	3.48	2.34	0.07	-0.46	-0.38
Small Blend	2.51	2.95	-0.44	37.21	8.64	0.90	0.26	0.09	0.75	0.84
<b>Blend</b>	<b>31.11</b>	<b>31.58</b>	<b>-0.47</b>					<b>0.09</b>	<b>1.27</b>	<b>1.37</b>
Large Growth	17.11	34.98	-17.87	31.08	31.34	4.97	10.94	-0.74	-0.48	-1.22
Mid Growth	2.98	5.97	-2.98	14.92	14.72	0.61	0.90	0.35	0.16	0.51
Small Growth	2.38	1.91	0.47	-14.24	-3.41	-0.45	-0.09	-0.11	-0.40	-0.51
<b>Growth</b>	<b>22.47</b>	<b>42.86</b>	<b>-20.38</b>					<b>-0.49</b>	<b>-0.73</b>	<b>-1.22</b>
Unclassified	0.00	0.73	-0.73	-	0.39	-	0.01	0.20	-	0.20
<b>Attribution Total</b>	<b>100</b>	<b>100</b>		<b>24.11</b>	<b>25.83</b>	<b>24.11</b>	<b>25.83</b>	<b>-0.66</b>	<b>-1.06</b>	<b>-1.71</b>
								<b>Reported Excess Return:</b>	<b>-0.97</b>	

\*\*\* Reported returns for the index and benchmark were 24.81% and 25.78%, respectively, after accounting for residuals.

Source: Morningstar Direct.  
 Benchmark: Morningstar US Market Index.  
 Data from Jan. 1, 2021 to Dec. 31, 2021.

As shown in Exhibit 17, the Morningstar US Large-Mid Cap Broad Value Index (yellow) soundly outperformed the Morningstar US Large-Mid Cap Broad Growth Index (blue) in the first quarter of the year, but the gap had closed by the end of the second quarter and remained fairly tight over the second half of the year.

**Exhibit 17** "Value" Performed Roughly in Line With "Growth" in 2021



Source: Morningstar Direct.  
Data from Jan. 1, 2021 to Dec. 31, 2021.

We'd note that the index's portfolio reconstitution process is entirely rules-based with no manual involvement after analyst-driven economic moat ratings and fair value estimates are established. Therefore, the style bias exhibited by the index at any given time solely reflects the result of the bottom-up valuation analysis of individual companies provided by Morningstar equity analysts rather than any form of top-down portfolio construction. For this same reason, the index's style bias is always subject to change and could, theoretically, change quite a bit from year to year.

### Conclusion

Although the Morningstar Wide Moat Focus Index's performance fell just shy of the benchmark in 2021, its attractive long-term track record remains very much intact. The strategy has enjoyed favorable up and down capture ratios and impressive risk-adjusted returns over its nearly 15-year live track record.

Results in 2021 were challenged by adverse stock selection, an underweight loading to the "momentum" factor, and an underweight position in Big Tech stocks. Given the use of active inputs provided by Morningstar equity analysts tied to valuation and economic moat ratings, the index will undoubtedly underperform its benchmark from time to time. However, its disciplined approach in identifying

attractively priced companies with durable competitive advantages has historically proven effective. We believe the index's construction methodology represents a simple and timeless approach toward the goal of outperforming the broader U.S. equity market. ■■■

## Appendix

**Exhibit 1A** Average Annual "Big Tech" Weightings: WMFI vs. Benchmark (trailing 5-Yr)

		Apple	Microsoft	Amazon	Alphabet (A & C)	Meta Platforms	Tesla	Combined "Big Tech"
<b>2017</b>	WMF Index Weight%	-	1.3%	2.6%	-	-	-	4.0%
	Benchmark Weight %	3.2%	2.3%	1.5%	2.2%	1.5%	0.2%	10.8%
	<b>WMF Index Relative Weight %</b>	<b>-3.2%</b>	<b>-0.9%</b>	<b>1.1%</b>	<b>-2.2%</b>	<b>-1.5%</b>	<b>-0.2%</b>	<b>-6.9%</b>
<b>2018</b>	WMF Index Weight%	-	1.3%	2.8%	-	0.3%	-	4.4%
	Benchmark Weight %	3.4%	2.8%	2.4%	2.5%	1.5%	0.2%	12.7%
	<b>WMF Index Relative Weight %</b>	<b>-3.4%</b>	<b>-1.5%</b>	<b>0.4%</b>	<b>-2.5%</b>	<b>-1.2%</b>	<b>-0.2%</b>	<b>-8.3%</b>
<b>2019</b>	WMF Index Weight%	-	1.3%	2.5%	0.7%	2.6%	-	7.1%
	Benchmark Weight %	3.2%	3.5%	2.6%	2.5%	1.5%	0.1%	13.5%
	<b>WMF Index Relative Weight %</b>	<b>-3.2%</b>	<b>-2.2%</b>	<b>-0.1%</b>	<b>-1.9%</b>	<b>1.1%</b>	<b>-0.1%</b>	<b>-6.4%</b>
<b>2020</b>	WMF Index Weight%	-	1.3%	2.2%	-	1.7%	-	5.2%
	Benchmark Weight %	4.9%	4.7%	3.6%	2.8%	1.8%	0.6%	18.5%
	<b>WMF Index Relative Weight %</b>	<b>-4.9%</b>	<b>-3.4%</b>	<b>-1.4%</b>	<b>-2.8%</b>	<b>-0.1%</b>	<b>-0.6%</b>	<b>-13.2%</b>
<b>2021</b>	WMF Index Weight%	-	2.0%	2.4%	2.4%	1.7%	-	8.5%
	Benchmark Weight %	5.2%	4.8%	3.4%	3.4%	1.8%	1.4%	20.0%
	<b>WMF Index Relative Weight %</b>	<b>-5.2%</b>	<b>-2.8%</b>	<b>-1.0%</b>	<b>-0.9%</b>	<b>-0.2%</b>	<b>-1.4%</b>	<b>-11.5%</b>

Source: Morningstar Direct.

Data from Jan. 1, 2017, to Dec. 31, 2021.

Benchmark: Morningstar US Market Index.

**Exhibit 1B** Index Holdings at Year-End 2021

Name	Ticker	Sector	Weight %	Name	Ticker	Sector	Weight %
Constellation Brands Inc Class A	STZ	Consumer Defensive	2.76	Polaris Inc	PII	Consumer Cyclical	2.35
Aspen Technology Inc	AZPN	Technology	2.74	Guidewire Software Inc	GWRE	Technology	2.35
Tyler Technologies Inc	TYL	Technology	2.66	Boeing Co	BA	Industrials	2.33
Cheniere Energy Inc	LNG	Energy	2.64	The Western Union Co	WU	Financial Services	2.28
Berkshire Hathaway Inc Class B	BRK.B	Financial Services	2.64	Zimmer Biomet Holdings Inc	ZBH	Healthcare	2.28
Microsoft Corp	MSFT	Technology	2.63	Biogen Inc	BIIB	Healthcare	2.22
Blackbaud Inc	BLKB	Technology	2.62	Veeva Systems Inc Class A	VEEV	Healthcare	2.19
Dominion Energy Inc	D	Utilities	2.61	Compass Minerals International Inc	CMP	Basic Materials	2.19
Corteva Inc	CTVA	Basic Materials	2.60	Medtronic PLC	MDT	Healthcare	2.12
Merck & Co Inc	MRK	Healthcare	2.60	Ch Robinson Worldwide Inc	CHRW	Industrials	1.50
Bristol-Myers Squibb Co	BMJ	Healthcare	2.58	Lam Research Corp	LRCX	Technology	1.44
Lockheed Martin Corp	LMT	Industrials	2.57	KLA Corporation	KLAC	Technology	1.43
Equifax Inc	EFX	Industrials	2.56	Mercadolibre Inc	MELI	Consumer Cyclical	1.38
Kellogg Co	K	Consumer Defensive	2.56	Microchip Technology Inc	MCHP	Technology	1.36
Gilead Sciences Inc	GILD	Healthcare	2.54	Coca-Cola Co	KO	Consumer Defensive	1.33
Altria Group Inc	MO	Consumer Defensive	2.52	Roper Technologies Inc	RDP	Industrials	1.30
Campbell Soup Co	CPB	Consumer Defensive	2.51	Comcast Corp Class A	CMCSA	Communication Services	1.27
Wells Fargo & Co	WFC	Financial Services	2.50	Honeywell Intl Inc	HON	Industrials	1.26
Alphabet Inc Class A	GOOGL	Communication Services	2.47	Walt Disney Co	DIS	Communication Services	1.25
Philip Morris International Inc	PM	Consumer Defensive	2.46	Raytheon Technologies Corp	RTX	Industrials	1.25
Emerson Electric Co	EMR	Industrials	2.43	ServiceNow Inc	NOW	Technology	1.21
Intel Corp	INTC	Technology	2.42				
Salesforce.com Inc	CRM	Technology	2.39				
Meta Platforms Inc Class A	FB	Communication Services	2.37				
Amazon.com Inc	AMZN	Consumer Cyclical	2.36				

Source: Morningstar Direct.

Data as of Dec. 31, 2021.



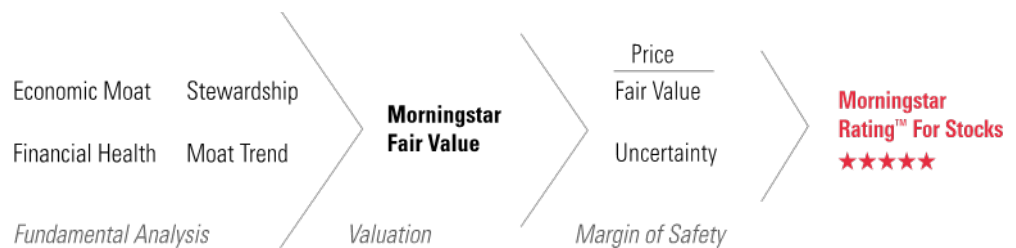
## Research Methodology for Valuing Companies

### 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 (for example, 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 (or ROIC) over and above our estimate of a firm's cost of capital, or weighted average cost of capital (or 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 the firm's 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 when 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 five 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, or EBI, and the net new investment, or 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, or 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.

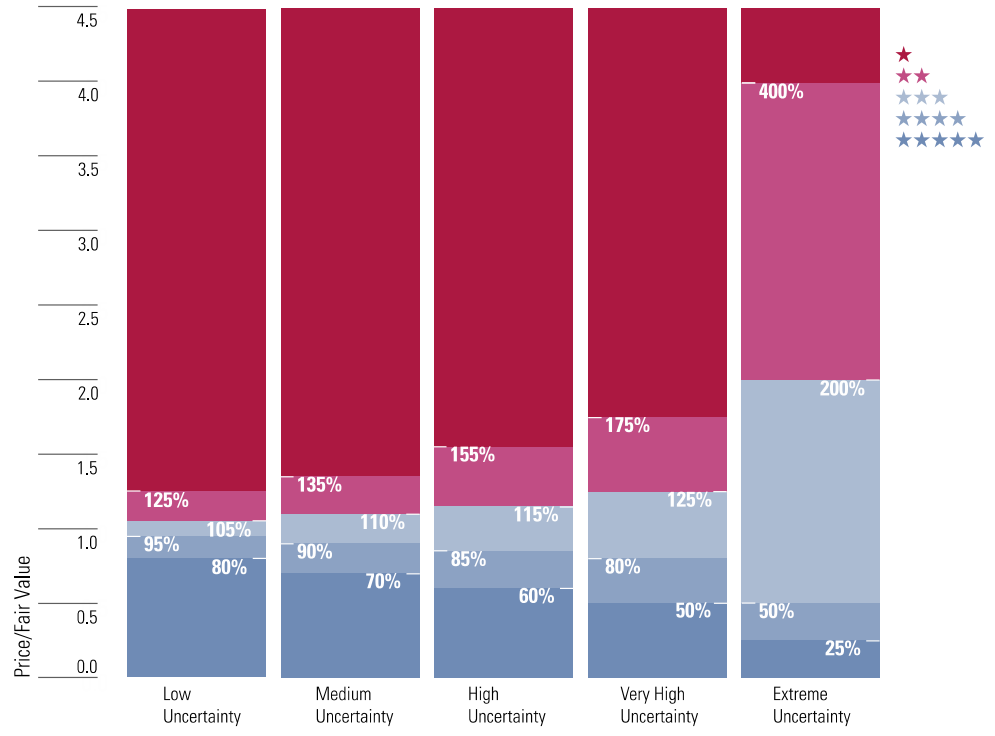
Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case, and a 25% probability that the company will perform worse than 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 of 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 25% premium.
- ▶ Medium—margin of safety for 5-star rating is a 30% discount and for 1-star rating is 35% premium.
- ▶ High—margin of safety for 5-star rating is a 40% discount and for 1-star rating is 55% premium.
- ▶ Very High—margin of safety for 5-star rating is a 50% discount and for 1-star rating is 75% premium.
- ▶ Extreme—margin of safety for 5-star rating is a 75% discount and for 1-star rating is 300% premium.

Morningstar Equity Research Star Rating Methodology



**Market Price**

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

For more details about our methodology, please go to <https://shareholders.morningstar.com>.

**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 re-calculated 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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