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# 2021 U.S. Fund Fee Study

## Fund fees keep getting squeezed.

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### Morningstar Manager Research

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### Executive Summary

In 2021, the average expense ratio paid by fund investors was less than half of what it was two decades ago. Between 2001 and 2021, the asset-weighted average fee fell to 0.40% from 0.87%. Investors have saved billions in fund fees as a result.

There are several factors that have driven fees lower. Investors are increasingly aware of the importance of minimizing investment costs, which has led them to favor lower-cost funds. Intensifying competition among asset managers has resulted in many cutting fees to vie for market share. Changes in the economics of advice have also played a critical role. The move toward fee-based models of charging for financial advice has been a key driver of the shift toward lower-cost funds, share classes, and fund types—most notably exchange-traded funds. Investors employing a fee-based advisor may not be pocketing the difference from lower fund fees but redirecting those dollars to cover the price of advice.

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### Key Takeaways

- ▶ The average expense ratio paid by fund investors has been falling for over two decades. In 2021, the asset-weighted average expense ratio of all U.S. open-end mutual funds and exchange-traded funds was 0.40%, compared with 0.87% in 2001.
- ▶ The asset-weighted average expense ratio fell to 0.40% in 2021 from 0.42% in 2020. As a result, we estimate investors saved nearly \$6.9 billion in fund expenses last year.
- ▶ The asset-weighted average expense ratio for active funds fell to 0.60% in 2021 from 0.63% in 2020, driven mainly by large net outflows from expensive funds and share classes and, to a lesser extent, inflows to cheaper ones.
- ▶ The asset-weighted average expense ratio for passive funds remained steady at 0.12% in 2021.
- ▶ The equal-weighted average expense ratio—which indicates what funds charge irrespective of where assets are held—fell to 0.96% in 2021 from 0.99% in 2020. Active funds' equal-weighted fees declined to 1.03% from 1.06%, while the equal-weighted average fee among passive funds dropped to 0.55% from 0.57%.
- ▶ In 2021, the cheapest 20% of funds saw net inflows of \$1.05 trillion, with the remaining 80% amassing just \$57 billion in inflows—the first year of collective inflows for pricier funds since 2013. The cheapest 5% of funds alone received \$648 billion of inflows.
- ▶ The line that separates the cheapest 10% of funds from the rest has fallen 46% over the past 15 years, while the line between the most expensive 10% and the rest has come down 18%.
- ▶ The evolution of the economics of the advice business is shaping flows and fees. Looking through the lens of Morningstar's service fee arrangement attribute, we can see that bundled

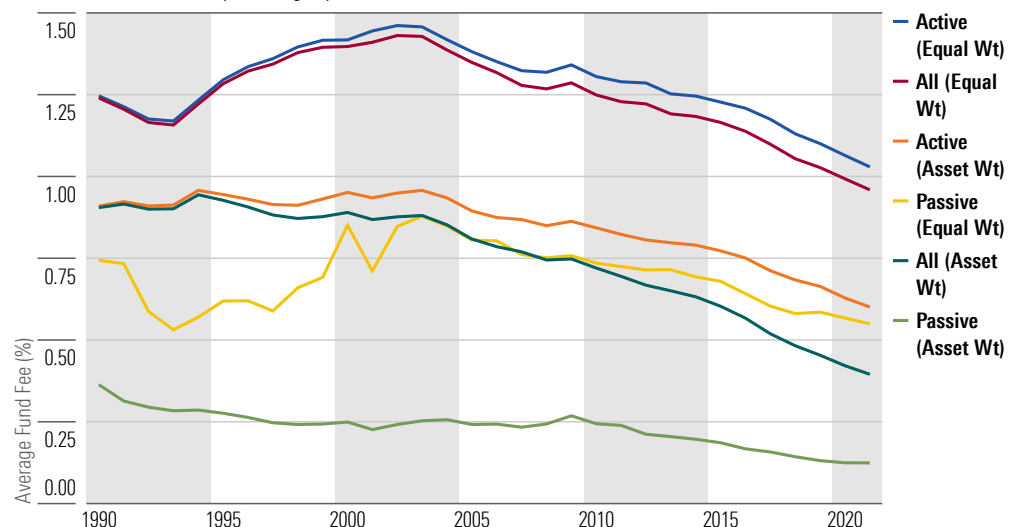
share classes have been in outflows for 12 of the past 14 years, while semibundled and unbundled share classes have seen steady inflows. Fee-based advisors prefer these funds and share classes as they make room for the price of advice.

- ▶ Investors in sustainable funds are paying a “greenium” relative to investors in conventional funds. This is evidenced by these funds’ higher asset-weighted average expense ratio, which stood at 0.55% at the end of 2021 versus 0.39% for their traditional peers. That said, this “greenium” has been shrinking steadily in recent years and reached its lowest level on record in 2021.
- ▶ Strategic-beta funds are an alternative to higher-cost actively managed funds. In 2021, the asset-weighted average fee for strategic-beta funds was 0.17%, which was slightly higher than the figure for traditional index funds (0.12%) but significantly lower than for active funds (0.60%).
- ▶ Although its competition continues to gain ground, Vanguard still claims the lowest asset-weighted average expense ratio among asset managers, which was 0.08% in 2021.

### Trends in Fund Fees Paid by Investors

Investors paid lower fund expenses in 2021 than ever before. Our study of U.S. open-end mutual funds and exchange-traded funds found the asset-weighted average expense ratio across funds was 0.40% in 2021, a 5% decline from 2020. This is the fourth-largest year-over-year decline we have recorded dating back to 1991. Consequently, we estimate that investors saved nearly \$6.9 billion in fund expenses last year. This fee decline is a big positive for investors because fees compound over time and diminish returns. Compounding investors’ 2021 fund fee savings at a rate of 4.1% over the next 10 years would equate to \$10.3 billion more in investors’ pockets come 2032.<sup>1</sup>

**Exhibit 1** Fund Fees Keep Getting Squeezed



Source: Morningstar Direct. Data as of Dec. 31, 2021.

<sup>1</sup> The 10-year valuation-implied expected return for a 60/40 stock/bond portfolio based on Morningstar Investment Management LLC’s forecasts of corporate and economic fundamentals as of March 31, 2022.

In this study, we examine the trend in fund expenses paid by investors using the asset-weighted average expense ratio as our measure. The asset-weighted average is a better measure of the average costs borne by fund investors than an equal-weighted average because it approximates what investors paid, on average, for the funds they invested in rather than what funds charged, on average. For example, for active U.S. equity funds, the asset-weighted average expense ratio was 0.63% in 2021. The equal-weighted average expense ratio for this group was 1.05%. Funds with expense ratios above 1.05% accounted for approximately 6.7% of assets invested in active U.S. equity funds at the end of 2021. Clearly, the equal-weighted average does not reflect most investors' experience.

Declines in asset-weighted average fees were more pronounced among actively managed funds in 2021 thanks to a combination of inflows into low-cost funds, outflows from more costly ones, and fee cuts. In aggregate, the asset-weighted expense ratio for actively managed funds declined 4.4% from 2020. U.S. equity funds exhibited the largest declines among passive funds, as their asset-weighted average fees fell 9.4% to reach 0.08%.

**Exhibit 2** Investors' Average Fund Costs as Represented by Asset-Weighted Average Fees

	Asset-Weighted Average Fees (%)									
	Active					Passive				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
U.S. Equity	0.72	0.69	0.67	0.66	0.63	0.11	0.10	0.09	0.09	0.08
Sector Equity	0.87	0.84	0.83	0.81	0.79	0.27	0.27	0.26	0.27	0.26
International Equity	0.85	0.81	0.79	0.75	0.72	0.24	0.21	0.19	0.18	0.18
Taxable Bond	0.58	0.57	0.56	0.52	0.47	0.13	0.12	0.10	0.10	0.09
Muni Bond	0.53	0.50	0.50	0.46	0.45	0.24	0.24	0.17	0.15	0.14
Allocation	0.69	0.66	0.64	0.61	0.59	0.54	0.52	0.48	0.42	0.44
Alternative	1.53	1.47	1.51	1.27	1.10	0.41	0.34	0.71	0.72	0.65
Commodities	0.81	0.80	0.75	0.63	0.60	0.42	0.43	0.41	0.39	0.37
<b>All Funds</b>	<b>0.71</b>	<b>0.68</b>	<b>0.66</b>	<b>0.63</b>	<b>0.60</b>	<b>0.16</b>	<b>0.14</b>	<b>0.13</b>	<b>0.12</b>	<b>0.12</b>

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 3** The Average Fees Paid for Active Funds Fell Further Than Those For Passive Ones in 2021

	Year-Over-Year % Change in Asset-Weighted Average Fees									
	Active					Passive				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
U.S. Equity	-5.7	-4.2	-2.9	-2.6	-3.9	-7.8	-8.3	-5.7	-5.5	-9.4
Sector Equity	-2.3	-4.3	-0.3	-3.4	-1.6	-2.1	-0.9	-2.8	0.4	-1.3
International Equity	-7.0	-4.5	-3.5	-4.8	-3.2	-5.6	-12.2	-7.6	-5.9	-0.2
Taxable Bond	-4.3	-2.1	-0.3	-7.1	-10.4	-2.8	-13.0	-9.7	-4.8	-7.7
Muni Bond	-3.4	-5.5	0.6	-8.2	-3.4	-3.9	-3.1	-27.3	-15.2	-7.1
Allocation	-4.8	-4.2	-3.4	-5.0	-3.4	-3.7	-4.4	-8.0	-12.5	4.4
Alternative	-7.3	-3.5	2.5	-15.5	-14.1	-6.9	-18.0	109.7	0.9	-9.3
Commodities	-5.7	-1.4	-6.7	-15.1	-5.0	1.5	2.0	-5.6	-4.6	-4.0
<b>All Funds</b>	<b>-5.2</b>	<b>-4.0</b>	<b>-2.9</b>	<b>-5.3</b>	<b>-4.4</b>	<b>-5.7</b>	<b>-9.2</b>	<b>-8.3</b>	<b>-5.1</b>	<b>-0.2</b>

Source: Morningstar Direct. Data as of Dec. 31, 2021.

### Trends in Fund Fees Charged by the Industry

The mass migration to lower-cost funds and share classes has been a key driver of falling costs. Fee cuts and the introduction of lower-cost funds and share classes have also played a role. In 2021, fee reductions by the asset-management industry for active and passive funds continued.

Changes in fees charged by asset managers are represented by trends in the equal-weighted average expense ratio, which reflect what the asset-management industry is charging for its products, regardless of fund size. Below, we calculated the equal-weighted average expense ratio for active and passive funds by Morningstar Category group. The calculations below include all share classes of all funds, excluding funds of funds and money market funds.

**Exhibit 4** Fund Fees Charged by Asset Managers as Represented by Equal-Weighted Fees

	Equal-Weighted Average Fees (%)									
	Active					Passive				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
U.S. Equity	1.17	1.12	1.11	1.08	1.05	0.47	0.45	0.45	0.44	0.44
Sector Equity	1.40	1.36	1.32	1.29	1.26	0.48	0.48	0.48	0.47	0.46
International Equity	1.31	1.24	1.22	1.19	1.15	0.53	0.50	0.51	0.50	0.47
Taxable Bond	0.94	0.91	0.89	0.87	0.84	0.27	0.24	0.23	0.23	0.22
Muni Bond	0.88	0.85	0.83	0.80	0.78	0.24	0.24	0.24	0.21	0.22
Allocation	1.17	1.13	1.11	1.07	1.05	1.03	0.94	0.97	0.99	1.01
Alternative	1.88	1.80	1.74	1.60	1.48	1.16	1.25	1.23	0.95	0.74
Commodities	1.22	1.21	1.20	1.23	1.13	0.89	0.84	0.85	0.74	0.80
<b>All Funds</b>	<b>1.17</b>	<b>1.13</b>	<b>1.1</b>	<b>1.06</b>	<b>1.03</b>	<b>0.60</b>	<b>0.58</b>	<b>0.59</b>	<b>0.57</b>	<b>0.55</b>

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 5** Five Years of Decreasing Fees for Active and Passive Funds Alike

	Year-Over-Year % Change in Equal-Weighted Average Fees									
	Active					Passive				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
U.S. Equity	-3.1	-3.6	-1.6	-2.8	-2.9	-10	-4.2	-0.2	-2.1	-1.4
Sector Equity	-2.8	-2.6	-2.9	-2.3	-2.7	-0.3	0.4	-0.7	-0.5	-3.6
International Equity	-4	-4.7	-2.3	-2.4	-2.7	-4.8	-5.4	0.5	-1.8	-5.4
Taxable Bond	-2.2	-2.5	-2.1	-2.9	-3.8	0.1	-9.9	-3.7	-0.5	-5.2
Muni Bond	-1.1	-4	-2.5	-3	-3.3	-1.2	0.7	-2.9	-8.9	0.3
Allocation	-1.9	-3.3	-1.9	-3.3	-1.7	10.6	-8.7	3.5	1.8	2.7
Alternative	-1.7	-4.4	-3.2	-7.8	-7.8	-23.2	8.3	-2.0	-23.1	-21.7
Commodities	-7.5	-0.3	-1.3	2.7	-8	-6.1	-6.1	1.4	-12.5	7.5
<b>All Funds</b>	<b>-3.5</b>	<b>-4.0</b>	<b>-2.6</b>	<b>-3.3</b>	<b>-3.4</b>	<b>-5.9</b>	<b>-3.8</b>	<b>0.8</b>	<b>-3.1</b>	<b>-3.1</b>

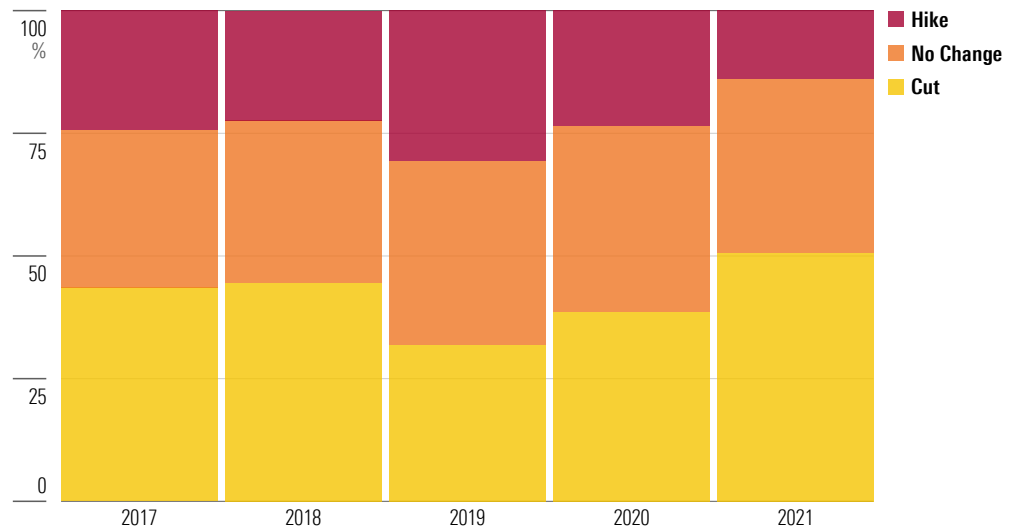
Source: Morningstar Direct. Data as of 12/31/2021.

In recent years, index mutual funds and ETFs have experienced significant fee pressure. Most notably, providers of broad-based market-capitalization-weighted index funds have been engaged in what has been dubbed a "fee war." In September 2018, this fee fighting reached what seemed at the time to be its inevitable conclusion when Fidelity launched its lineup of zero-fee index mutual funds. More recently, other asset managers have followed suit. Going forward, as fees for these funds sit either at or near zero, it is inevitable that the pace of fee declines will slow.

The fact that fees have been reduced to either nothing or next to nothing among broad-based index funds is only natural. Given these funds' commoditylike nature, it seems inevitable that their prices would be pushed down to the marginal cost of managing them and that assets would consolidate in the hands of a few large-scale manufacturers. More recently, this same degree of fee pressure has spread into other corners of the market, most notably within the realm of strategic-beta ETFs. Given that the marginal cost of managing these funds is only incrementally greater than that for their more-vanilla counterparts, this space has seen mounting fee pressure and will continue to see this in coming years. That said, there are countervailing forces to consider. There is a chance that the decline in passive funds' equal-weighted fees could even reverse in light of the proliferation of new, higher-priced index funds like thematic ETFs and mutual funds.

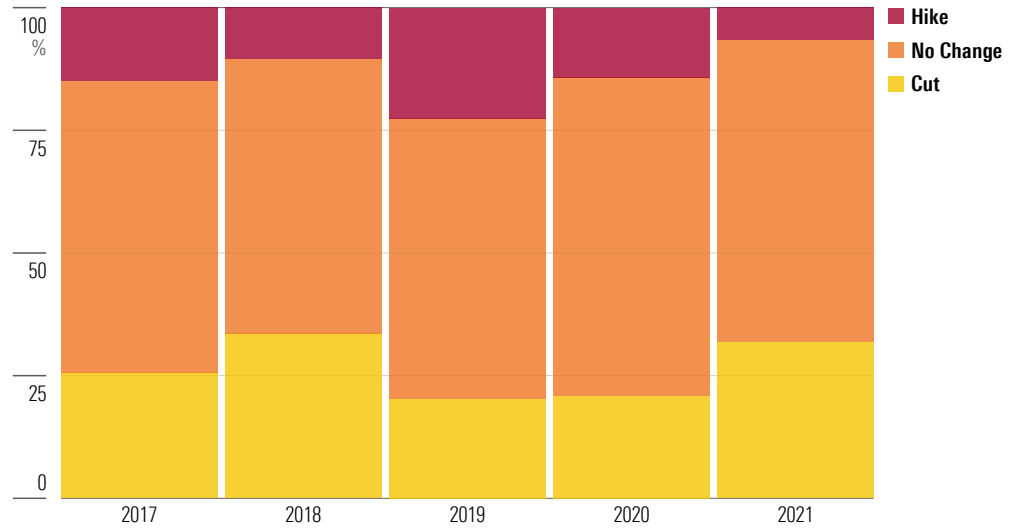
The percentage of active funds that reported lower annual expenses increased to nearly 51% in 2021 from 39% in 2020. Meanwhile, the percentage of passive funds that cut their fees jumped to 32% in 2021 from 21% in 2020.

**Exhibit 6A** Active Funds Have Been More Likely to Cut Fees in Recent Years



Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 6B** Passive Funds Have Been Less Likely to Cut Fees in Recent Years



Source: Morningstar Direct. Data as of Dec. 31, 2021.

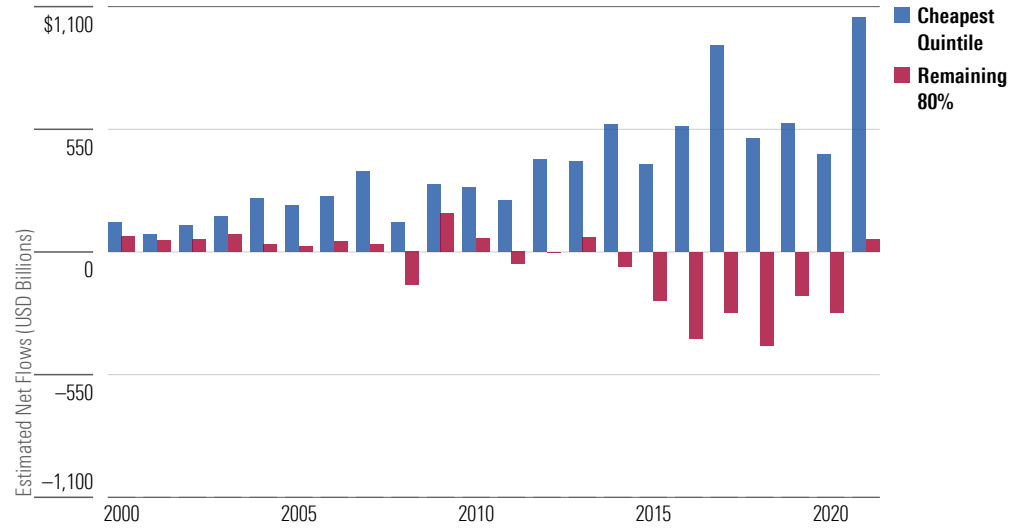
**Asset Flows Favor Lower-Cost Funds and Share Classes**

Morningstar research has demonstrated that fees are a reliable predictor of future returns. Low-cost funds generally have greater odds of surviving and outperforming their more-expensive peers.

Since 2000, net flows into funds and share classes charging fees that rank within the cheapest 20% of their Morningstar Category group have trended higher. In 2021, these funds saw net inflows of \$1.05 trillion.

Flows for the remaining 80% of funds have been negative in eight of the past 10 years. In 2021, these funds amassed \$57 billion in collective inflows—their first year of collective inflows since 2013.

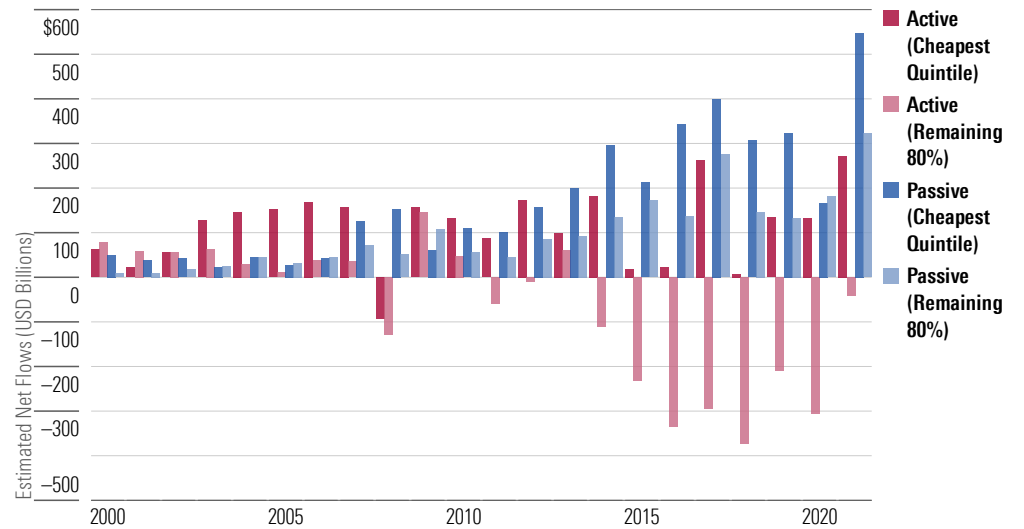
**Exhibit 7** Investors Have Long Favored Low-Cost Funds and Recently Rejected More Costly Ones



Source: Morningstar Direct. Data as of Dec. 31, 2021.

Expensive active funds have been the epicenter of outflows. During each of the past eight years, the most expensive 80% of active funds has accounted for all of the net outflows across all funds.

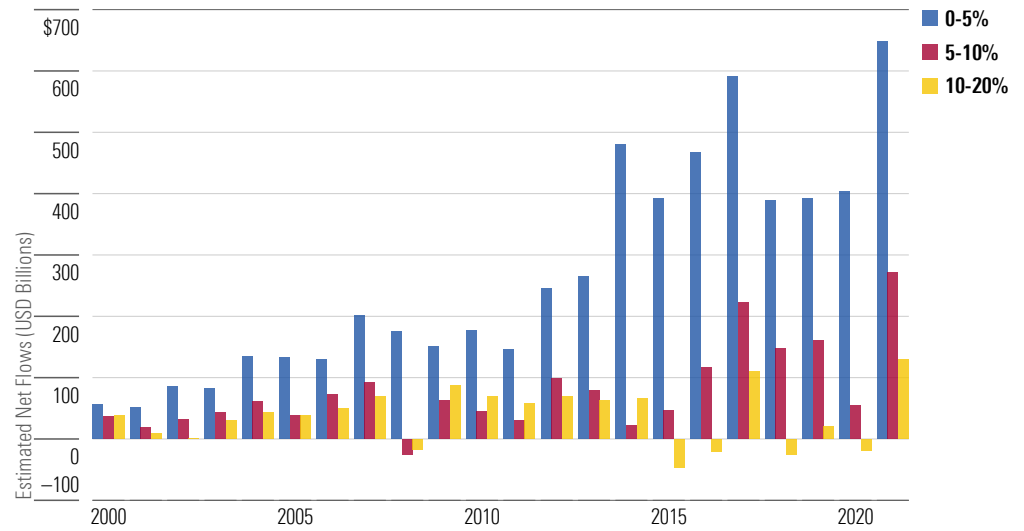
**Exhibit 8** Pricey Active Funds Are the Epicenter of Outflows



Source: Morningstar Direct. Data as of Dec. 31, 2021.

Of the \$1.05 trillion that flowed into the cheapest 20% of all funds and share classes in 2021, the majority of it went into the cheapest of the cheap. In 2021, 62% of net new money flowed into the least costly 5% of all funds.

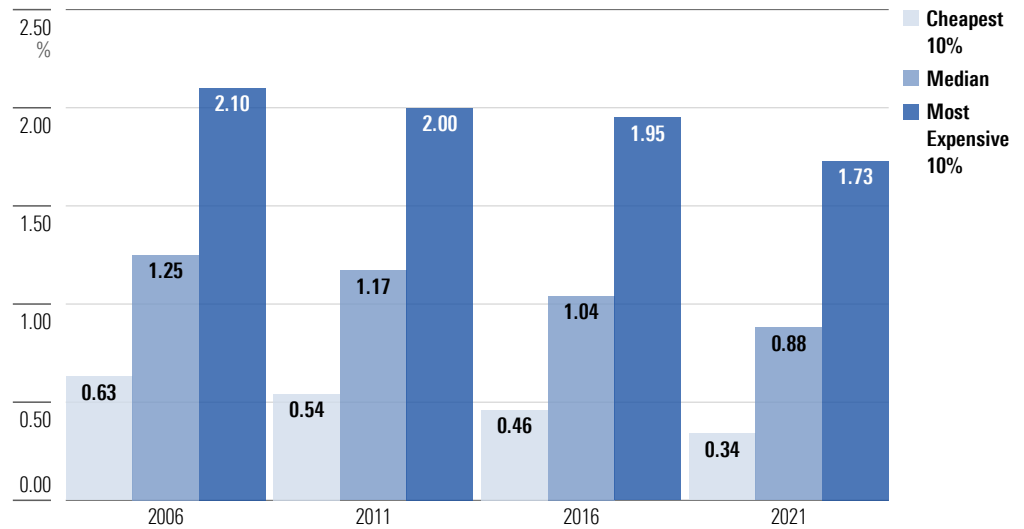
**Exhibit 9** Investors Are Pouring Into the Cheapest of the Cheap



Source: Morningstar Direct. Data as of Dec. 31, 2021.

Cheap funds have gotten significantly cheaper. Over the past 15 years, the line that separates the cheapest 10% of all funds from the rest has fallen nearly 46%. Meanwhile, fees for the most expensive funds remain stubbornly high. The dividing line between the priciest 10% of funds and the rest has come down just shy of 18% since 2006. Among U.S. stock funds, the border separating the cheapest from the rest has fallen the furthest among large-, mid-, and small-blend funds. These are categories that have seen the greatest impact from low-cost index funds and ETFs.

**Exhibit 10** Cheap Funds Are Getting Cheaper; Expensive Ones Are Trying to Gain Ground



Source: Morningstar Direct. Data as of Dec. 31, 2021.



**Exhibit 11** The Lines Between Cheap and Expensive Across the U.S. Equity Morningstar Style Box

2006				2011				2016				2021			
	Value	Blend	Growth	Value	Blend	Growth	Value	Blend	Growth	Value	Blend	Growth	Value	Blend	Growth
Large	0.71	0.45	0.79	0.67	0.41	0.74	0.51	0.27	0.63	0.38	0.16	0.46	0.83	0.74	0.88
	<b>1.23</b>	<b>1.16</b>	<b>1.32</b>	<b>1.16</b>	<b>1.11</b>	<b>1.22</b>	<b>1.00</b>	<b>0.95</b>	<b>1.07</b>	<b>1.67</b>	<b>1.53</b>	<b>1.68</b>	<b>1.67</b>	<b>1.53</b>	<b>1.68</b>
Mid	0.81	0.64	0.91	0.74	0.41	0.84	0.62	0.25	0.75	0.47	0.20	0.6	0.91	0.90	1.00
	<b>1.25</b>	<b>1.34</b>	<b>1.45</b>	<b>1.25</b>	<b>1.22</b>	<b>1.28</b>	<b>1.11</b>	<b>1.01</b>	<b>1.16</b>	<b>0.91</b>	<b>0.90</b>	<b>1.00</b>	<b>0.91</b>	<b>0.90</b>	<b>1.00</b>
Small	2.00	2.14	2.24	1.99	2.03	2.07	1.90	1.93	1.99	1.67	1.72	1.77	1.67	1.72	1.77
	0.95	0.75	1.00	0.88	0.68	0.95	0.81	0.54	0.83	0.67	0.25	0.75	1.09	0.97	1.11
	<b>1.41</b>	<b>1.36</b>	<b>1.50</b>	<b>1.36</b>	<b>1.29</b>	<b>1.40</b>	<b>1.25</b>	<b>1.16</b>	<b>1.24</b>	<b>1.90</b>	<b>1.73</b>	<b>1.90</b>	<b>1.90</b>	<b>1.73</b>	<b>1.90</b>

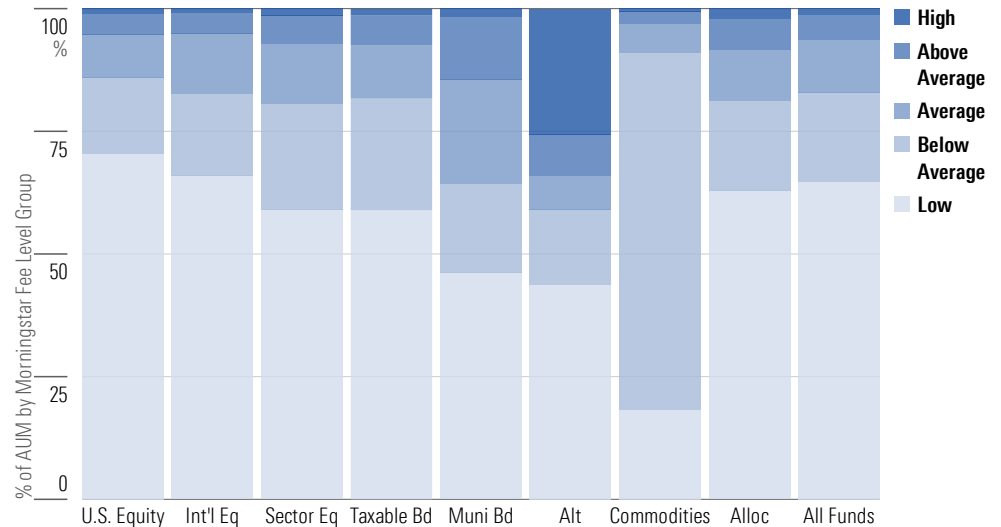
  

Legend	
	Cheapest 10%
	Median
	Most Expensive 10%

Source: Morningstar Direct. Data as of Dec. 31, 2021.

Because of these trends, most of investors' money sits in lower-priced funds. At the end of 2021, 83% of all assets were invested in open-end mutual funds and ETFs that had fees that ranked among the least-expensive 40% of their respective Morningstar Category groups. Meanwhile, just 6% of investors' money was in the most expensive 40% of funds.

**Exhibit 12** Most of Investors' Money Is in the Least Expensive Funds



Source: Morningstar Direct. Data as of Dec. 31, 2021.

**How Fund Fees Are Being Shaped by the Evolving Economics of Advice**

The evolution of the economics of the advice business is shaping flows and, by extension, fees. As advisors move away from transaction-driven compensation models and toward fee-based ones, less costly funds and share classes, those that have fewer—if any—embedded advice and/or distribution costs, are seeing more flows.

In 2018, Morningstar introduced our service-fee arrangement attribute in our U.S. funds database. This attribute classifies funds based on their service-fee arrangements between asset managers, distributors,

advisors, and investors. It aims to help investors discern how they might be paying for advice—either directly to an advisor in the form of a fee or indirectly via the fees they pay for the funds they invest in. In practice, investors might be paying for advice via some combination of the two, but this classification of funds into unbundled, semibundled, and bundled buckets is a useful means of beginning to understand what investors are getting in return for the fund fees.

The definitions of these groups are as follows:

- ▶ **Unbundled:** An investor simply pays for investment management and fund operating expenses, and the fund and its advisor do not pay third parties who sell their funds to the public. Unbundled share classes reduce conflicts, but investors still need to ask if they are paying a reasonable amount for advice and for the services that their intermediary charges them directly.
- ▶ **Semibundled:** The product charges no traditional distribution fees (or 12b-1 fees) or load-sharing but can have revenue sharing or subtransfer agency fees. Semibundled share classes could create some potential conflicts of interests that investors need to ask about.
- ▶ **Bundled:** These are traditional share classes, where the investor pays a load and a 12b-1 fee to the mutual fund, which in turn pays the intermediary. Bundled share classes are purely transactional, which can work well for sophisticated investors who have done their homework and wish to pay up-front commissions. Advice associated with these share classes may ultimately cost less.

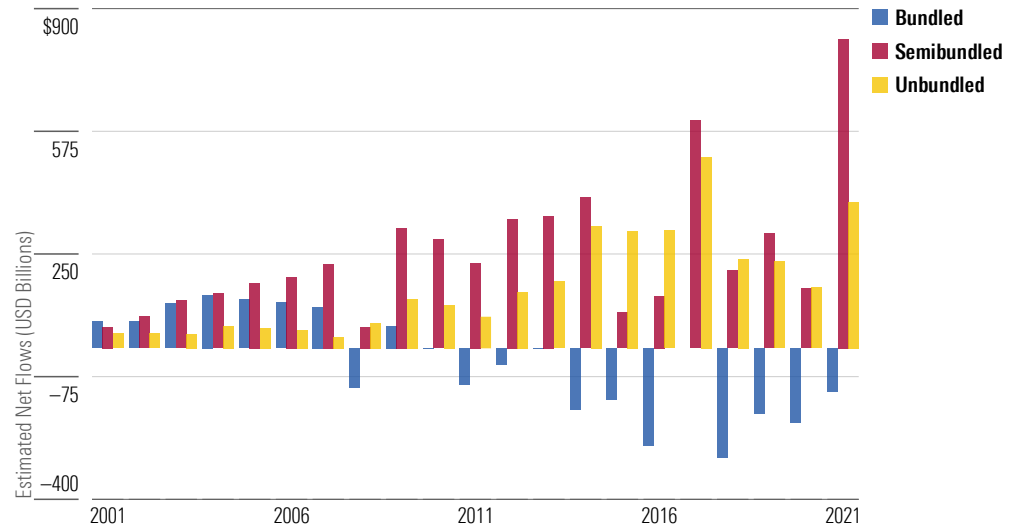
### Exhibit 13 Service-Fee Arrangements

Fee Type	Unbundled	Semibundled	Bundled
Management Fee	✓	✓	✓
Fund Operating Expenses	✓	✓	✓
Subtransfer Agency Fees	✗	✓	✓
Revenue Sharing, Platform, or Other Access Fees	✗	✓	✓
Distribution Fees (12b-1)	✗	✗	✓
Loads and Commissions	✗	✗	✓
Transactions and other Operational Fees	✗	✗	✓
Fees for Advice or Planning	✗	✗	✗

Source: Morningstar.

Looking through the lens of Morningstar's service-fee arrangement attribute, we can see that bundled share classes have been in outflows more often than not for over a decade, while semibundled and unbundled share classes have seen steady inflows. This corresponds to the shift away from transaction-driven advice models, which favor load shares, and toward fee-based ones. The result is that investment product costs are being displaced by advisor fees.

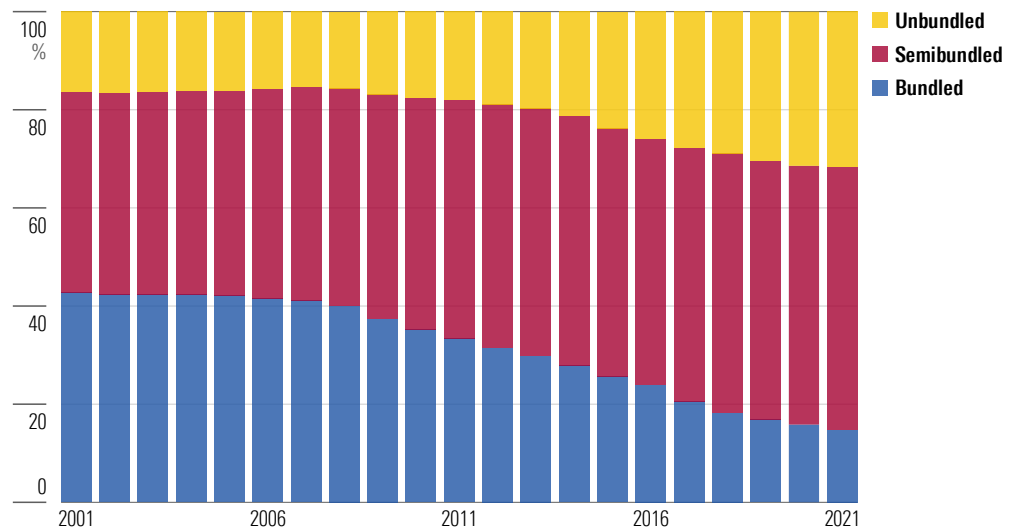
**Exhibit 14** Bundled Funds Have Seen Steady Outflows



Source: Morningstar Direct. Data as of Dec. 31, 2021.

Bundled funds and share classes have been a casualty of the move toward fee-based advice. These funds and share classes accounted for 43% of fund assets in 2001. At the end of 2021, their share had declined to 15%.

**Exhibit 15** Semibundled and Unbundled Funds and Share Classes Hold Most of Investors' Money

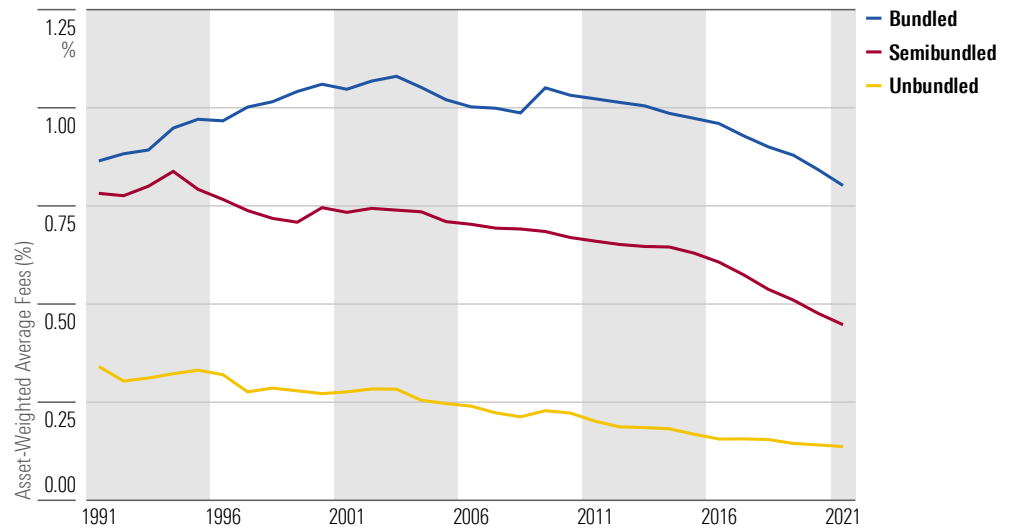


Source: Morningstar Direct. Data as of Dec. 31, 2021.

Asset-weighted fees for bundled funds and share classes ticked higher through the 1990s and peaked in 2003. As of the end of 2021, they were modestly lower than they were three decades ago. Meanwhile, asset-weighted fees in the semibundled and unbundled cohorts have trended lower over the past 30 years.

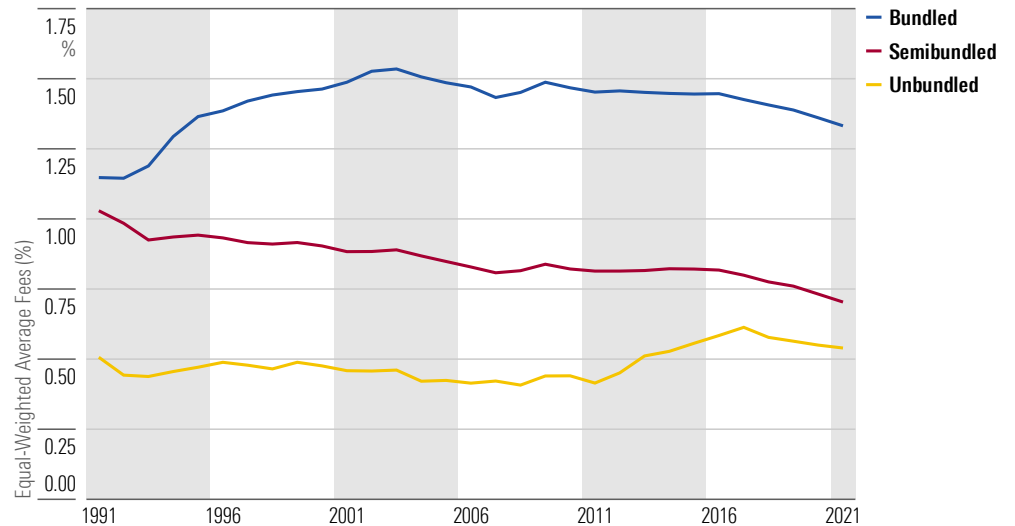
The trend in equal-weighted fees across these three service-fee arrangement segments paints a very different picture. Equal-weighted average fees for both bundled and unbundled funds and share classes were higher at the end of 2021 than they were in 1991, while the average fee charged by semibundled funds ticked gradually lower. This highlights the variety of line items present in the bundled and semibundled cohorts' expense ratios and how, in the case of many funds and share classes belonging to the semibundled group, they have been gradually stripped out or reduced.

**Exhibit 16** Asset-Weighted Average Fees by Service-Fee Arrangement



Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 17** Equal-Weighted Average Fees by Service-Fee Arrangement

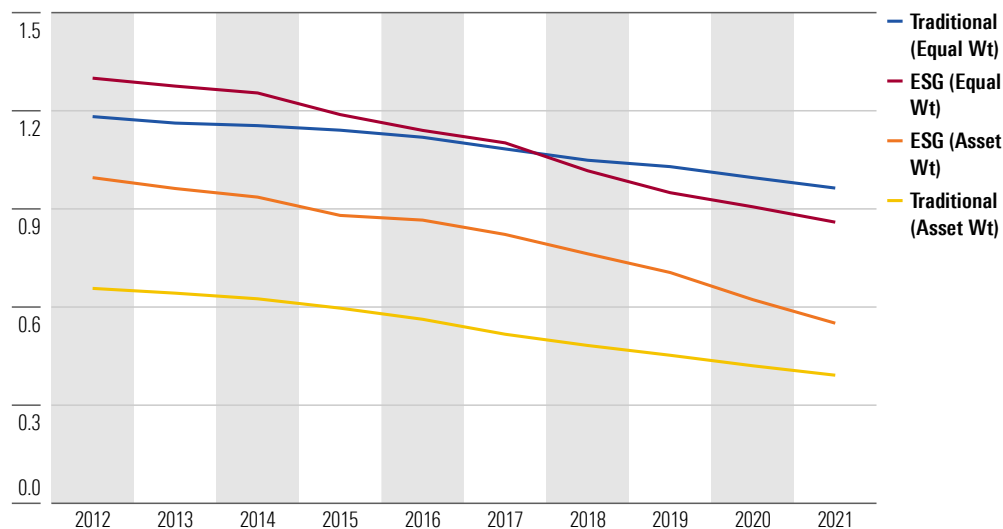


Source: Morningstar Direct. Data as of Dec. 31, 2021.

### Investors in Sustainable Funds Are Paying a “Greenium”

Investors in sustainable funds are paying a “greenium” relative to investors in conventional funds. This is evidenced by these funds’ higher asset-weighted average expense ratio, which stood at 0.55% at the end of 2021 versus 0.39% for their traditional peers. That said, sustainable funds’ fees have been falling on both an equal- and asset-weighted basis. Over the past decade, the average fee charged by sustainable funds has fallen 35%, while the average fee paid by investors in these funds has dropped 48%. This has been driven in large part by the introduction of a large number of low-fee sustainable index mutual funds and ETFs to the menu, many of which have gained favor with investors.

**Exhibit 18** ESG Intentional Funds' Fees Have Been Putting More Green Back in Investors' Wallets

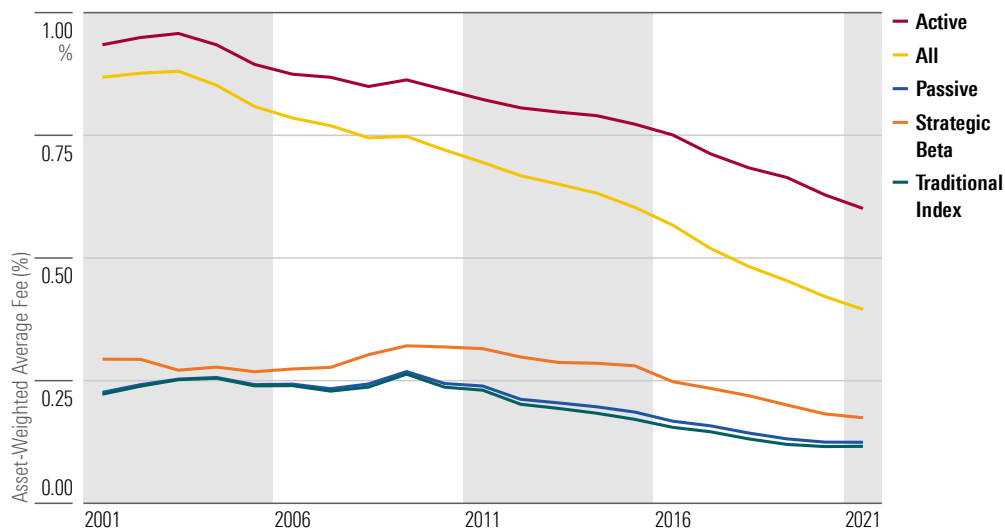


Source: Morningstar Direct. Data as of Dec. 31, 2021.

### Strategic Beta, an Attempt to Marry the Best of Both Worlds

Strategic-beta funds attempt to marry the best attributes of active and passive approaches to portfolio construction. The indexes that underpin these funds attempt to codify strategies similar to those plied by active managers and deliver them in a format that is more transparent and less costly relative to most traditional actively managed funds.

Out of 973 strategic-beta funds and share classes in Morningstar’s database, 800 had Broad Fee Level Group rankings as of the end of 2021, and 72% of those 800 carried fees that ranked within the bottom quintile relative to their Morningstar Category Group peers. At 0.17%, these funds’ asset-weighted average fee is significantly lower relative to active funds but reflects a premium versus their peers tracking more-traditional indexes. That said, this premium has narrowed in recent years as fee competition has spilled over from the realm of traditional index funds into strategic-beta ones and investors have continued to allocate the bulk of their assets to the least costly options.

**Exhibit 19** Strategic-Beta Funds Offer a Cheaper Alternative to Active Management

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Vanguard Is Still the Low-Cost Leader**

Among the ranks of the largest asset managers, Vanguard continues to own the low-cost crown. In 2021, the firm's asset-weighted expense ratio was 0.08%, down from 0.11% in 2016. Vanguard was followed by State Street Global Advisors (0.12%) BlackRock/iShares (0.25%), and Dimensional Fund Advisors (0.25%). Vanguard's competition continued to gain ground in 2021. While the firm remains the overall low-cost leader, its competitors have either matched or undercut the firm's fees for certain broad market-cap-weighted index funds. As these firms have jockeyed for position, investors have come out in front, benefiting from an ever-wider menu of ever-cheaper options offering wide market exposure.

**Exhibit 20** Fee Competition Among the Largest Asset Managers Is Intense

	Asset-Weighted Average Fees (%)			2021			
	2016	2021	Percent Change	Year End AUM (USD Bil)	Market Share (%)	Asset Growth (%)	Organic Growth Rate (%)
Vanguard	0.11	0.08	-24	7,408.16	26.43	20.44	5.88
iShares/BlackRock	0.38	0.25	-35	2,848.67	10.15	21.50	10.27
Fidelity Investments	0.58	0.34	-40	2,674.01	9.54	23.39	6.04
American Funds	0.67	0.55	-17	2,342.95	8.36	15.29	0.85
SPDR State Street Global Advisors	0.19	0.12	-38	1,108.30	3.95	31.21	11.28
T. Rowe Price	0.71	0.50	-30	851.68	3.04	10.07	-3.99
Invesco	0.85	0.58	-32	745.79	2.66	20.22	6.65
Franklin Templeton Investments	0.78	0.63	-19	535.45	1.91	5.59	-3.13
JPMorgan	0.75	0.55	-27	531.15	1.90	20.98	11.89
Dimensional Fund Advisors	0.36	0.25	-29	496.31	1.77	12.89	-2.55

Source: Morningstar Direct. Data as of Dec. 31, 2021.

## Appendix

**Exhibit 21** Asset-Weighted Average Fees by Morningstar Category

	<b>Asset-Weighted Average Fees (%)</b>				
	2017	2018	2019	2020	2021
Large Blend	0.23	0.21	0.19	0.17	0.15
Large Value	0.55	0.51	0.48	0.44	0.42
Large Growth	0.63	0.61	0.59	0.57	0.55
Mid-Cap Blend	0.32	0.30	0.23	0.21	0.24
Mid-Cap Value	0.65	0.60	0.60	0.60	0.58
Mid-Cap Growth	0.84	0.82	0.81	0.77	0.58
Small Blend	0.47	0.39	0.36	0.33	0.29
Small Value	0.64	0.63	0.59	0.58	0.54
Small Growth	0.80	0.78	0.77	0.75	0.74
Foreign Large Blend	0.41	0.34	0.29	0.26	0.24
Foreign Large Growth	0.74	0.71	0.69	0.67	0.66
Diversified Emerging Mkts	0.73	0.68	0.64	0.60	0.57
World Large-Stock Blend	0.71	0.66	0.63	0.58	0.54
Intermediate Core Bond	0.19	0.16	0.15	0.14	0.14
Intermediate Core-Plus Bond	0.53	0.49	0.51	0.49	0.45
Short-Term Bond	0.36	0.34	0.34	0.33	0.28
Ultrashort Bond	0.29	0.29	0.29	0.27	0.27
Corporate Bond	0.25	0.25	0.26	0.26	0.21
High-Yield Bond	0.67	0.63	0.63	0.58	0.55

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 22** Annual Percent Change in Asset-Weighted Average Fees by Morningstar Category

	<b>Change in Asset-Weighted Average Fees (%)</b>				
	2017	2018	2019	2020	2021
Large Blend	-12.9	-9.5	-10.8	-9.4	-11.5
Large Value	-6.7	-7.4	-5.8	-7.4	-5.4
Large Growth	-7.2	-3.2	-2.7	-3.0	-3.1
Mid-Cap Blend	-15.4	-4.3	-22.5	-9.4	12.5
Mid-Cap Value	-10.8	-8.6	0.6	0.2	-3.8
Mid-Cap Growth	-6.5	-3.1	-0.8	-4.7	-24.3
Small Blend	-13.0	-16.0	-8.2	-9.3	-10.0
Small Value	-9.4	-1.7	-5.9	-1.4	-8.0
Small Growth	-4.6	-3.0	-0.5	-2.2	-2.3
Foreign Large Blend	-10.1	-16.7	-14.1	-9.6	-7.1
Foreign Large Growth	-9.3	-4.3	-3.2	-3.1	-1.5
Diversified Emerging Mkts	-12.1	-6.9	-5.5	-5.9	-5.6
World Large-Stock Blend	-7.8	-8.0	-4.6	-6.6	-8.1
Intermediate Core Bond	-14.8	-16.1	-4.1	-6.1	-4.0
Intermediate Core-Plus Bond	-4.6	-8.2	4.5	-3.3	-7.7
Short-Term Bond	-7.4	-4.8	-1.4	-3.1	-14.8
Ultrashort Bond	-2.2	1.1	-2.9	-6.0	0.4
Corporate Bond	-8.3	0.0	4.9	-2.9	-16.5
High-Yield Bond	-4.8	-5.4	-0.4	-8.3	-5.5

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 23** Asset-Weighted Average Fees by Morningstar Category Across Active and Passive Funds

	Asset-Weighted Average Fees (%)									
	Active					Passive				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Large Blend	0.67	0.61	0.55	0.51	0.47	0.08	0.07	0.06	0.06	0.05
Large Value	0.65	0.62	0.60	0.57	0.55	0.19	0.18	0.17	0.16	0.16
Large Growth	0.71	0.70	0.69	0.69	0.68	0.17	0.17	0.16	0.15	0.16
Mid-Cap Blend	0.74	0.74	0.86	0.87	0.85	0.12	0.11	0.10	0.09	0.10
Mid-Cap Value	0.76	0.69	0.69	0.70	0.68	0.26	0.20	0.20	0.18	0.18
Mid-Cap Growth	0.91	0.89	0.89	0.84	0.81	0.22	0.22	0.21	0.20	0.09
Small Blend	0.86	0.77	0.74	0.72	0.68	0.14	0.13	0.12	0.11	0.11
Small Value	0.85	0.85	0.83	0.82	0.76	0.17	0.16	0.16	0.15	0.15
Small Growth	0.92	0.91	0.91	0.89	0.87	0.15	0.16	0.15	0.14	0.14
Foreign Large Blend	0.78	0.76	0.71	0.66	0.61	0.16	0.13	0.12	0.12	0.12
Foreign Large Growth	0.75	0.72	0.69	0.68	0.67	0.42	0.41	0.38	0.37	0.35
Diversified Emerging Mkts	0.98	0.93	0.90	0.83	0.80	0.29	0.27	0.24	0.24	0.21
World Large-Stock Blend	0.81	0.77	0.75	0.70	0.65	0.21	0.19	0.19	0.21	0.18
Intermediate Core Bond	0.41	0.36	0.35	0.32	0.32	0.06	0.06	0.05	0.05	0.05
Intermediate Core-Plus Bond	0.53	0.49	0.51	0.49	0.46	0.18	0.18	0.17	0.13	0.09
Short-Term Bond	0.45	0.43	0.43	0.42	0.36	0.09	0.08	0.06	0.06	0.05
Ultrashort Bond	0.31	0.32	0.32	0.30	0.29	0.17	0.16	0.15	0.14	0.14
Corporate Bond	0.35	0.35	0.43	0.44	0.36	0.13	0.12	0.11	0.10	0.09
High-Yield Bond	0.71	0.67	0.67	0.62	0.59	0.44	0.42	0.41	0.38	0.36

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 24** Annual Percent Change in Asset-Weighted Average Fees by Morningstar Category Across Active and Passive Funds

	Change in Asset-Weighted Average Fees (%)									
	Active					Passive				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Large Blend	-5.6	-9.0	-9.8	-7.3	-7.8	-9.6	-10.2	-5.1	-4.6	-21.2
Large Value	-4.4	-4.6	-3.2	-5.0	-3.5	-5.0	-2.2	-5.8	-5.3	-2.9
Large Growth	-5.3	-1.4	-1.4	0.0	-1.4	-3.6	-2.9	-5.2	-5.2	3.6
Mid-Cap Blend	-9.8	0.0	16.2	1.2	-2.3	-10.8	-9.1	-9.8	-8.5	8.7
Mid-Cap Value	-9.5	-9.2	0.0	1.4	-2.9	-4.7	-23.1	-0.2	-10.7	-3.0
Mid-Cap Growth	-5.2	-2.2	0.0	-5.6	-3.6	-8.1	0.7	-5.4	-3.6	-58.1
Small Blend	-6.5	-10.5	-3.9	-2.7	-5.6	-10.5	-8.3	-6.2	-4.8	-4.7
Small Value	-5.6	0.0	-2.4	-1.2	-7.3	-3.2	-0.7	-3.4	-8.0	1.0
Small Growth	-4.2	-1.1	0.0	-2.2	-2.2	-2.7	3.1	-7.4	-6.7	-1.2
Foreign Large Blend	-8.2	-2.6	-6.6	-7.0	-7.6	-2.6	-18.0	-4.0	-5.9	0.9
Foreign Large Growth	-8.5	-4.0	-4.2	-1.4	-1.5	-7.9	-4.3	-5.7	-3.2	-6.2
Diversified Emerging Mkts	-8.4	-5.1	-3.2	-7.8	-3.6	-9.9	-5.3	-11.5	-2.2	-11.9
World Large-Stock Blend	-5.8	-4.9	-2.6	-6.7	-7.1	-6.8	-7.2	-1.5	8.7	-10.5
Intermediate Core Bond	-14.6	-12.2	-2.8	-8.6	0.0	-13.9	-10.6	-7.0	-1.2	-9.9
Intermediate Core-Plus Bond	-5.4	-7.5	4.1	-3.9	-6.1	-27.2	-4.1	-5.4	-20.7	-32.3
Short-Term Bond	-6.2	-4.4	0.0	-2.3	-14.3	-2.3	-7.8	-26.6	-6.8	-5.9
Ultrashort Bond	0.0	3.2	0.0	-6.3	-3.3	-2.8	-6.0	-3.4	-6.7	-2.2
Corporate Bond	-5.4	0.0	22.9	2.3	-18.2	-7.3	-6.7	-15.0	-8.2	-11.7
High-Yield Bond	-4.1	-5.6	0.0	-7.5	-4.8	-2.2	-4.5	-2.4	-7.3	-5.3

Source: Morningstar Direct. Data as of Dec. 31, 2021.



**Exhibit 25** Equal-Weighted Average Fees by Morningstar Category

	<b>Equal-Weighted Average Fees (%)</b>				
	2017	2018	2019	2020	2021
Large Blend	0.95	0.89	0.87	0.83	0.80
Large Value	1.01	0.95	0.94	0.93	0.92
Large Growth	1.11	1.07	1.05	1.01	0.97
Mid-Cap Blend	1.04	1.01	1.01	0.95	0.93
Mid-Cap Value	1.09	1.06	1.05	1.04	0.98
Mid-Cap Growth	1.20	1.16	1.14	1.11	1.06
Small Blend	1.14	1.11	1.08	1.05	1.00
Small Value	1.24	1.20	1.20	1.17	1.15
Small Growth	1.27	1.23	1.22	1.20	1.19
Foreign Large Blend	1.02	0.97	0.95	0.92	0.92
Foreign Large Growth	1.18	1.13	1.11	1.08	1.05
Diversified Emerging Mkts	1.35	1.29	1.26	1.22	1.19
World Large-Stock Blend	1.20	1.06	1.03	1.00	0.95
Intermediate Core Bond	0.67	0.65	0.65	0.62	0.59
Intermediate Core-Plus Bond	0.84	0.81	0.79	0.76	0.74
Short-Term Bond	0.74	0.73	0.71	0.69	0.66
Ultrashort Bond	0.46	0.47	0.45	0.43	0.43
Corporate Bond	0.77	0.75	0.75	0.72	0.70
High-Yield Bond	1.03	0.98	0.97	0.94	0.91

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 26** Annual Percent Change in Equal-Weighted Average Fees by Morningstar Category

	<b>Change in Equal-Weighted Average Fees (%)</b>				
	2017	2018	2019	2020	2021
Large Blend	-4.4	-6.5	-1.8	-5.3	-2.7
Large Value	-3.9	-5.3	-1.1	-1.1	-1.5
Large Growth	-4.8	-3.7	-1.8	-3.2	-4.7
Mid-Cap Blend	-3.5	-2.9	-0.4	-5.2	-2.4
Mid-Cap Value	-3.5	-3.4	-0.8	-0.9	-5.3
Mid-Cap Growth	-3.2	-2.8	-2.0	-2.4	-4.6
Small Blend	-4.7	-3.0	-2.9	-2.7	-5.0
Small Value	-3.2	-3.1	-0.4	-2.4	-1.9
Small Growth	-3.6	-3.1	-1.1	-1.4	-1.0
Foreign Large Blend	-7.2	-4.9	-2.0	-3.4	0.0
Foreign Large Growth	-4.5	-4.3	-1.9	-2.7	-2.6
Diversified Emerging Mkts	-6.4	-4.0	-2.6	-2.9	-2.5
World Large-Stock Blend	1.3	-11.9	-2.8	-3.1	-4.9
Intermediate Core Bond	-7.6	-2.3	-0.2	-5.0	-4.9
Intermediate Core-Plus Bond	-2.6	-2.8	-2.5	-3.6	-3.4
Short-Term Bond	-4.5	-1.9	-2.1	-3.5	-3.7
Ultrashort Bond	-4.0	2.0	-4.4	-4.4	-1.8
Corporate Bond	1.2	-3.6	0.3	-3.2	-3.8
High-Yield Bond	-3.2	-4.1	-1.4	-2.8	-3.0

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 27** Equal-Weighted Average Fees by Morningstar Category Across Active and Passive Funds

	Equal-Weighted Average Fees (%)									
	Active					Passive				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Large Blend	1.10	1.03	1.02	0.96	0.93	0.41	0.40	0.40	0.40	0.39
Large Value	1.05	1.01	1.00	0.99	0.97	0.52	0.47	0.49	0.46	0.47
Large Growth	1.14	1.10	1.08	1.04	1.00	0.69	0.66	0.69	0.70	0.64
Mid-Cap Blend	1.23	1.20	1.22	1.16	1.14	0.45	0.43	0.43	0.38	0.38
Mid-Cap Value	1.13	1.09	1.08	1.08	1.04	0.60	0.74	0.66	0.63	0.45
Mid-Cap Growth	1.22	1.19	1.18	1.15	1.11	0.74	0.69	0.62	0.61	0.50
Small Blend	1.26	1.23	1.19	1.17	1.13	0.45	0.43	0.47	0.46	0.43
Small Value	1.29	1.26	1.24	1.21	1.19	0.72	0.71	0.71	0.72	0.66
Small Growth	1.29	1.25	1.24	1.22	1.21	0.68	0.65	0.65	0.63	0.61
Foreign Large Blend	1.18	1.12	1.10	1.06	1.05	0.39	0.36	0.39	0.37	0.36
Foreign Large Growth	1.19	1.15	1.12	1.10	1.07	0.72	0.44	0.46	0.43	0.44
Diversified Emerging Mkts	1.44	1.39	1.36	1.31	1.28	0.48	0.46	0.47	0.45	0.42
World Large-Stock Blend	1.29	1.13	1.10	1.06	1.01	0.51	0.51	0.50	0.43	0.38
Intermediate Core Bond	0.74	0.73	0.72	0.68	0.65	0.28	0.26	0.27	0.27	0.24
Intermediate Core-Plus Bond	0.84	0.82	0.80	0.77	0.74	0.24	0.23	0.21	0.23	0.22
Short-Term Bond	0.78	0.77	0.75	0.72	0.69	0.14	0.12	0.12	0.12	0.12
Ultrashort Bond	0.48	0.49	0.47	0.45	0.44	0.14	0.14	0.13	0.13	0.12
Corporate Bond	0.86	0.84	0.82	0.79	0.77	0.23	0.22	0.24	0.23	0.22
High-Yield Bond	1.05	1.02	1.01	0.99	0.95	0.48	0.43	0.40	0.40	0.40

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 28** Annual Percent Change in Equal-Weighted Average Fees by Morningstar Category Across Active and Passive Funds

	Change in Equal-Weighted Average Fees (%)									
	Active					Passive				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Large Blend	-2.6	-5.9	-1.8	-5.3	-3.6	-3.7	-3.9	0.1	-0.2	-2.2
Large Value	-2.7	-4.3	-0.6	-1.1	-1.7	-10.3	-9.5	3.7	-6.7	3.3
Large Growth	-3.9	-3.3	-2.2	-3.2	-4.2	-12.0	-3.8	3.1	1.6	-8.5
Mid-Cap Blend	-3.4	-2.9	1.7	-4.7	-1.9	1.1	-3.8	0.6	-11.7	-0.5
Mid-Cap Value	-3.0	-4.0	-0.5	-0.6	-3.5	-17.1	24.0	-11.5	-4.4	-29.1
Mid-Cap Growth	-3.2	-2.4	-1.5	-2.5	-2.8	-7.6	-6.3	-10.7	-2.1	-18.4
Small Blend	-3.3	-2.6	-3.0	-1.6	-3.7	-18.4	-5.6	9.7	-2.5	-5.4
Small Value	-2.4	-3.0	-1.2	-2.7	-1.6	-4.3	-1.4	0.3	0.5	-7.8
Small Growth	-3.6	-3.0	-1.1	-1.1	-0.9	-11.3	-3.9	0.0	-3.1	-4.0
Foreign Large Blend	-5.2	-4.9	-2.1	-3.3	-1.1	-15.9	-7.6	7.6	-5.0	-0.4
Foreign Large Growth	-3.6	-4.0	-2.2	-2.4	-2.3	-24.8	-38.0	3.1	-5.9	2.4
Diversified Emerging Mkts	-5.7	-3.8	-2.2	-3.1	-2.5	-7.7	-4.4	2.5	-5.4	-6.5
World Large-Stock Blend	2.4	-12.6	-2.7	-3.4	-4.2	12.2	-0.4	-2.0	-14.6	-11.7
Intermediate Core Bond	-6.7	-1.5	-1.7	-5.0	-4.9	-2.3	-7.0	5.3	-2.0	-10.7
Intermediate Core-Plus Bond	-2.5	-2.9	-2.2	-3.9	-3.2	-20.0	-3.4	-8.7	7.6	-2.0
Short-Term Bond	-3.5	-1.1	-2.4	-3.7	-4.0	-9.7	-15.0	-3.4	-2.2	4.7
Ultrashort Bond	-2.6	1.6	-4.3	-4.2	-1.3	4.7	-2.2	-11.1	1.9	-3.8
Corporate Bond	-0.6	-2.2	-3.4	-2.5	-3.0	47.1	-7.1	13.0	-6.6	-2.6
High-Yield Bond	-2.4	-3.1	-0.8	-2.4	-3.1	14.4	-12.0	-5.1	-1.7	1.3

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 29** Asset-Weighted Average Fees by Service-Fee Arrangement

	<b>Asset-Weighted Average Fees (%)</b>														
	<b>Bundled</b>					<b>Semibundled</b>					<b>Unbundled</b>				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
U.S. Equity	0.95	0.92	0.90	0.88	0.85	0.51	0.47	0.44	0.42	0.40	0.13	0.13	0.12	0.12	0.12
Sector Equity	0.68	0.61	0.58	0.53	0.45	0.68	0.66	0.65	0.64	0.61	0.21	0.21	0.19	0.19	0.18
International Equity	1.05	1.01	1.00	0.98	0.94	0.69	0.63	0.60	0.57	0.54	0.23	0.22	0.21	0.21	0.22
Taxable Bond	0.94	0.94	0.90	0.85	0.78	0.48	0.47	0.46	0.42	0.38	0.13	0.14	0.13	0.13	0.12
Muni Bond	0.84	0.84	0.85	0.78	0.77	0.49	0.46	0.48	0.44	0.43	0.12	0.13	0.13	0.13	0.13
Allocation	0.90	0.87	0.85	0.82	0.80	0.67	0.65	0.63	0.59	0.57	0.19	0.20	0.19	0.19	0.19
Alternative	1.75	1.78	1.69	1.51	1.40	1.50	1.45	1.49	1.26	1.07	1.38	1.28	1.24	0.87	0.76
Commodities	1.23	1.29	1.29	1.21	0.97	0.80	0.75	0.69	0.56	0.55	0.79	0.43	0.48	0.39	0.31
<b>All Funds</b>	<b>0.93</b>	<b>0.90</b>	<b>0.88</b>	<b>0.84</b>	<b>0.80</b>	<b>0.57</b>	<b>0.54</b>	<b>0.51</b>	<b>0.48</b>	<b>0.45</b>	<b>0.16</b>	<b>0.15</b>	<b>0.14</b>	<b>0.14</b>	<b>0.14</b>

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 30** Annual Percent Change in Asset-Weighted Average Fees by Service-Fee Arrangement

	<b>Change in Asset-Weighted Average Fees (%)</b>														
	<b>Bundled</b>					<b>Semibundled</b>					<b>Unbundled</b>				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
U.S. Equity	-3.0	-2.9	-1.7	-2.5	-3.1	-7.8	-2.9	-1.7	-2.5	-3.1	-0.6	-1.8	-6.7	-1.0	-3.1
Sector Equity	-12.4	-10.5	-4.0	-9.3	-14.5	-2.7	-10.5	-4.0	-9.3	-14.5	-3.8	-0.6	-9.3	-3.5	-5.1
International Equity	-2.4	-3.6	-1.1	-2.4	-3.8	-6.7	-3.6	-1.1	-2.4	-3.8	-6.8	-5.8	-2.6	0.3	3.7
Taxable Bond	-1.1	-0.2	-4.1	-5.7	-8.1	-1.4	-0.2	-4.1	-5.7	-8.1	5.9	5.3	-6.8	-3.0	-4.4
Muni Bond	0.4	0.2	0.1	-7.4	-1.8	-1.2	0.2	0.1	-7.4	-1.8	-0.7	8.0	2.0	-0.9	-2.3
Allocation	-3.3	-3.5	-2.6	-3.1	-3.1	-3.2	-3.5	-2.6	-3.1	-3.1	4.5	6.1	-2.0	-4.2	0.0
Alternative	-7.2	1.8	-4.7	-11.1	-7.1	-7.5	1.8	-4.7	-11.1	-7.1	12.5	-7.2	-3.0	-30.2	-11.9
Commodities	-1.5	4.8	0.4	-6.0	-20.1	-5.5	4.8	0.4	-6.0	-20.1	0.9	-46.2	13.3	-19.9	-19.4
<b>All Funds</b>	<b>-3.3</b>	<b>-3.0</b>	<b>-2.3</b>	<b>-4.2</b>	<b>-4.8</b>	<b>-5.4</b>	<b>-6.5</b>	<b>-5.0</b>	<b>-6.6</b>	<b>-6.0</b>	<b>0.2</b>	<b>-1.1</b>	<b>-6.4</b>	<b>-2.6</b>	<b>-2.8</b>

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 31** Equal-Weighted Average Fees by Service-Fee Arrangement

	<b>Equal-Weighted Average Fees (%)</b>														
	<b>Bundled</b>					<b>Semibundled</b>					<b>Unbundled</b>				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
U.S. Equity	1.40	1.38	1.37	1.35	1.32	0.79	0.76	0.75	0.73	0.71	0.58	0.55	0.53	0.53	0.53
Sector Equity	1.63	1.61	1.58	1.57	1.54	0.80	0.79	0.77	0.75	0.73	0.52	0.54	0.54	0.55	0.55
International Equity	1.55	1.51	1.50	1.47	1.44	0.88	0.85	0.84	0.82	0.79	0.82	0.73	0.70	0.71	0.71
Taxable Bond	1.20	1.19	1.18	1.16	1.14	0.60	0.59	0.58	0.56	0.53	0.45	0.45	0.44	0.42	0.40
Muni Bond	1.12	1.12	1.10	1.08	1.06	0.54	0.54	0.54	0.52	0.49	0.36	0.42	0.43	0.41	0.40
Allocation	1.43	1.42	1.40	1.36	1.34	0.84	0.82	0.82	0.80	0.78	0.59	0.57	0.59	0.58	0.58
Alternative	2.14	2.10	2.08	2.02	1.98	1.58	1.50	1.45	1.30	1.16	1.33	1.19	1.34	1.13	1.09
Commodities	1.52	1.55	1.56	1.55	1.45	0.89	0.82	0.81	0.85	0.79	0.85	0.75	0.78	0.78	0.69
<b>All Funds</b>	<b>1.43</b>	<b>1.41</b>	<b>1.39</b>	<b>1.36</b>	<b>1.33</b>	<b>0.80</b>	<b>0.78</b>	<b>0.76</b>	<b>0.73</b>	<b>0.70</b>	<b>0.61</b>	<b>0.58</b>	<b>0.56</b>	<b>0.55</b>	<b>0.54</b>

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 32** Annual Percent Change in Equal-Weighted Average Fees by Service-Fee Arrangement

	<b>Change in Equal-Weighted Average Fees (%)</b>														
	<b>Bundled</b>					<b>Semibundled</b>					<b>Unbundled</b>				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
U.S. Equity	-1.9	-1.3	-0.7	-1.9	-1.9	-3.0	-3.1	-1.0	-3.2	-3.3	1.9	-5.3	-3.0	-0.5	-0.2
Sector Equity	-1.8	-1.0	-1.8	-0.8	-2.1	-1.1	-0.9	-2.7	-2.9	-3.1	7.8	3.9	0.8	0.7	0.2
International Equity	-2.1	-2.5	-1.1	-1.5	-2.1	-2.9	-3.6	-1.5	-2.6	-2.8	7.4	-10.6	-3.8	0.8	-0.4
Taxable Bond	-0.4	-0.5	-0.7	-1.6	-1.9	-0.9	-2.5	-1.5	-3.4	-5.4	5.0	0.5	-1.9	-4.1	-5.4
Muni Bond	-1.0	0.3	-1.8	-2.1	-1.8	-1.1	-1.2	1.0	-3.8	-5.4	3.1	16.7	1.5	-5.1	-1.1
Allocation	-1.1	-1.0	-1.2	-3.1	-0.9	-1.5	-2.3	0.0	-2.7	-2.3	1.0	-2.6	2.9	-1.5	-0.7
Alternative	-2.4	-1.8	-1.1	-2.5	-2.1	-5.1	-4.7	-3.8	-10.0	-10.8	7.3	-10.4	12.2	-15.5	-3.2
Commodities	-3.0	2.1	0.4	-0.7	-6.4	-11.4	-7.8	-1.5	5.1	-6.7	10.9	-12.2	4.5	-1.0	-10.9
<b>All Funds</b>	<b>-1.5</b>	<b>-1.3</b>	<b>-1.3</b>	<b>-2.0</b>	<b>-2.1</b>	<b>-2.2</b>	<b>-3.0</b>	<b>-1.9</b>	<b>-3.7</b>	<b>-3.9</b>	<b>5.0</b>	<b>-5.8</b>	<b>-2.4</b>	<b>-2.5</b>	<b>-1.9</b>

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 33** Annual Fund and Share Class Launches by Service-Fee Arrangement

	<b>Bundled</b>	<b>Semibundled</b>	<b>Unbundled</b>
1990	58	36	4
1991	53	71	4
1992	116	100	9
1993	276	124	11
1994	268	128	10
1995	252	96	9
1996	239	230	7
1997	339	234	18
1998	301	204	18
1999	283	159	9
2000	448	273	35
2001	410	227	54
2002	582	168	8
2003	418	152	9
2004	379	226	62
2005	385	366	30
2006	538	413	33
2007	480	528	36
2008	502	572	15
2009	417	392	28
2010	551	549	81
2011	537	577	76
2012	523	699	65
2013	519	670	245
2014	642	642	114
2015	615	840	199
2016	459	750	243
2017	486	1,041	311
2018	337	785	208
2019	255	618	145
2020	217	647	75
2021	207	712	104

Source: Morningstar Direct. Data as of Dec. 31, 2021.

**Exhibit 34** Asset- and Equal-Weighted Average Fees Among ESG-Intentional Funds by Morningstar Category

	Number of Share Classes					Asset-Weight Average					Equal-Weight Average				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Diversified Emerging Markets	27	38	39	35	43	0.73	0.68	0.64	0.60	0.57	1.35	1.29	1.26	1.22	1.19
Foreign Large Blend	54	58	62	69	69	0.41	0.34	0.29	0.26	0.24	1.02	0.97	0.95	0.92	0.92
Foreign Large Growth	12	16	22	20	27	0.74	0.71	0.69	0.67	0.66	1.18	1.13	1.11	1.08	1.05
Intermediate Core Bond	21	26	21	29	50	0.19	0.16	0.15	0.14	0.14	0.67	0.65	0.65	0.62	0.59
Intermediate Core-Plus Bond	34	41	47	52	58	0.53	0.49	0.51	0.49	0.45	0.84	0.81	0.79	0.76	0.74
Large Blend	121	123	145	160	195	0.23	0.21	0.19	0.17	0.15	0.95	0.89	0.87	0.83	0.80
Large Growth	71	75	80	73	71	0.63	0.61	0.59	0.57	0.55	1.11	1.07	1.05	1.01	0.97
Large Value	24	21	23	22	24	0.55	0.51	0.48	0.44	0.42	1.01	0.95	0.94	0.93	0.92
Mid-Cap Blend	20	18	19	21	29	0.32	0.30	0.23	0.21	0.24	1.04	1.01	1.01	0.95	0.93
Miscellaneous Sector	16	16	16	13	20	0.61	0.61	0.61	0.59	0.63	0.67	0.67	0.66	0.73	0.82
Muni National Intermediate	12	11	16	24	22	0.38	0.38	0.36	0.33	0.31	0.76	0.74	0.73	0.69	0.67
Short-Term Bond	12	20	18	20	23	0.36	0.34	0.34	0.33	0.28	0.74	0.73	0.71	0.69	0.66
Small Blend	21	19	22	23	27	0.47	0.39	0.36	0.33	0.29	1.14	1.11	1.08	1.05	1.00
World Allocation	21	22	22	11	9	0.88	0.83	0.80	0.77	0.74	1.16	1.11	1.09	1.11	1.07
World Large-Stock Blend	36	36	42	46	74	0.71	0.66	0.63	0.58	0.54	1.20	1.06	1.03	1.00	0.95
World Large-Stock Growth	27	29	31	43	44	0.85	0.82	0.80	0.78	0.76	1.21	1.19	1.17	1.15	1.11
World Small/Mid Stock	26	28	29	33	35	1.05	0.99	0.96	0.94	0.93	1.39	1.29	1.28	1.25	1.24

Source: Morningstar Direct. Data as of Dec. 31, 2021.

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