

The original research was
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Reporting Year 2019

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Retirement Plan Performance Measures

The data consisted of four categories of retirement plans of various sizes based on their market values, \$1 million to \$10 million, \$10-100 million, \$100-500 million, and over \$500 million. Of the 4,998 plans included in the original data sample, 410 plans were excluded from the analysis due to missing values in returns of the funds and/or their associated benchmarks. The final sample size for the analysis was 4,588.

- Table 1 reports the number of the total population and the sample of each fund size category in 2019.
- Table 2 reports the mean ratio of funds in plans that outperformed their benchmark.
- Table 3 reports the percentage of plans in each size category that outperformed their benchmark.

This report employs a fund-level approach and a plan-level approach to evaluate the plan's performance. The performance measures used in the analysis at both the fund level and the plan level included expected return, standard deviation, Sharpe ratio, downside risk, and Sortino ratio.

Summary of Results

Plan Performance at the Fund Level

Table 2 reports the mean (average) ratio of funds in plans that outperformed their benchmark.

The average of funds in plans that outperformed their benchmark was calculated by dividing the number of outperforming funds by the total number of funds in the lineup for each plan and taking an average of these ratios for all plans and for plans in each size category.

Evaluated by the expected return, the overall average percent of funds in a plan that outperformed its benchmark was 18.07%. The average of outperforming funds was 18.18% for plans with a market value of \$1-10 million. Plans with a market value of \$500 million or more performed better than other plans with an average of outperforming funds of 18.44%. Only 17.18% of plans with a market value of \$100-500 million or higher outperformed their corresponding benchmark at the fund level, the lowest of all four size categories.

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Plan Performance at the Plan Level

Table 3 reports the percentage of plans that outperformed their corresponding benchmark plan in 2019 at the plan level.

To calculate at the plan level, an equal weight is assigned to each fund offered in its retirement plan. The benchmark for each retirement plan consists of the benchmark of each fund in that plan. Funds in each benchmark plan received their weight in the same manner. Performance measures are then calculated for both the retirement plan portfolio and its benchmark plan portfolio.

On average, the percentage of plans that achieved a higher expected return than their benchmark was 25.07%. Generally, the percentage of plans that outperformed their benchmark plan as measured by expected return was lower for plans with a larger market value. However, the largest plans with a market value of \$500 million or more were an exception, with an average of 32.88% outperformance. An average of 22.65% of plans with a market value of \$100-500 million outperformed their benchmark at the plan level, the lowest among all size categories.

Table 1

Number of Defined Contribution Plans in 2019

Plan Size	2019
\$1m-\$10m	
Population	20,821
Sample	1,841
\$10m-\$100m	
Population	25,722
Sample	2,208
\$100m-\$500m	
Population	4,725
Sample	393
\$500m+	
Population	1,746
Sample	146
Total	
Population	53,014
Sample	4,588

Note. Data supplied by BrightScope. Stratified random sampling was applied to the population for a total sample size of 4,998. After removing plans with only money market funds and those with missing values, the final sample size was 4,588.

Table 2

Mean Ratio of Funds in Plans that Outperformed Their Benchmark

Plan Size	2019
	Panel A: Higher Expected Returns
Overall	18.07
\$1-10m	18.18
\$10-100m	18.11
\$100-500m	17.18
\$500m+	18.44
	Panel B: Lower Risk (Standard Deviation)
Overall	61.60
\$1-10m	62.70
\$10-100m	61.76
\$100-500m	59.73
\$500m+	50.36
	Panel C: Higher Sharpe Ratio
Overall	19.15
\$1-10m	19.35
\$10-100m	19.44
\$100-500m	17.25
\$500m+	17.52
	Panel D: Lower Downside Risk
Overall	62.15
\$1-10m	62.74
\$10-100m	62.61
\$100-500m	61.54
\$500m+	49.31
	Panel E: Higher Sortino Ratio
Overall	20.33
\$1-10m	20.67
\$10-100m	20.57
\$100-500m	18.19
\$500m+	17.95

Note. n=4,558, numbers in percentages.

Table 3

Percentages of Plans that Outperformed Their Benchmark

Plan Size	2019
	Panel A: Higher Expected Returns
Overall	25.07
\$1-10m	25.31
\$10-100m	24.77
\$100-500m	22.65
\$500m+	32.88
	Panel B: Lower Risk (Standard Deviation)
Overall	68.94
\$1-10m	71.37
\$10-100m	68.39
\$100-500m	68.45
\$500m+	47.95
	Panel C: Higher Sharpe Ratio
Overall	32.37
\$1-10m	34.82
\$10-100m	31.20
\$100-500m	27.74
\$500m+	31.51
	Panel D: Lower Downside Risk
Overall	79.99
\$1-10m	80.61
\$10-100m	80.89
\$100-500m	80.66
\$500m+	56.85
	Panel E: Higher Sortino Ratio
Overall	46.25
\$1-10m	48.40
\$10-100m	45.83
\$100-500m	41.22
\$500m+	39.04

Note. n=4,558, numbers in percentages.