

S&P Target Date Scorecard

Contributors

Kevin Patalano
Senior Analyst
Multi-Asset Indices
kevin.patalano@spglobal.com

Sara Pollock, CFA
Director
Multi-Asset Indices
sara.pollock@spglobal.com

Overview

- The S&P Target Date[®] Scorecard provides performance comparisons and analytics covering the U.S. target date fund (TDF) universe.
- **The S&P Target Date Index Series is a consensus-driven, multi-asset benchmark for TDFs.** It is designed to be an accurate representation of TDFs in the U.S. market and to be the basis against which managers can assess their performance.
- The series is constructed from indices that represent the actual allocations of funds in the U.S. target date space.
- The assets used in the construction of the index series are all investable, and the weights are published in advance of the index series' rebalancing.
- **S&P Dow Jones Indices also produces S&P Target Date Style Indices.** The “To” style indices aim to reduce the impact of market drawdowns around the expected retirement date, while the “Through” style indices aim to mitigate longevity risk—the risk of outliving one’s assets in retirement.
- The series consists of 13 S&P Target Date Indices, 11 S&P Target Date To Indices and 12 S&P Target Date Through Indices. New index vintages are launched in five-year intervals.¹

¹ For more information on the construction of the S&P Target Date Index Series, please see Appendix II.

Market Commentary

In the first half of 2024, U.S. equity markets demonstrated resilience amid fluctuating economic conditions, buoyed by strong corporate earnings and a robust labor market. However, inflationary pressures persisted, leading the Federal Reserve to maintain a cautious stance on interest rates.

Globally, markets faced headwinds from geopolitical tensions and varying recovery rates post-pandemic. Emerging markets showed promise, particularly in Asia, as consumer demand rebounded.

In fixed income, yields remained volatile as investors navigated the Fed's policy signals, with a slight upward trend in long-term rates reflecting inflation concerns.

Commodities experienced mixed performance; energy prices surged due to supply constraints, while agricultural commodities faced downward pressure from favorable weather conditions. Overall, the first half of 2024 showcased a complex interplay of growth and inflation dynamics across markets.

Equities

- **Region:** The U.S. outperformed other regions in the first half of 2024, with emerging markets outperforming developed market equities. The [S&P 500[®]](#) TR gained 15.29%, versus the [S&P Developed Ex-U.S. BMI](#) NTR at 4.20% and the [S&P Emerging BMI](#) NTR at 7.93%.
- **Capitalization:** Within the U.S., large caps outperformed both small caps (the [S&P SmallCap 600[®]](#) TR was slightly down, at -0.72%) and mid caps (the [S&P MidCap 400[®]](#) gained 6.17%).
- **REITs:** Developed ex-U.S. REITs substantially underperformed U.S. REITs. The S&P Developed Ex-U.S. REIT NTR lost 6.92%, while the [Dow Jones U.S. Select REIT Index](#) TR fell 0.55%.

Fixed Income

- **Short-Term:** Shorter-dated paper was the best-performing segment within fixed income, with the [S&P U.S. Treasury Bond 0-1 Year Index](#) up 2.40%.
- **High Yield:** High yield was up slightly in the first half of 2024, with the [S&P 500 High Yield Corporate Bond Index](#) posting 1.62%.

- **U.S. Aggregate:** The front half of the year saw choppy performance for the broad U.S. bond market, as inflation remained a concern for investors waiting for Federal Reserve action. The [S&P U.S. Aggregate Bond Index](#) posted -0.22%.
- **TIPS:** TIPS were up modestly as inflation persisted, with the [S&P U.S. TIPS Index](#) posting 1.02%.

Commodities

- The [S&P GSCI](#) TR started off the year solidly, posting 11.08%.

Annual Reconstitution Process Update

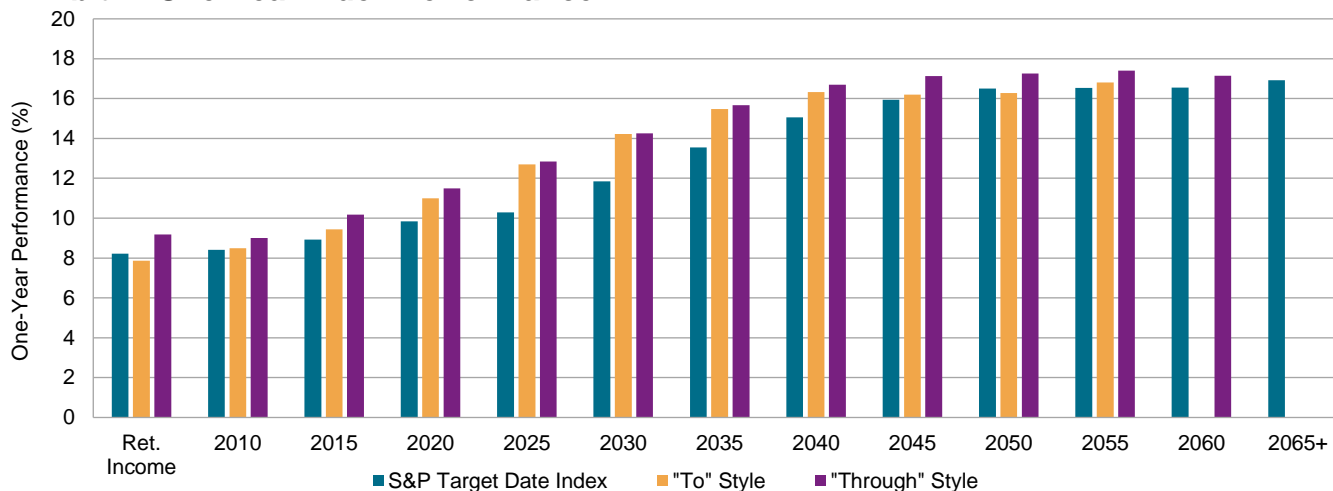
As of the 2023 reconstitution, the S&P Target Date Index Series uses an improved method of determining weights of the underlying funds used to create the sub-indices in each index vintage. Prior to the 2023 reconstitution, the FactSet (and previously Morningstar) categories were used to determine the classification of a fund. Due to the limitations of these categories, there were situations where funds with one label might include a percentage of securities from a different asset class. In other words, the categories did not always fully describe all holdings of a fund. As a result, some of the actual holdings of these funds were not accounted for in the reconstitution and therefore would not be shown in the final index composition.

A theoretical example would be a fund that may have held 90% high yield and 10% investment grade debt prior to the 2023 reconstitution. Due to limitations of the classification used, the fund may have been labeled “High Yield Corporate Bonds” and, therefore, 100% of the fund would have been used to determine the weight of the S&P 500 High Yield Corporate Bond Index in the S&P Target Date Index Series. Unfortunately, the 10% of investment grade debt in that fund was not accounted for as “Core Fixed Income.”

To rectify this problem, S&P Dow Jones Indices instituted a process for the 2023 reconstitution to view all holdings of surveyed funds at the security level, as this gives a more accurate representation of their holdings. In the previous theoretical example, the individual securities would be taken into account for the correct corresponding index; namely 90% would go to the S&P 500 High Yield Corporate Bond Index (asset class: High Yield Corporate Bonds) and 10% would go to the S&P U.S. Aggregate Bond Index (asset class: Core Fixed Income).

Please note that the aforementioned example is for educational purposes only. S&P Dow Jones Indices does not release data surrounding the reconstitution process, including underlying funds or their allocations. The update to this process should not be confused with the changes in allocations that were purely due to market dynamics and manager decisions, which always have an impact on the annual reconstitution.

Exhibit 1: One-Year Index Performance



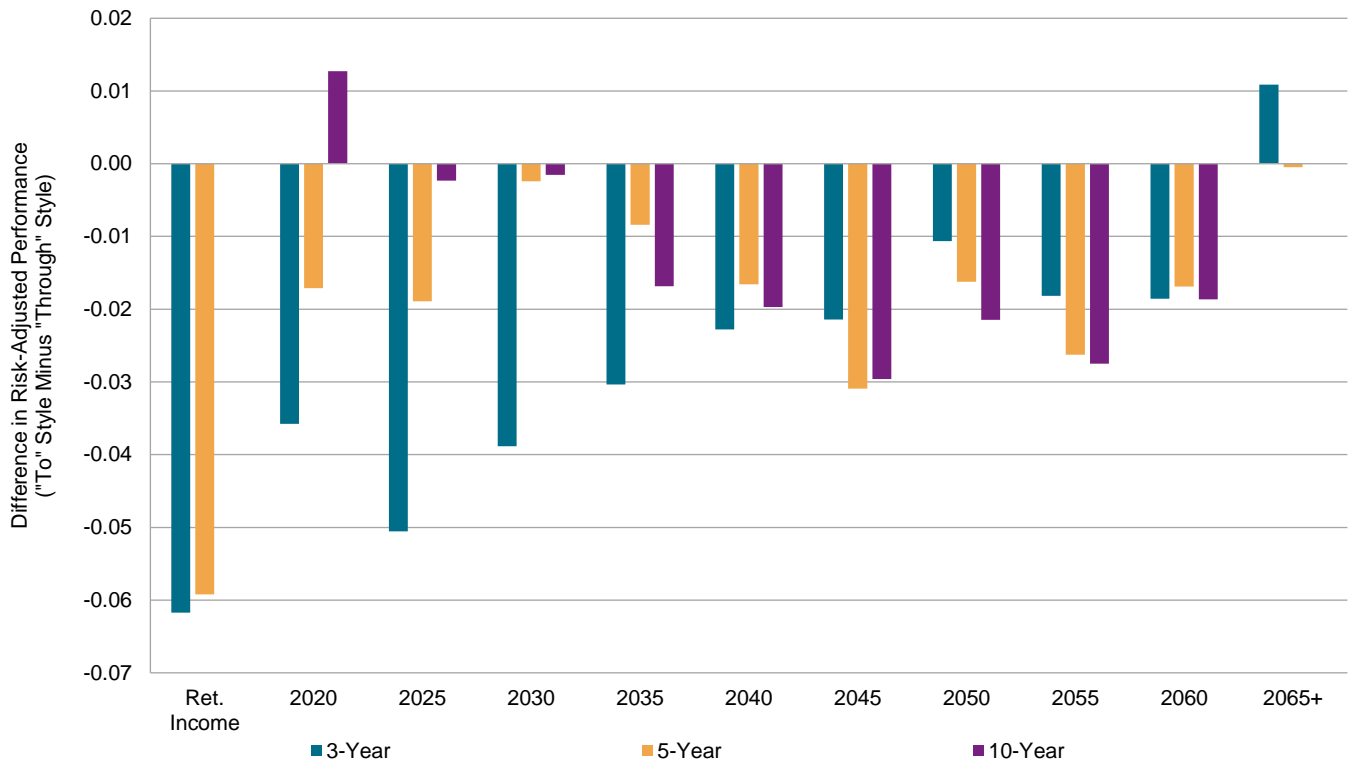
Source: S&P Dow Jones Indices LLC. Data as of June 28, 2024. Index performance based on total return in USD. The S&P Target Date To 2010 Index was retired in May 2016. The S&P Target Date Through 2010 and S&P Target Date To 2015 Indices were retired in May 2022. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Exhibit 2: S&P Target Date Indices Risk/Return Overview

Period	Ret. Income	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065+
Return (%)													
Q2 2024	1.12	1.19	1.19	1.28	1.31	1.43	1.58	1.77	1.83	1.95	1.95	1.95	2.06
Q1 2024	2.33	2.43	2.70	3.20	3.44	4.26	5.23	6.02	6.56	6.82	6.84	6.85	7.00
Q4 2023	7.39	7.42	7.68	8.04	8.28	9.02	9.68	10.19	10.53	10.70	10.71	10.72	10.80
Q3 2023	-2.61	-2.62	-2.66	-2.73	-2.80	-2.98	-3.14	-3.23	-3.33	-3.36	-3.36	-3.37	-3.37
1-Year	8.22	8.41	8.93	9.84	10.29	11.85	13.55	15.05	15.94	16.50	16.53	16.55	16.93
3-Year	1.12	1.34	1.52	1.83	2.11	2.78	3.49	4.17	4.62	4.86	4.88	4.89	5.05
5-Year	3.91	4.51	4.93	5.28	6.07	7.04	8.09	8.93	9.44	9.72	9.78	9.81	9.92
10-Year	3.92	4.43	4.85	5.22	5.80	6.46	7.16	7.69	8.02	8.22	8.28	8.33	-
Annualized Volatility (%)													
1-Year	8.44	8.50	8.86	9.40	9.77	10.85	11.89	12.77	13.36	13.67	13.69	13.74	13.81
3-Year	8.40	8.86	9.47	10.25	10.84	12.18	13.67	14.78	15.50	15.82	15.88	15.92	15.93
5-Year	7.75	8.37	9.10	9.92	10.99	12.52	14.15	15.30	16.01	16.35	16.47	16.50	16.51
10-Year	6.15	6.79	7.54	8.31	9.31	10.58	11.88	12.78	13.35	13.67	13.80	13.86	-
Risk-Adjusted Return													
1-Year	0.97	0.99	1.01	1.05	1.05	1.09	1.14	1.18	1.19	1.21	1.21	1.20	1.23
3-Year	0.13	0.15	0.16	0.18	0.19	0.23	0.25	0.28	0.30	0.31	0.31	0.31	0.32
5-Year	0.50	0.54	0.54	0.53	0.55	0.56	0.57	0.58	0.59	0.59	0.59	0.59	0.60
10-Year	0.64	0.65	0.64	0.63	0.62	0.61	0.60	0.60	0.60	0.60	0.60	0.60	-

Source: S&P Dow Jones Indices LLC. Data as of June 28, 2024. All figures are annualized, based on monthly total returns in USD. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Exhibit 3: Difference in Risk-Adjusted Performance



Source: S&P Dow Jones Indices LLC. Data as of June 28, 2024. Chart shows the difference in risk-adjusted performance between S&P Target Date To Indices and S&P Target Date Through Indices. Figures based on annualized returns and volatilities based on monthly total return figures. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

A Unique Scorecard for the Target Date Universe

The S&P Target Date Scorecard presents the performance of TDFs compared to appropriate benchmark indices. We consider all target date asset allocation policies to be active decisions, so we include funds that use passive underlying investments as well as active underlying investments. The scorecard covers target dates from retirement income to 2065 and beyond, and it has the following unique features.

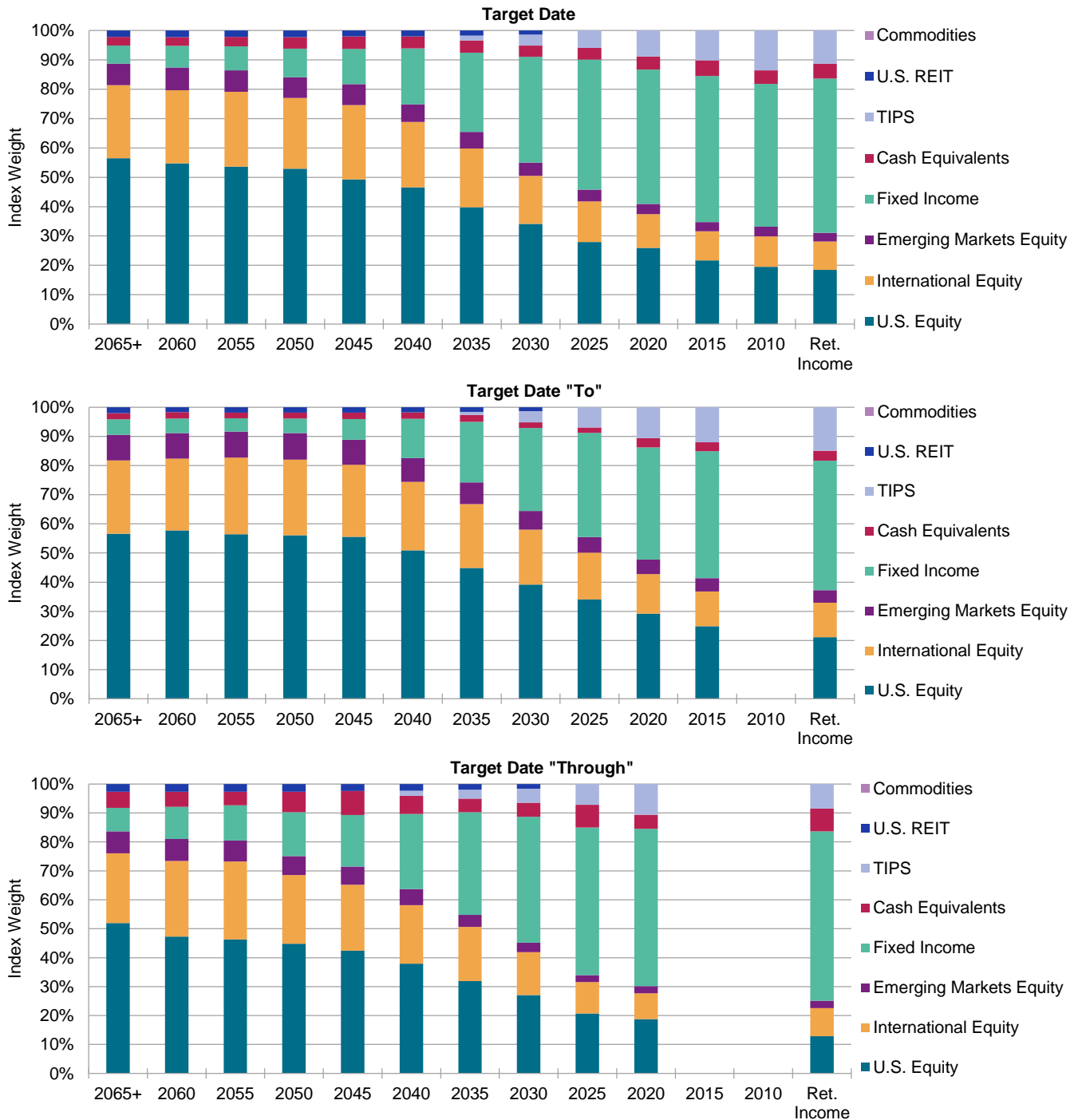
- **A Representative Target Date Benchmark:** The S&P Target Date Index² is the only consensus-driven target date benchmark offered by an independent index provider. Its asset class exposure and glide path are functions of market observations acquired from an annual survey of target date managers. The index currently includes target dates from retirement income through 2065+. The S&P Target Date To Retirement Income and S&P Target Date Through Retirement Income Index Series were launched in January 2015, and performance is incorporated as accumulated history becomes available.
- **Apples-to-Apples Comparison:** TDF returns are sometimes compared to popular asset class benchmarks such as the S&P 500 or Bloomberg Barclays U.S. Aggregate Bond Index. The S&P Target Date Scorecard avoids this pitfall by measuring a fund's returns against the returns of the benchmark that is most appropriate for each target date category.
- **Asset Allocation Risk Revealed:** Sometimes custom, multi-asset class benchmarks are used for comparison purposes. However, these benchmarks do not measure asset allocation risk, as they are typically set with asset class exposure selected by fund managers. They may lack transparency and may not be adjusted for changes in asset allocation policy over time. The report avoids these problems by referencing our consensus-driven target date benchmark that provides a representative proxy of asset allocation risk for each target date vintage.
- **Asset-Weighted Returns:** Average returns for a fund group are often calculated using only equal weighting, which results in the returns of a USD 10 billion fund affecting the average in the same manner as the returns of a USD 10 million fund. An accurate representation of how market participants fared in a particular period can be better ascertained by calculating weighted average returns, in which each fund's return is weighted by net assets. The S&P Target Date Scorecard shows both equal- and asset-weighted averages. Additionally, we now use all share classes to calculate average TDF returns and performance quartiles.

² It is not possible to invest directly in an index. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance.

- **Data Cleaning:** Appropriate peer groups are built from underlying databases, so meaningful benchmark comparisons may be performed. TDFs with vintages of 2065 or beyond are compared with the [S&P Target Date 2065+ Index](#). TDFs with vintages that have already passed, such as 2005, are compared with the [S&P Target Date Retirement Income Index](#). Average TDF returns, both equal and asset weighted, are calculated using all share classes within each fund family in order to represent the aggregate experience of TDF shareholders. The S&P Target Date Scorecard offers the only comprehensive, periodic and publicly available source of such data. Reports are available at spglobal.com/spdji.

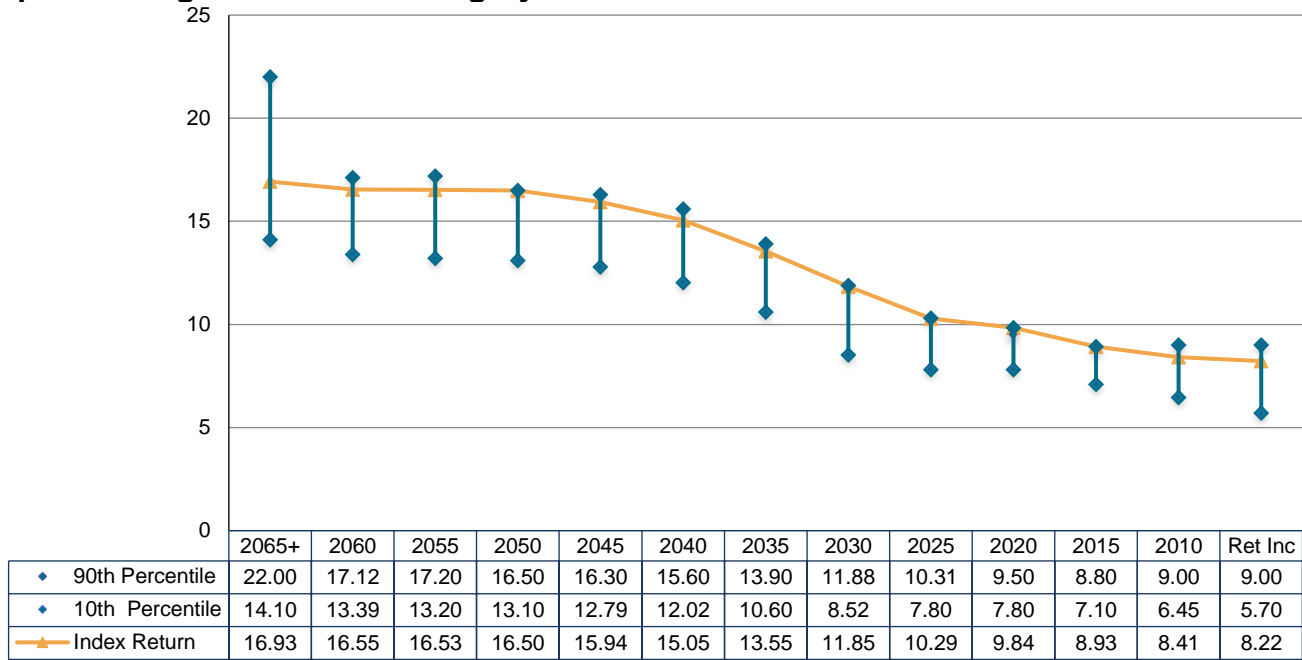
Reports

Report 1: S&P Target Date Benchmark Glide Path – Index Weights



Source: S&P Dow Jones Indices LLC. Data as of June 28, 2024. Past performance is no guarantee of future results. The S&P Target Date To 2010 Index was retired in May 2016. The S&P Target Date Through 2010 and S&P Target Date To 2015 Indices were retired in May 2022. Charts are provided for illustrative purposes.

Report 2: Target Date Fund Category Performance



Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 28, 2024. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Report 3: Average TDF Performance

Category	One-Year (%)	Three-Year (Annualized, %)	Five-Year (Annualized, %)
Ret. Income TDFs (EW)	7.63	0.41	3.62
Ret. Income TDFs (AW)	6.80	0.30	3.00
S&P Target Date Ret. Income Index	8.22	1.12	3.91
S&P Target Date to Ret. Income Index	7.87	1.03	4.02
S&P Target Date Through Ret. Income Index	9.18	1.53	4.53
2010 TDFs (EW)	7.53	0.55	4.18
2010 TDFs (AW)	7.40	0.70	4.20
S&P Target Date 2010 Index	8.41	1.34	4.51
S&P Target Date To 2010 Index*	-	-	-
S&P Target Date Through 2010 Index*	-	-	-
2015 TDFs (EW)	8.00	0.66	4.60
2015 TDFs (AW)	8.20	0.70	4.30
S&P Target Date 2015 Index	8.93	1.52	4.93
S&P Target Date To 2015 Index*	-	-	-
S&P Target Date Through 2015 Index	9.00	1.54	5.13
2020 TDFs (EW)	8.62	0.77	4.79
2020 TDFs (AW)	8.40	0.60	4.40
S&P Target Date 2020 Index	9.84	1.83	5.28
S&P Target Date To 2020 Index	8.50	1.36	4.44
S&P Target Date Through 2020 Index	10.17	1.99	5.85
2025 TDFs (EW)	9.14	0.94	5.31
2025 TDFs (AW)	8.80	0.90	5.10
S&P Target Date 2025 Index	10.29	2.11	6.07
S&P Target Date To 2025 Index	9.43	1.89	5.52
S&P Target Date Through 2025 Index	11.49	2.69	6.76
2030 TDFs (EW)	10.34	1.49	6.24
2030 TDFs (AW)	10.60	1.50	6.10
S&P Target Date 2030 Index	11.85	2.78	7.04
S&P Target Date To 2030 Index	11.00	2.57	6.60
S&P Target Date Through 2030 Index	12.84	3.26	7.51

*The S&P Target Date To 2010 Index was retired in May 2016. The S&P Target Date Through 2010 and S&P Target Date To 2015 Indices were retired in May 2022.

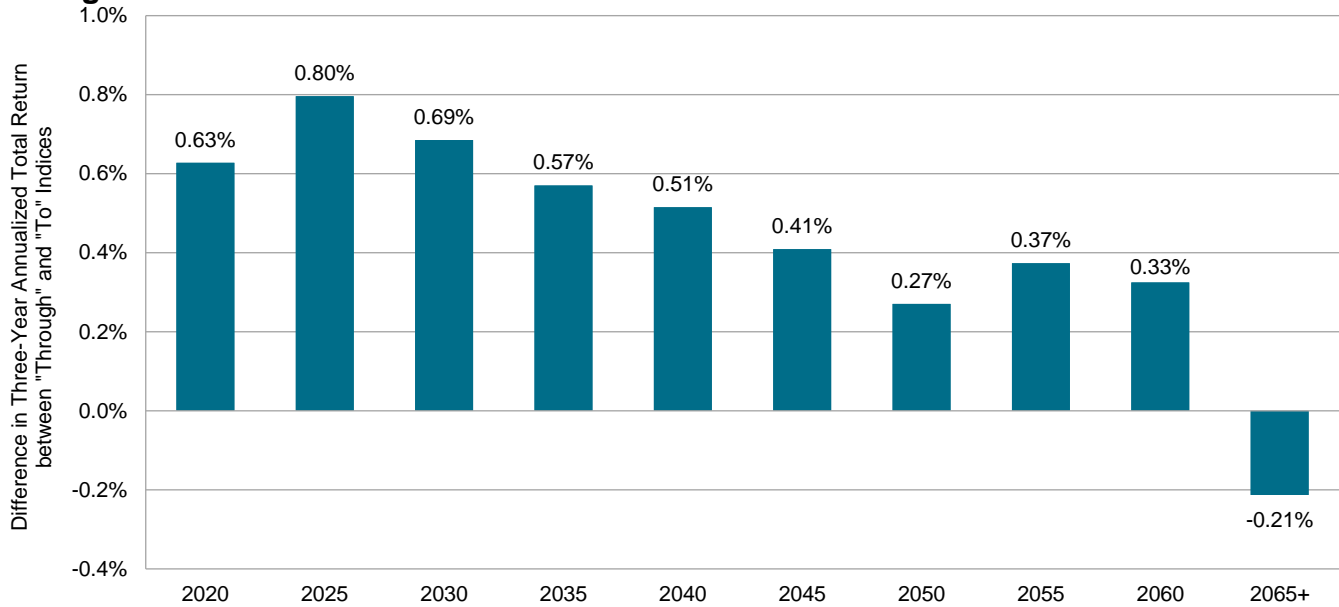
Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 28, 2024. "EW" represents equal weighted. "AW" represents asset weighted. See Appendix I for more information. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 3: Average Target Date Fund Performance (cont.)

Category	One-Year (%)	Three-Year (Annualized, %)	Five-Year (Annualized, %)
2035 TDFs (EW)	12.30	2.30	7.48
2035 TDFs (AW)	11.70	2.10	6.80
S&P Target Date 2035 Index	13.55	3.49	8.09
S&P Target Date To 2035 Index	12.70	3.32	7.67
S&P Target Date Through 2035 Index	14.25	3.89	8.46
2040 TDFs (EW)	13.88	3.00	8.41
2040 TDFs (AW)	13.30	2.60	7.80
S&P Target Date 2040 Index	15.05	4.17	8.93
S&P Target Date To 2040 Index	14.22	4.02	8.46
S&P Target Date Through 2040 Index	15.67	4.54	9.31
2045 TDFs (EW)	14.73	3.42	8.97
2045 TDFs (AW)	14.40	3.10	8.30
S&P Target Date 2045 Index	15.94	4.62	9.44
S&P Target Date To 2045 Index	15.47	4.62	9.11
S&P Target Date Through 2045 Index	16.70	5.03	9.94
2050 TDFs (EW)	15.11	3.55	9.18
2050 TDFs (AW)	14.70	3.30	8.50
S&P Target Date 2050 Index	16.50	4.86	9.72
S&P Target Date To 2050 Index	16.32	4.97	9.54
S&P Target Date Through 2050 Index	17.13	5.24	10.13
2055 TDFs (EW)	15.49	3.73	9.28
2055 TDFs (AW)	14.50	3.40	8.50
S&P Target Date 2055 Index	16.53	4.88	9.78
S&P Target Date To 2055 Index	16.19	4.93	9.53
S&P Target Date Through 2055 Index	17.26	5.31	10.20
2060 TDFs (EW)	15.60	3.77	9.31
2060 TDFs (AW)	14.80	3.30	8.90
S&P Target Date 2060 Index	16.55	4.89	9.81
S&P Target Date To 2060 Index	16.28	4.99	9.76
S&P Target Date Through 2060 Index	17.41	5.32	10.19
2065+ TDFs (EW)	16.34	4.02	9.49
2065+ TDFs (AW)	14.50	3.50	4.70
S&P Target Date 2065+ Index	16.93	5.05	9.92
S&P Target Date To 2065+ Index	16.81	5.39	10.01
S&P Target Date Through 2065+ Index	17.15	5.18	10.11

Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 28, 2024. "EW" represents equal weighted. "AW" represents asset weighted. See Appendix I for more information. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 4: Difference in Three-Year Total Return Indices (“Through” Minus “To”) by Vintage



Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 28, 2024. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Report 5: Return Quartiles of TDFs

Fund Category	25 th Percentile	Median	75 th Percentile
One-Year			
Ret. Income	8.50	7.80	6.90
Target 2010	8.20	7.45	6.73
Target 2015	8.50	7.90	7.50
Target 2020	9.10	8.60	8.10
Target 2025	9.90	9.25	8.50
Target 2030	11.30	10.60	9.60
Target 2035	13.20	12.30	11.30
Target 2040	14.90	13.90	12.80
Target 2045	15.80	14.90	13.60
Target 2050	16.10	15.40	14.20
Target 2055	16.35	15.70	14.35
Target 2060	16.40	15.70	14.40
Target 2065+	16.60	15.90	14.90

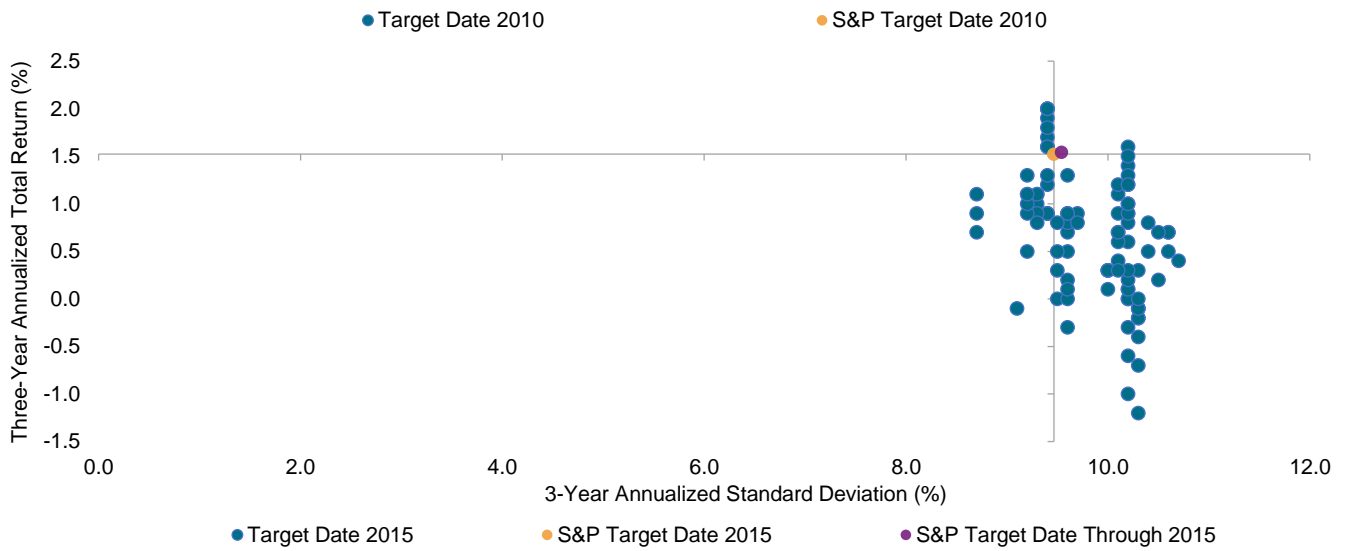
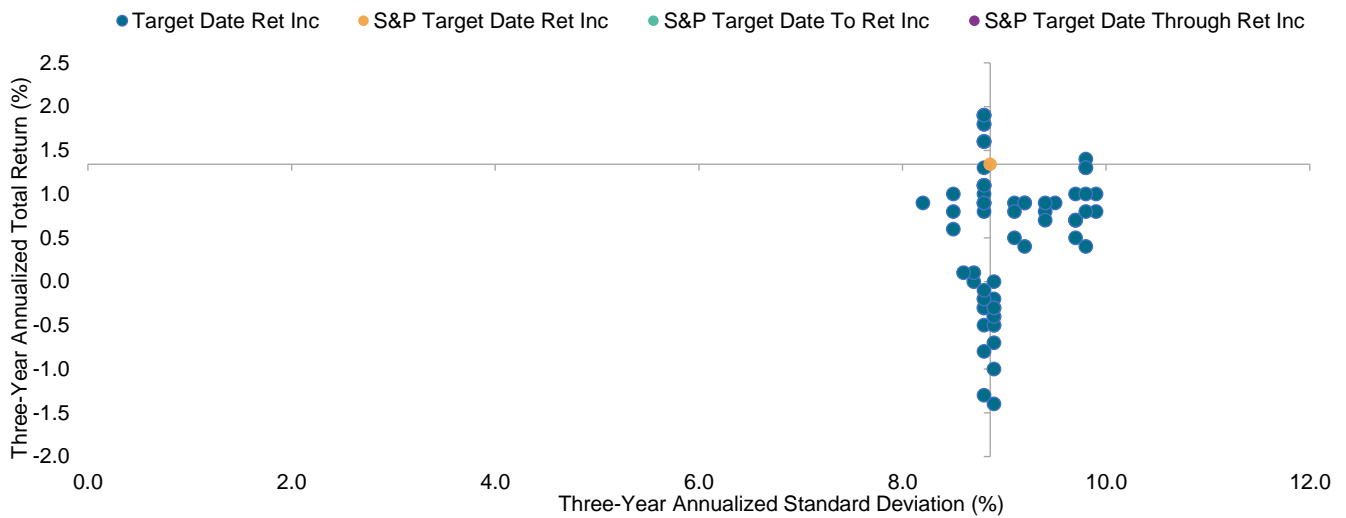
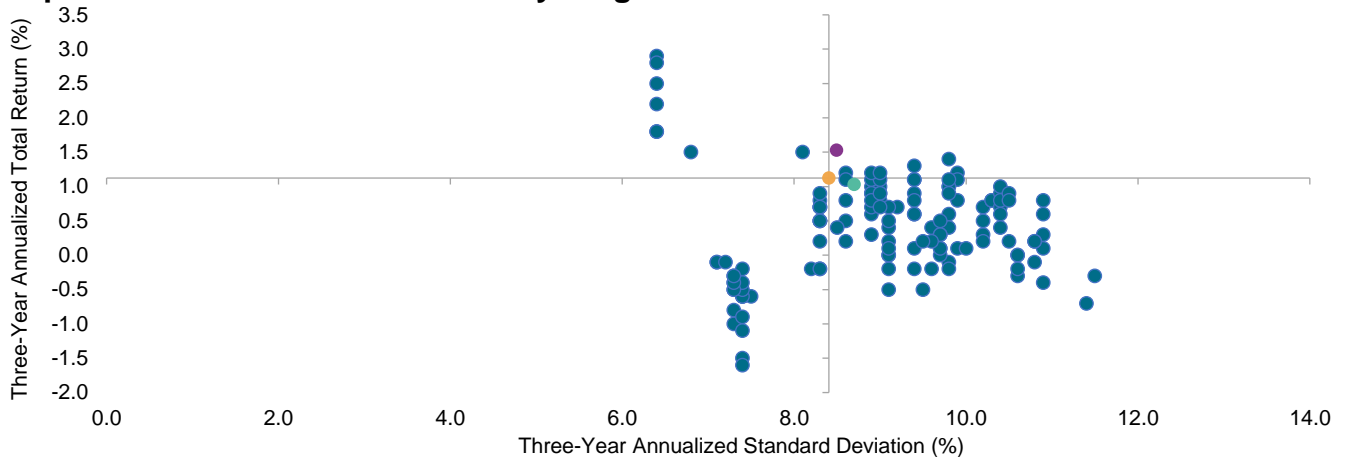
Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 28, 2024. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 5: Return Quartiles of Target Date Funds (cont.)

Fund Category	25th Percentile	Median	75th Percentile
Three-Year			
Ret. Income	0.90	0.40	-0.10
Target 2010	1.00	0.80	-0.18
Target 2015	1.10	0.70	0.20
Target 2020	1.20	0.80	0.30
Target 2025	1.40	0.90	0.50
Target 2030	2.00	1.40	1.00
Target 2035	2.80	2.30	1.80
Target 2040	3.50	3.10	2.50
Target 2045	3.90	3.50	2.93
Target 2050	4.10	3.60	3.10
Target 2055	4.20	3.70	3.10
Target 2060	4.28	3.70	3.10
Target 2065+	4.50	3.70	3.10
Five-Year			
Ret. Income	4.20	3.70	2.60
Target 2010	4.60	4.30	3.63
Target 2015	4.90	4.50	4.20
Target 2020	5.30	4.90	4.10
Target 2025	5.90	5.30	4.60
Target 2030	6.75	6.20	5.60
Target 2035	7.90	7.40	6.80
Target 2040	8.80	8.30	7.70
Target 2045	9.40	9.00	8.40
Target 2050	9.70	9.20	8.65
Target 2055	9.70	9.30	8.65
Target 2060	9.70	9.20	8.50
Target 2065+	0.00	0.00	0.00

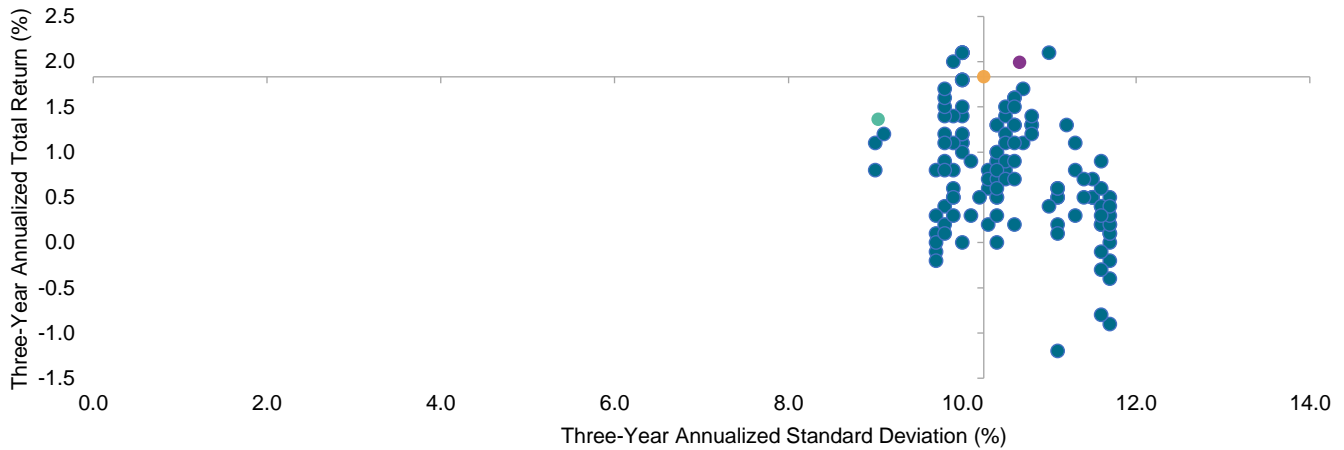
Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 28, 2024. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 6: Three-Year Risk/Return by Target Date

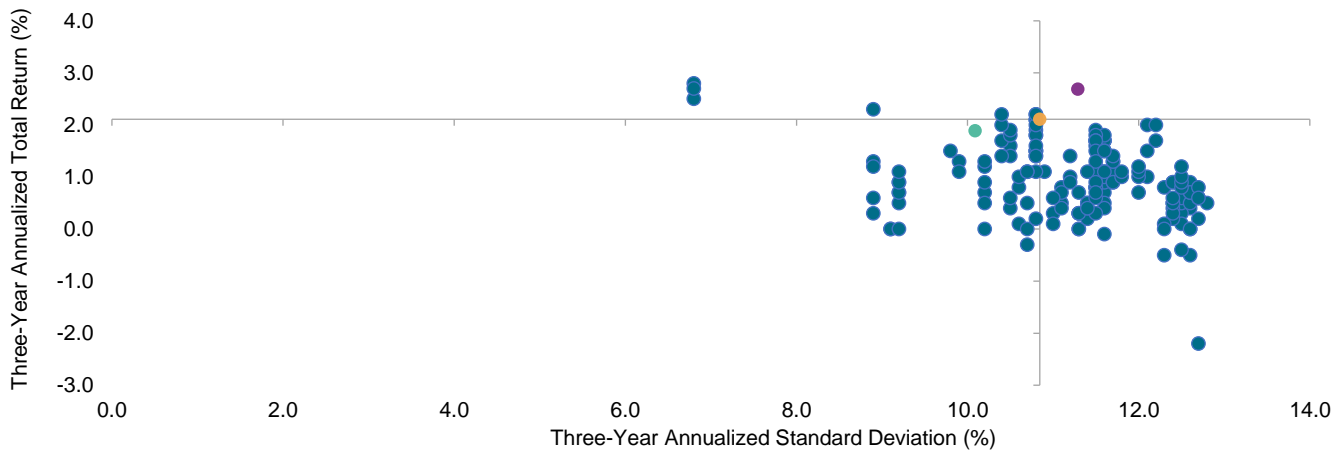


Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 28, 2024. The S&P Target Date To 2010 Index was retired in May 2016. The S&P Target Date Through 2010 and S&P Target Date To 2015 Indices were retired in May 2022. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

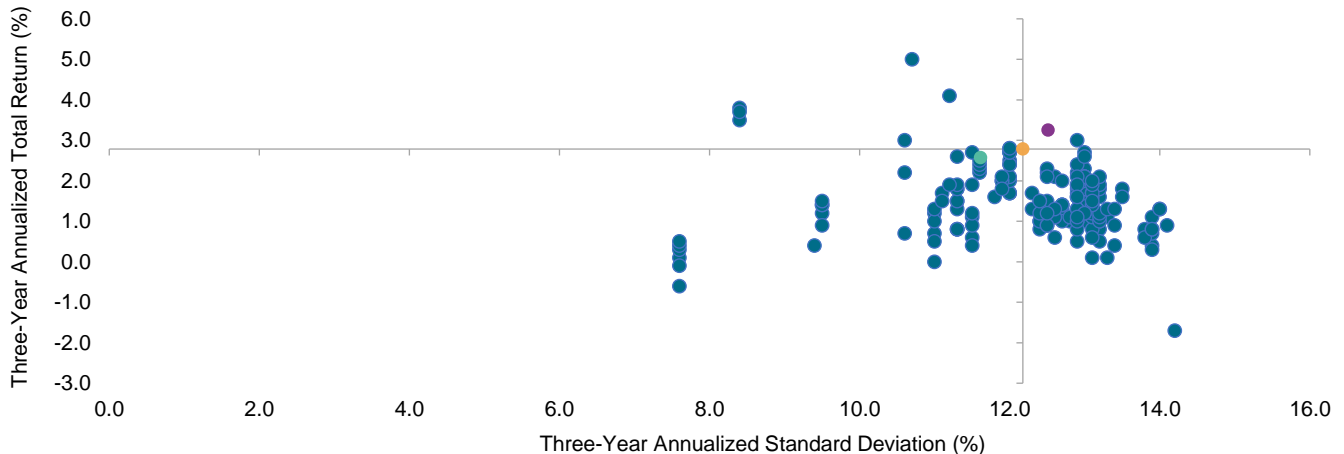
Report 6: Three-Year Risk/Return by Target Date (cont.)



● Target Date 2020 ● S&P Target Date 2020 ● S&P Target Date To 2020 ● S&P Target Date Through 2020



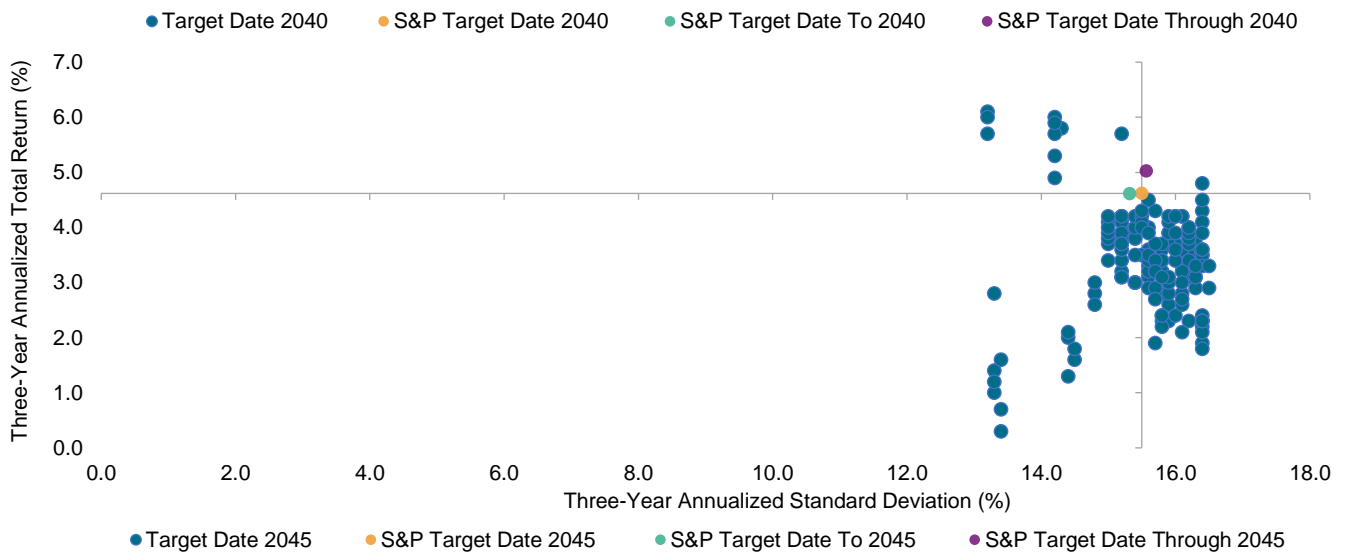
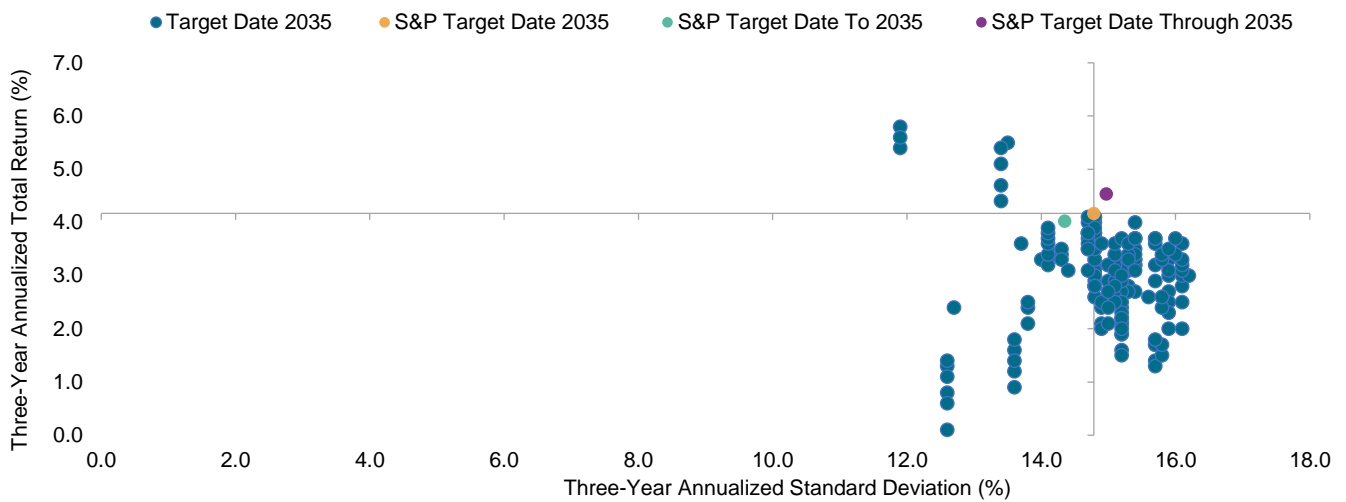
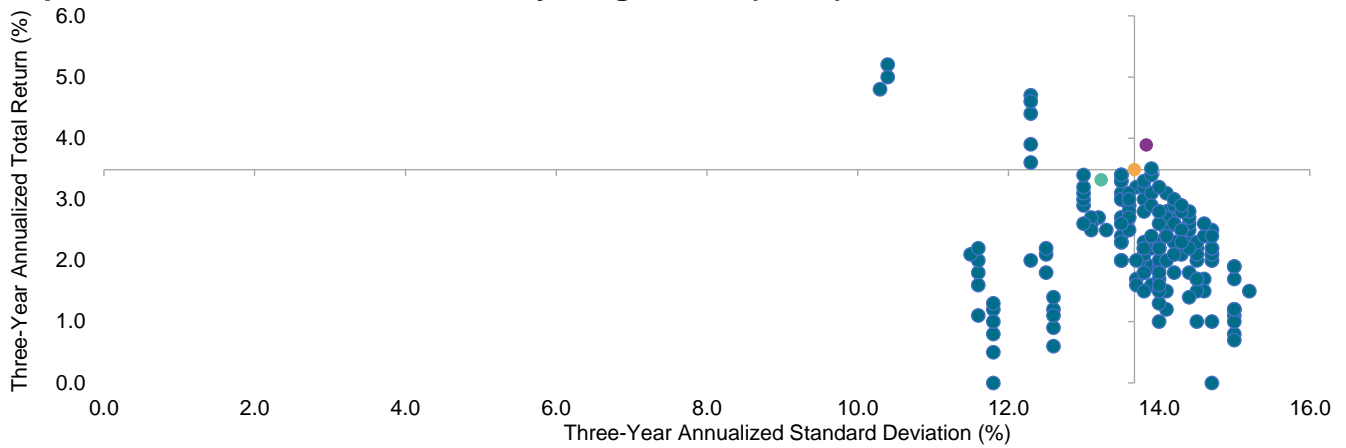
● Target Date 2025 ● S&P Target Date 2025 ● S&P Target Date To 2025 ● S&P Target Date Through 2025



● Target Date 2030 ● S&P Target Date 2030 ● S&P Target Date To 2030 ● S&P Target Date Through 2030

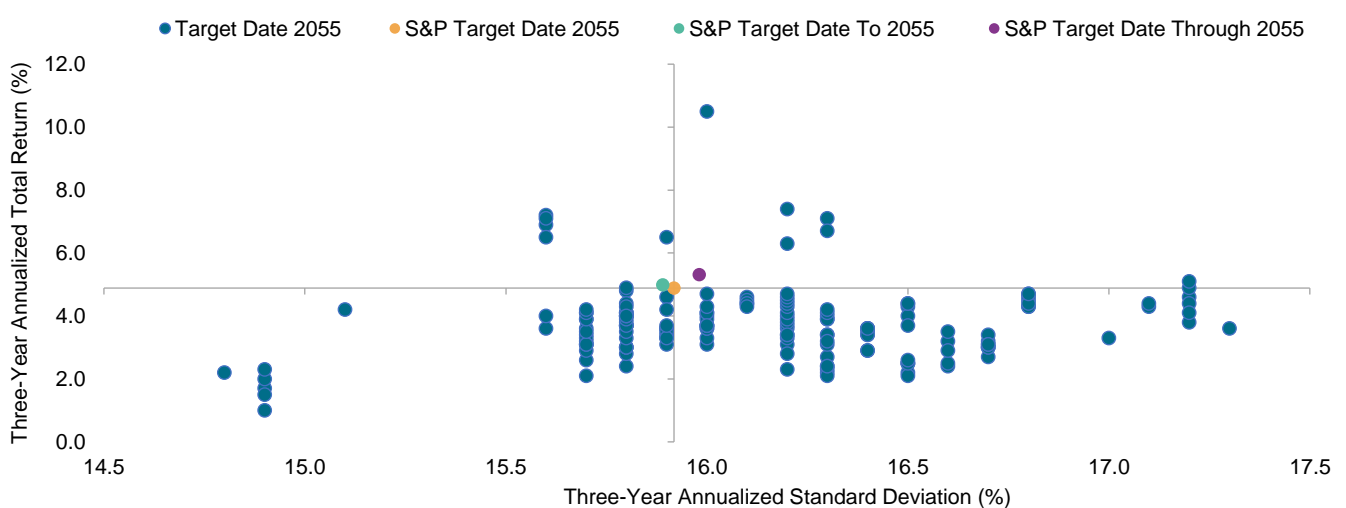
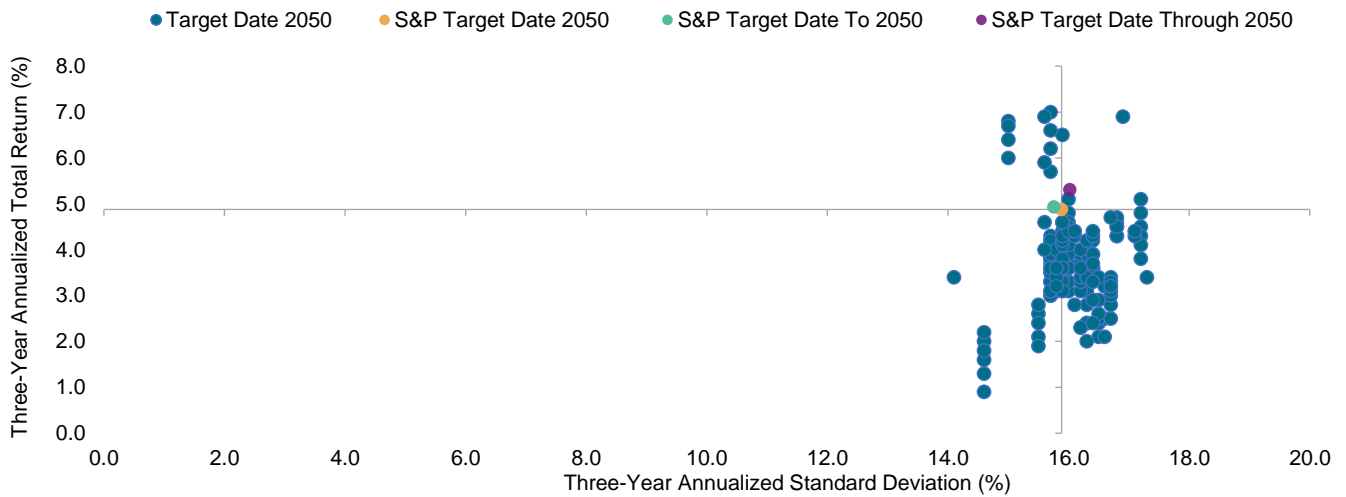
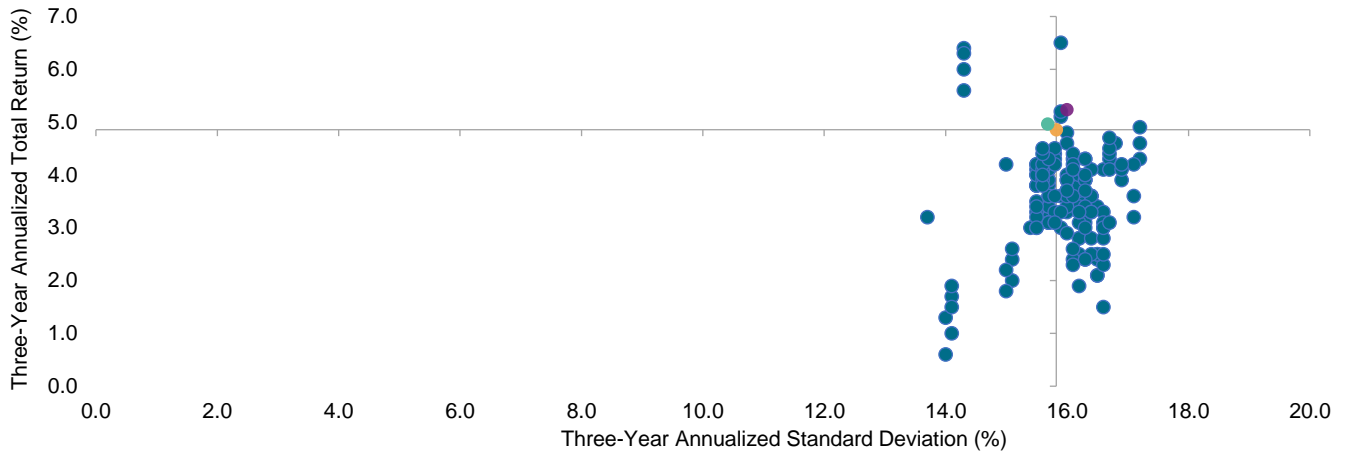
Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 28, 2024. The S&P Target Date To 2010 Index was retired in May 2016. The S&P Target Date Through 2010 and S&P Target Date To 2015 Indices were retired in May 2022. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

Report 6: Three-Year Risk/Return by Target Date (cont.)



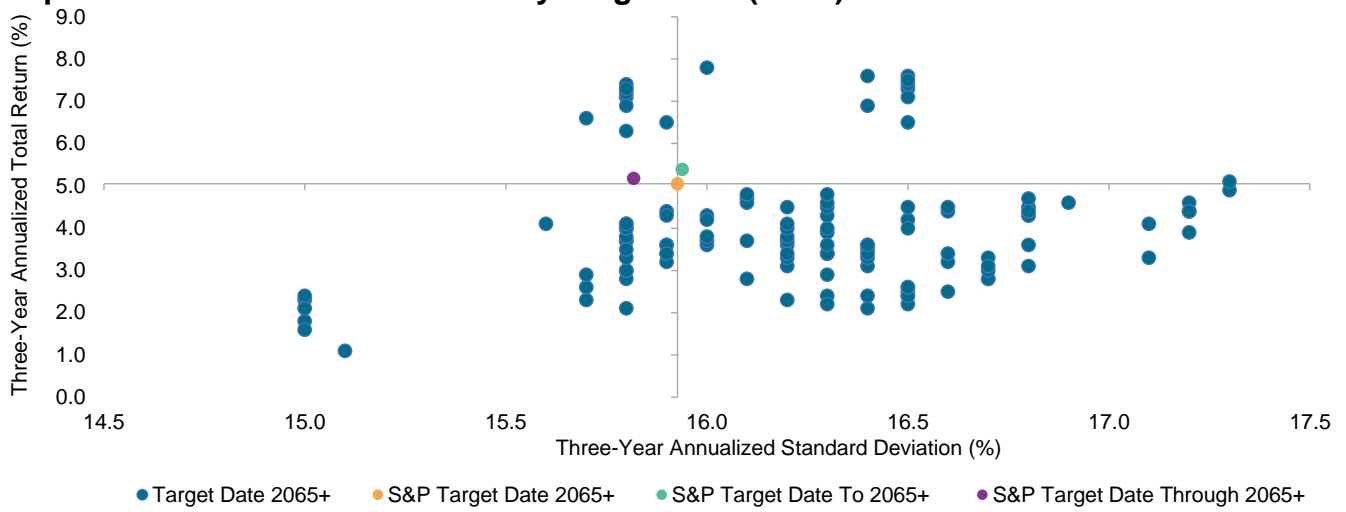
Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 28, 2024. The S&P Target Date To 2010 Index was retired in May 2016. The S&P Target Date Through 2010 and S&P Target Date To 2015 Indices were retired in May 2022. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

Report 6: Three-Year Risk/Return by Target Date (cont.)



Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 28, 2024. The S&P Target Date To 2010 Index was retired in May 2016. The S&P Target Date Through 2010 and S&P Target Date To 2015 Indices were retired in May 2022. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

Report 6: Three-Year Risk/Return by Target Date (cont.)



Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 28, 2024. The S&P Target Date To 2010 Index was retired in May 2016. The S&P Target Date Through 2010 and S&P Target Date To 2015 Indices were retired in May 2022. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

Appendix I: Glossary

Equal-Weighted (EW) Average TDF Performance

Equal-weighted returns for a particular style category are determined by calculating a simple average return of all active share classes in that category in a specific month. The effects of sales charges, or loads, are not included.

Asset-Weighted (AW) Average TDF Performance

Asset-weighted returns for a particular style category are determined by calculating a weighted average return of all funds in that category in a specific month, with each fund's return weighted by its total net assets. The effects of sales charges, or loads, are not included.

Return Quartiles

The p^{th} percentile for a set of data is the value that is greater than or equal to $p\%$ of the data but less than or equal to $(100 - p)\%$ of the data. In other words, it is a value that divides the data into two parts: the lower $p\%$ of the values and the upper $(100 - p)\%$ of the values. The first quartile is the 75th percentile, meaning it is the value separating the elements of a population into the lower 75% and the upper 25%. The second quartile is the 50th percentile and the third quartile is the 25th percentile. Returns of all share classes, excluding loads, are used to calculate TDF category quartiles for specific time periods.

Appendix II: Index Construction

The S&P Target Date Index Series is a survey index that uses actual allocation data from U.S. TDFs to determine its allocation for each index vintage. The underlying database used for this survey is FactSet, which covers both U.S. target date mutual funds and collective investment trusts.

In the spring of each year, the index series undergoes a new survey. This survey, also referred to as the annual reconstitution, first pulls all U.S. TDF families with at least USD 100 million in AUM, which will serve as the fund universe to determine eligible asset classes and weights for the index series. Fund holdings are taken from FactSet and supplemented by the latest Form N-Q from EDGAR. To determine the eligible asset classes the index series will be based upon, asset classes must pass one of two thresholds. For asset classes that already exist in the index series as of the most recent year (e.g., U.S. large-cap equities), at least 25% of funds in the survey must have an allocation to this asset class in order for it to remain eligible for inclusion. For new asset classes that are not included in the index as of the most recent year, this threshold would be 30%. Once the eligible asset classes are determined, they will be assigned a corresponding index that will be used to represent the asset class in the final S&P Target Date Indices. The eligible asset classes for the 2023 reconstitution are shown in Exhibit 4.

Exhibit 4: Asset Classes in the S&P Target Date Indices

Asset Class	Corresponding Index
U.S. Large-Cap Equity	S&P 500 TR
U.S. Mid-Cap Equity	S&P 400 [®] TR
U.S. Small-Cap Equity	S&P 600 [®] TR
International Equity	S&P Developed Ex-U.S. BMI NTR
Emerging Market Equity	S&P Emerging BMI NTR
U.S. REITs	Dow Jones U.S. Select REIT TR
International REITs	S&P Developed Ex-U.S. REIT NTR
Core Fixed Income	S&P U.S. Aggregate Bond Index TR
Cash Equivalents	S&P U.S. Treasury Bond 0-1 Year TR
TIPS	S&P US Treasury TIPS TR
High Yield Corporate Bonds	S&P 500 High Yield Corporate Bond Index
Commodities	S&P GSCI TR

Source: S&P Dow Jones Indices LLC, FactSet. Data as of June 28, 2024. Table is provided for illustrative purposes.

However, just because an asset class is eligible for inclusion in the index does not mean that it will be included in every or any vintage of the S&P Target Date Index Series. The data go

through several more steps to reduce the impact of outliers and weights that are determined to be too small for inclusion in order to accurately reflect the TDF landscape.

The next step in the index construction process is to separate TDFs into their peer groups based on their vintage. By looking at the weights of the target peer group, the 10th and 90th percentiles for each eligible asset class are determined. From here, the weights for each eligible asset class are winsorized at these percentiles to mitigate the influence of outliers on the weight of the final indices. For example, the 2040 peer group will calculate the percentiles for each of the 12 eligible asset classes. A majority of the funds in that peer group may have allocations to U.S. large-cap equities between the 10th and 90th percentile values, and their weights would not be adjusted. However, there may be a single fund where the U.S. large-cap equity allocation is in the 95th percentile. According to the index methodology, this value is too high, and therefore this fund's U.S. large-cap weight will be adjusted to the 90th percentile value.

Next, an average of these winsorized values are taken to determine the weights of each asset class in the vintage. Note that this is a simple winsorized average, which means it is not affected by the size of the funds in the survey. This simple average is done to give an equal representation to all funds in the survey. From the results in the previous step, an asset class must meet a minimum size requirement for inclusion in the final S&P Target Date Index. If it does not meet the minimum size, it will be excluded from the index. For asset classes that exist in the prior year's index, the weight must be at least 0.5%. For asset classes that did not exist in the prior year's index, the weight must be at least 1.5%. Once the ineligible asset classes are dropped, the remaining asset classes are scaled to 100%. These are the final weights of the subindices of the S&P Target Date Index Series.

The new asset classes and subindex weights from the annual reconstitution are determined using data as of market close on the third Friday in April. The new weights of S&P Target Date Indices go into effect after the close on the last trading day in May. Throughout the month, the weights of the subindices drift freely. After the close on the last day of each month, the index is reweighted back to its most recent annual reconstitution weight in order to prevent too much change from the pre-determined weights.

General Disclaimer

© 2024 S&P Dow Jones Indices. All rights reserved. S&P, S&P 500, SPX, SPY, The 500, US 500, US 30, S&P 100, S&P COMPOSITE 1500, S&P 400, S&P MIDCAP 400, S&P 600, S&P SMALLCAP 600, S&P GIVI, GLOBAL TITANS, DIVIDEND ARISTOCRATS, DIVIDEND MONARCHS, BUYBACK ARISTOCRATS, SELECT SECTOR, S&P MAESTRO, S&P PRISM, GICS, SPIVA, SPDR, INDEXOLOGY, iTraxx, iBoxx, ABX, ADBI, CDX, CMBX, MBX, MCDX, PRIMEX, HHPI and SOVX are trademarks of S&P Global, Inc. ("S&P Global") or its affiliates. DOW JONES, DJIA, THE DOW and DOW JONES INDUSTRIAL AVERAGE are trademarks of Dow Jones Trademark Holdings LLC ("Dow Jones"). These trademarks together with others have been licensed to S&P Dow Jones Indices LLC. Redistribution or reproduction in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. This document does not constitute an offer of services in jurisdictions where S&P Dow Jones Indices LLC, S&P Global, Dow Jones or their respective affiliates (collectively "S&P Dow Jones Indices") do not have the necessary licenses. Except for certain custom index calculation services, all information provided by S&P Dow Jones Indices is impersonal and not tailored to the needs of any person, entity or group of persons. S&P Dow Jones Indices receives compensation in connection with licensing its indices to third parties and providing custom calculation services. Past performance of an index is not an indication or guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index may be available through investable instruments based on that index. S&P Dow Jones Indices does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P Dow Jones Indices makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. Index performance does not reflect trading costs, management fees or expenses. S&P Dow Jones Indices makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. S&P Dow Jones Indices is not an investment adviser, commodity trading advisor, commodity pool operator, broker dealer, fiduciary, promoter" (as defined in the Investment Company Act of 1940, as amended), "expert" as enumerated within 15 U.S.C. § 77k(a) or tax advisor. Inclusion of a security, commodity, crypto currency or other asset within an index is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security, commodity, crypto currency or other asset, nor is it considered to be investment advice or commodity trading advice. Closing prices for S&P Dow Jones Indices' US benchmark indices are calculated by S&P Dow Jones Indices based on the closing price of the individual constituents of the index as set by their primary exchange. Closing prices are received by S&P Dow Jones Indices from one of its third party vendors and verified by comparing them with prices from an alternative vendor. The vendors receive the closing price from the primary exchanges. Real-time intraday prices are calculated similarly without a second verification.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof ("Content") may be modified, reverse-engineered, reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P Dow Jones Indices. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices and its third-party data providers and licensors (collectively "S&P Dow Jones Indices Parties") do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN "AS IS" BASIS. S&P DOW JONES INDICES PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

S&P Global keeps certain activities of its various divisions and business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain divisions and business units of S&P Global may have information that is not available to other business units. S&P Global has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate or otherwise address.