

S&P Target Date Scorecard

Contributors

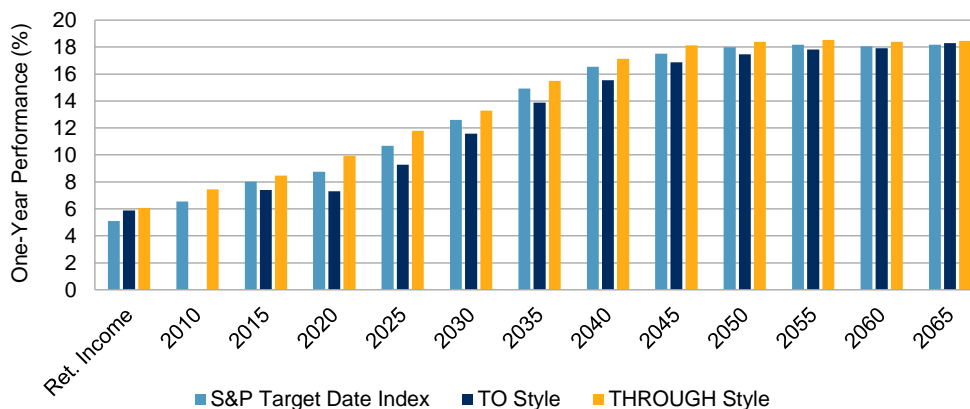
Hamish Preston
 Director
 U.S. Equity Indices
hamish.preston@spglobal.com

Fei Wang
 Senior Analyst
 U.S. Equity Indices
fei.wang@spglobal.com

SUMMARY

- 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 offers representative benchmarks for TDFs.** The series is investable, comprises consensus-derived asset allocation weights, and its composition is known in advance of evaluation periods.
- **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.
- 2021 was a positive year for U.S. equities, and the [S&P 500®](#) (up 29%) outperformed the [S&P MidCap 400®](#) (up 25%) and [S&P Small Cap 600®](#) (up 27%) for the fifth consecutive year. After renewed optimism over the U.S. economic outlook provided tailwinds for smaller, more domestically focused companies, large caps proved more resilient to inflation worries and virus variant concerns.
- Unsurprisingly, **S&P Target Date Indices with higher equity allocations outperformed:** far-dated vintages posted higher returns than their nearer-dated counterparts, and “Through” style indices outperformed their “To” style counterparts.

Exhibit 1: Higher Equity Allocations Helped to Explain Differences in Performance



Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2020, to Dec. 31, 2021. Index performance based on total return in USD. The S&P Target Date To 2010 was discontinued effective June 5, 2016. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

- As has been typical in our reports, **near-dated S&P Target Date Indices had higher risk-adjusted performance than their far-dated counterparts.** The risk reduction from allocating more heavily to fixed income more than compensated for lower performance.

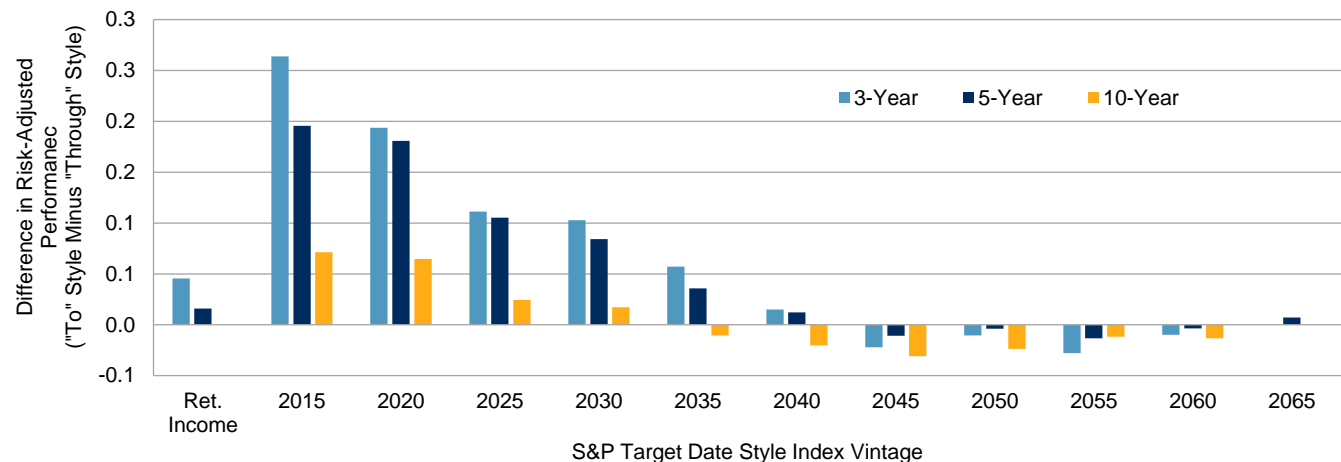
Exhibit 2: S&P Target Date Indices Risk/Return Overview

PERIOD	RET. INCOME	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065+
PERFORMANCE (%)													
2021	5.11	6.54	8.01	8.76	10.67	12.61	14.93	16.55	17.51	17.99	18.19	18.05	18.17
3-Year	9.03	10.22	11.19	11.79	13.37	14.90	16.56	17.69	18.32	18.66	18.76	18.84	18.88
5-Year	6.52	7.36	8.08	8.60	9.65	10.63	11.67	12.40	12.81	13.07	13.18	13.28	13.30
10-Year	5.59	6.55	7.43	8.13	9.01	9.83	10.63	11.19	11.56	11.83	12.00	12.05	-
ANNUALIZED VOLATILITY (%)													
3-Year	6.08	6.91	7.86	8.71	10.32	12.02	13.72	14.85	15.52	15.85	16.02	16.07	16.07
5-Year	5.26	6.01	6.85	7.61	8.99	10.46	11.90	12.86	13.41	13.71	13.84	13.90	13.90
10-Year	4.55	5.39	6.28	7.09	8.20	9.32	10.39	11.12	11.58	11.89	12.05	12.11	-
RISK-ADJUSTED PERFORMANCE													
3-Year	1.49	1.48	1.42	1.35	1.29	1.24	1.21	1.19	1.18	1.18	1.17	1.17	1.18
5-Year	1.24	1.23	1.18	1.13	1.07	1.02	0.98	0.96	0.96	0.95	0.95	0.96	0.96
10-Year	1.23	1.22	1.18	1.15	1.10	1.06	1.02	1.01	1.00	0.99	1.00	0.99	-

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2021. All figures are annualized, based on monthly total returns. Past performance is no guarantee of future results. Table is provided for illustrative purposes

- Similarly, **near-dated “To” style indices posted higher risk-adjusted performance than their “Through” style counterparts,** especially over three- and five-year horizons. But far-dated “Through” style indices’ higher performance more than compensated for higher volatility, especially over the 10-year horizon.

Exhibit 3: Difference in Risk-Adjusted Performance



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2021. Chart shows the difference in risk-adjusted performance between “To” and “Through” S&P Target Date Style Indices. Figures based on annualized returns, volatilities, based on monthly total returns. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

- TDFs with more assets typically outperformed their smaller counterparts; asset-weighted returns were higher than equal-weighted returns for most vintages over one-, three- and five-year periods. However, longer-dated TDFs with fewer assets outperformed in 2021.

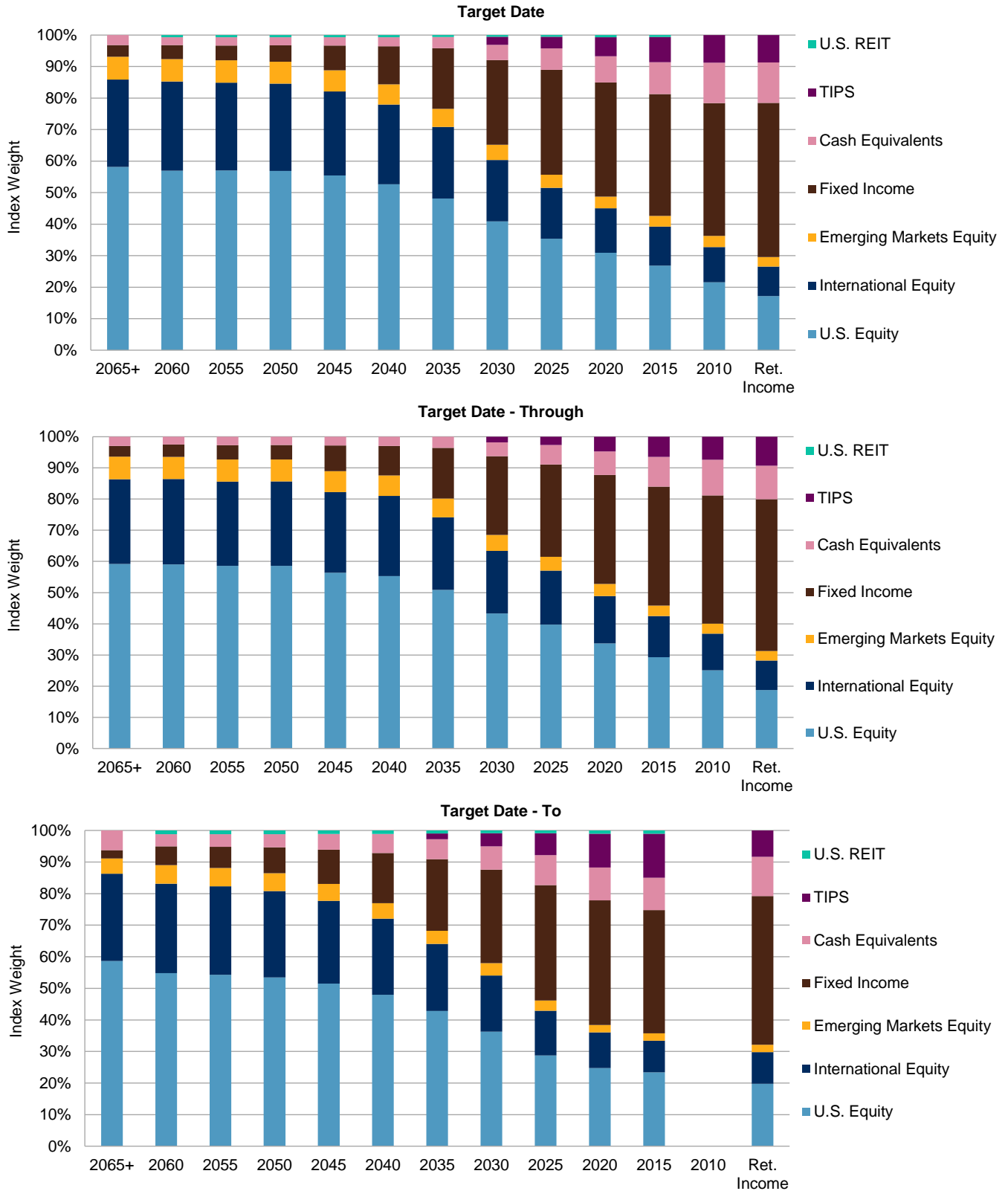
A UNIQUE SCORECARD FOR THE TARGET DATE UNIVERSE

The S&P Target Date Scorecard presents the performance of TDFs as 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 Index¹ 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 the 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:** Target date fund 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 also may lack transparency with respect to the method behind their calculation 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.
- **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-weighted 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.

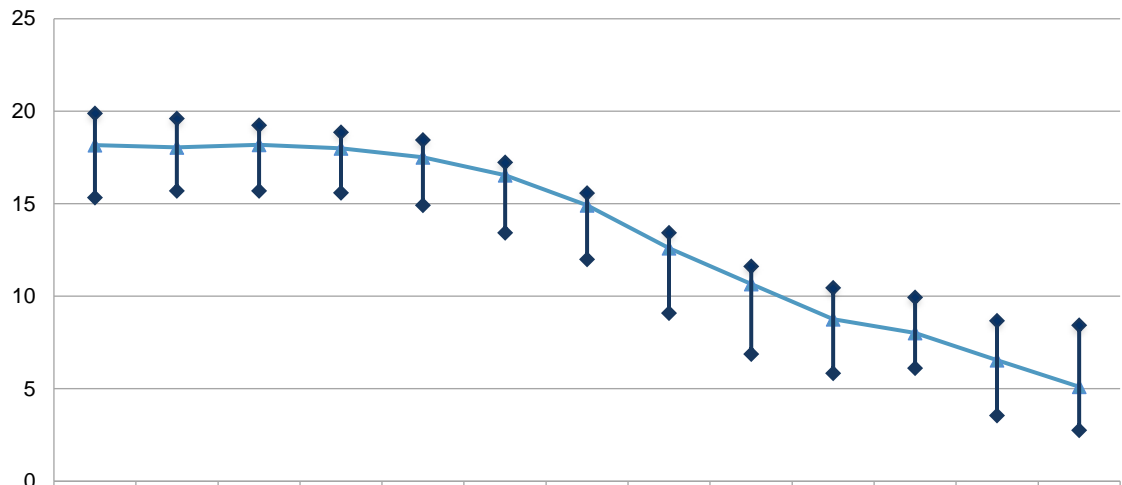
¹ It is not possible to invest directly in an index. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance.

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



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2021. Charts are provided for illustrative purposes. Past performance is no guarantee of future results. The S&P Target Date To 2010 was discontinued effective June 5, 2016.

Report 2: Target Date Fund Category Performance



	2065+	2060	2055	2050	2045	2040	2035	2030	2025	2020	2015	2010	Ret Inc
◆ 90th Percentile	19.88	19.60	19.25	18.87	18.45	17.23	15.58	13.44	11.62	10.45	9.93	8.67	8.42
◆ 10th Percentile	15.34	15.70	15.70	15.59	14.92	13.43	12.00	9.08	6.87	5.84	6.12	3.56	2.76
▲ Index Performance	18.17	18.05	18.19	17.99	17.51	16.55	14.93	12.61	10.67	8.76	8.01	6.54	5.11

Source: S&P Dow Jones Indices LLC, Morningstar Direct. Data as of Dec. 31, 2021. Chart is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 3: Average Target Date Fund Performance			
CATEGORY	ONE-YEAR (%)	THREE-YEAR (ANNUALIZED, %)	FIVE-YEAR (ANNUALIZED, %)
Ret. Income TDFs (EW)	5.42	8.97	6.35
Ret. Income TDFs (AW)	5.82	9.77	6.67
S&P Target Date Ret. Income	5.11	9.03	6.52
S&P Target Date To Ret. Income	5.89	9.44	6.57
S&P Target Date Through Ret. Income	6.07	9.90	7.03
2010 TDFs (EW)	6.05	10.01	7.29
2010 TDFs (AW)	7.58	10.51	7.36
S&P Target Date 2010	6.54	10.22	7.36
S&P Target Date To 2010*	-	-	-
S&P Target Date Through 2010	7.46	10.88	7.81
2015 TDFs (EW)	7.91	11.15	8.04
2015 TDFs (AW)	8.37	11.47	8.06
S&P Target Date 2015	8.01	11.19	8.08
S&P Target Date To 2015	7.41	10.19	7.31
S&P Target Date Through 2015	8.46	11.69	8.53
2020 TDFs (EW)	8.22	11.77	8.51
2020 TDFs (AW)	9.19	12.49	8.77
S&P Target Date 2020	8.76	11.79	8.60
S&P Target Date To 2020	7.31	10.30	7.62
S&P Target Date Through 2020	9.94	13.00	9.37
2025 TDFs (EW)	9.43	12.96	9.34
2025 TDFs (AW)	10.31	13.95	9.75
S&P Target Date 2025	10.67	13.37	9.65
S&P Target Date To 2025	9.28	12.14	8.80
S&P Target Date Through 2025	11.80	14.35	10.27
2030 TDFs (EW)	11.46	14.79	10.59
2030 TDFs (AW)	12.03	15.63	10.89
S&P Target Date 2030	12.61	14.90	10.63
S&P Target Date To 2030	11.58	13.92	9.95
S&P Target Date Through 2030	13.28	15.54	11.09

Source: S&P Dow Jones Indices LLC, Morningstar Direct. Data as of Dec. 31, 2021. "EW" indicates equal weighted. "AW" represents asset weighted. Table is provided for illustrative purposes. Past performance is no guarantee of future results. See Glossary for more information.

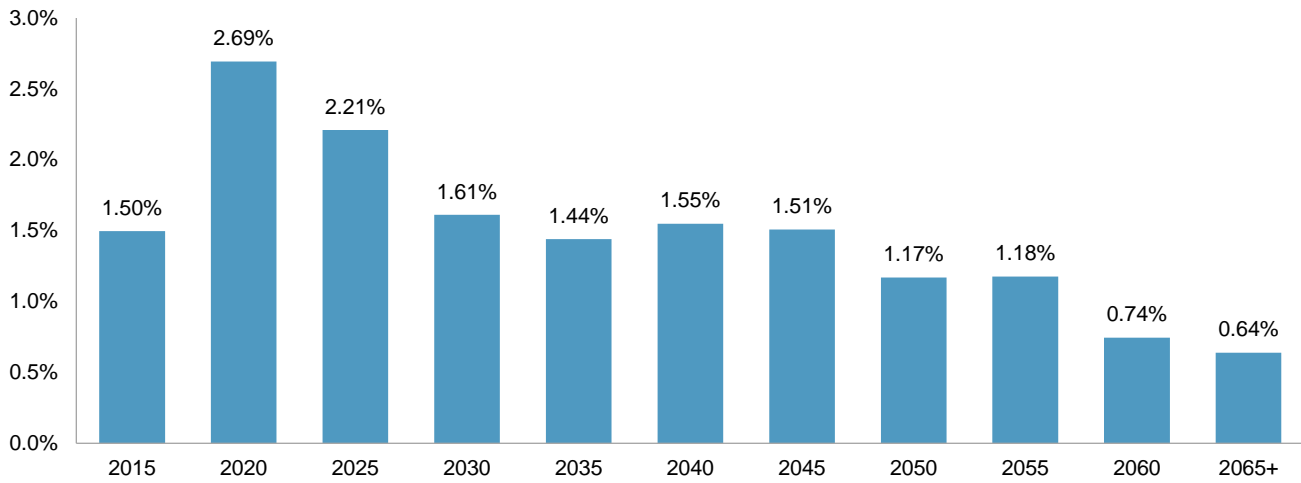
*The S&P Target Date To 2010 was discontinued effective June 5, 2016.

Report 3: Average Target Date Fund Performance (cont.)				
CATEGORY	ONE-YEAR (%)	THREE-YEAR (ANNUALIZED, %)	FIVE-YEAR (ANNUALIZED, %)	
2035 TDFs (EW)	13.76	16.60	11.77	
2035 TDFs (AW)	14.29	17.69	12.17	
S&P Target Date 2035	14.93	16.56	11.67	
S&P Target Date To 2035	13.89	15.60	10.95	
S&P Target Date Through 2035	15.49	17.04	12.08	
2040 TDFs (EW)	15.49	17.85	12.55	
2040 TDFs (AW)	15.82	18.93	12.91	
S&P Target Date 2040	16.55	17.69	12.40	
S&P Target Date To 2040	15.54	16.65	11.70	
S&P Target Date Through 2040	17.13	18.20	12.81	
2045 TDFs (EW)	16.65	18.67	13.06	
2045 TDFs (AW)	16.54	19.49	13.25	
S&P Target Date 2045	17.51	18.32	12.81	
S&P Target Date To 2045	16.87	17.43	12.20	
S&P Target Date Through 2045	18.14	18.94	13.26	
2050 TDFs (EW)	17.07	18.97	13.24	
2050 TDFs (AW)	16.76	19.69	13.37	
S&P Target Date 2050	17.99	18.66	13.07	
S&P Target Date To 2050	17.46	17.96	12.56	
S&P Target Date Through 2050	18.39	19.13	13.41	
2055 TDFs (EW)	17.23	19.14	13.38	
2055 TDFs (AW)	16.75	19.70	13.41	
S&P Target Date 2055	18.19	18.76	13.18	
S&P Target Date To 2055	17.82	18.02	12.65	
S&P Target Date Through 2055	18.52	19.20	13.45	
2060 TDFs (EW)	17.39	19.23	13.45	
2060 TDFs (AW)	16.77	19.78	13.52	
S&P Target Date 2060	18.05	18.84	13.28	
S&P Target Date To 2060	17.91	18.46	12.98	
S&P Target Date Through 2060	18.39	19.20	13.47	
2065+ TDFs (EW)**	17.34	19.51	-	
2065+ TDFs (AW)**	16.74	19.40	-	
S&P Target Date 2065+	18.17	18.88	13.30	
S&P Target Date To 2065+	18.29	18.58	13.05	
S&P Target Date Through 2065+	18.46	19.22	13.48	

Source: S&P Dow Jones Indices LLC, Morningstar Direct. Data as of Dec. 31, 2021. "EW" indicates equal weighted. "AW" represents asset weighted. Table is provided for illustrative purposes. Past performance is no guarantee of future results. See Glossary for more information.

**Five-year annualized returns for 2065+ TDFs (EW) and 2065+ TDFs (AW) are not available.

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



■ Difference in Three-Year Annualized Total Return Between To & Through Benchmarks

Source: S&P Dow Jones Indices LLC, Morningstar Direct. Data as of Dec. 31, 2021. Chart is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 5: Quartile Breakpoints of Target Date Funds

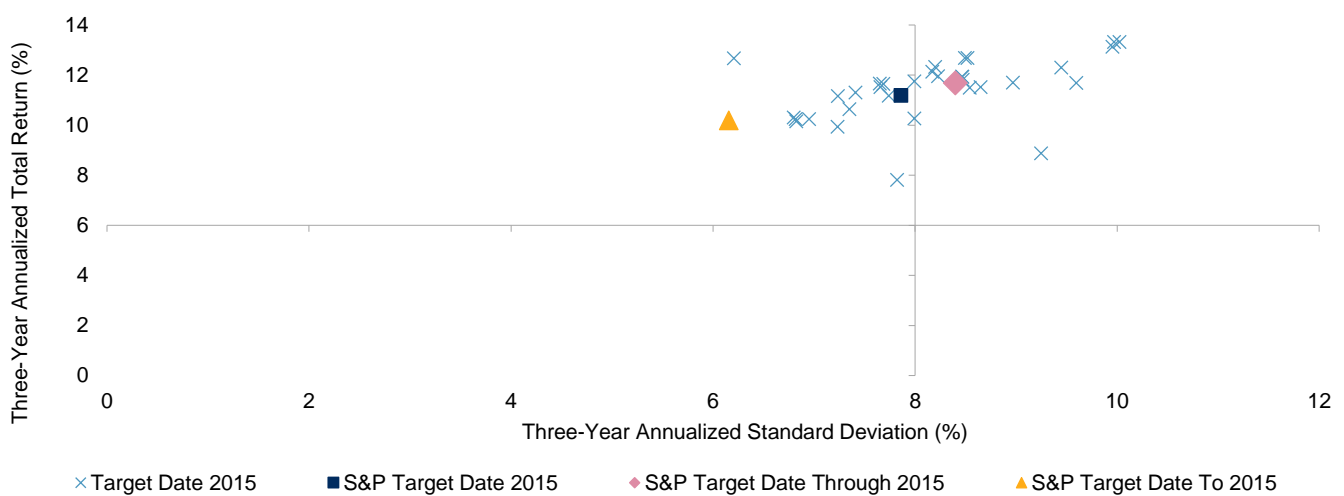
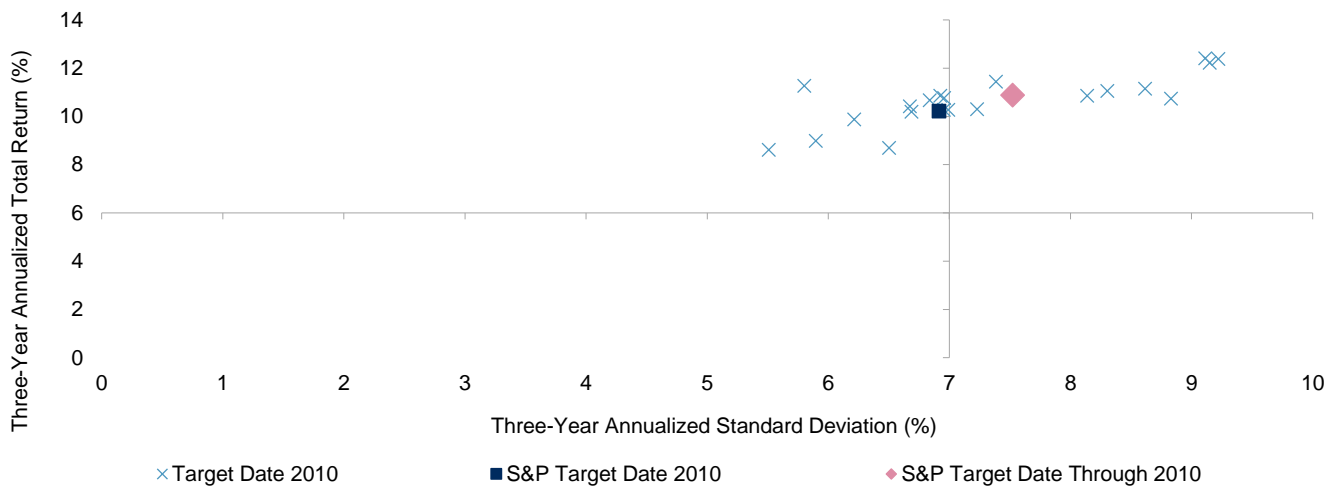
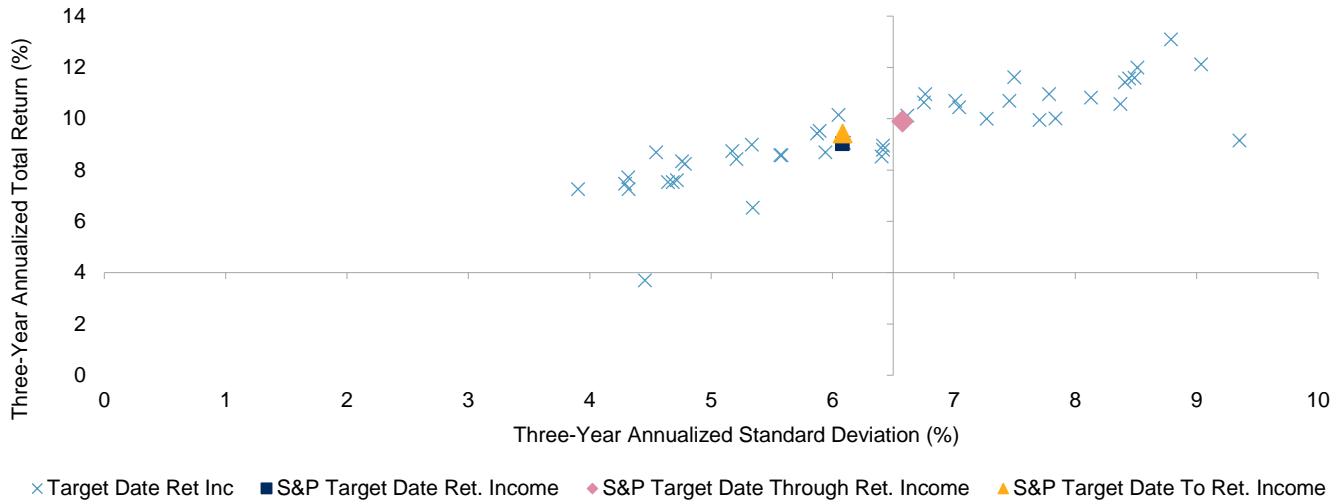
FUND CATEGORY	25 th PERCENTILE	MEDIAN	75 th PERCENTILE
ONE-YEAR			
Ret. Income	3.23	5.80	6.76
Target 2010	4.38	5.65	7.64
Target 2015	6.88	7.85	8.96
Target 2020	6.97	8.59	9.55
Target 2025	8.56	9.74	10.73
Target 2030	10.82	11.54	12.63
Target 2035	13.03	13.87	14.60
Target 2040	14.79	15.78	16.41
Target 2045	15.88	16.73	17.52
Target 2050	16.26	17.00	18.01
Target 2055	16.44	17.19	18.10
Target 2060	16.50	17.32	18.19
Target 2065+	16.19	17.17	18.48

Source: S&P Dow Jones Indices LLC, Morningstar Direct. Data as of Dec. 31, 2021. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 5: Quartile Breakpoints of Target Date Funds (cont.)			
FUND CATEGORY	25th PERCENTILE	MEDIAN	75th PERCENTILE
THREE-YEAR			
Ret. Income	7.62	9.16	10.24
Target 2010	8.77	10.19	10.86
Target 2015	10.51	11.50	11.94
Target 2020	10.68	12.07	13.05
Target 2025	12.46	13.37	14.35
Target 2030	14.26	15.16	16.02
Target 2035	15.96	16.71	17.96
Target 2040	17.13	18.07	19.08
Target 2045	18.04	18.92	19.64
Target 2050	18.22	19.21	19.91
Target 2055	18.30	19.24	20.06
Target 2060	18.43	19.41	20.10
Target 2065+	18.39	19.48	20.50
FIVE-YEAR			
Ret. Income	5.75	6.69	7.22
Target 2010	6.70	7.52	7.85
Target 2015	7.68	8.19	8.63
Target 2020	7.79	8.62	9.30
Target 2025	8.91	9.59	10.33
Target 2030	10.10	10.88	11.41
Target 2035	11.21	11.82	12.59
Target 2040	12.04	12.63	13.31
Target 2045	12.49	13.08	13.75
Target 2050	12.66	13.29	13.88
Target 2055	12.70	13.30	13.96
Target 2060	12.77	13.48	14.02
Target 2065+*	-	-	-

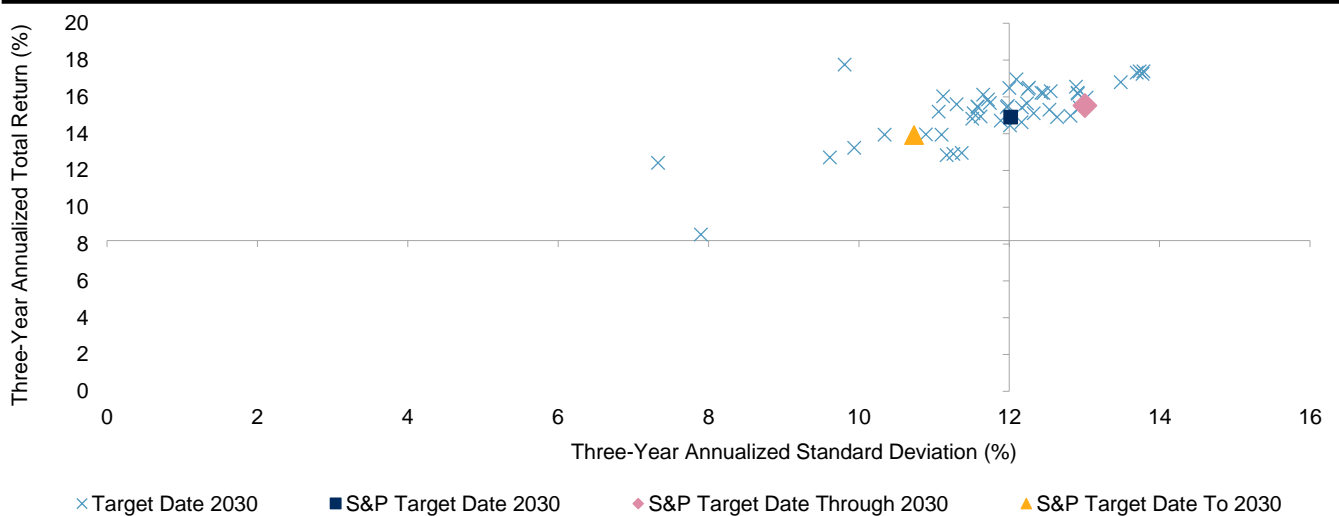
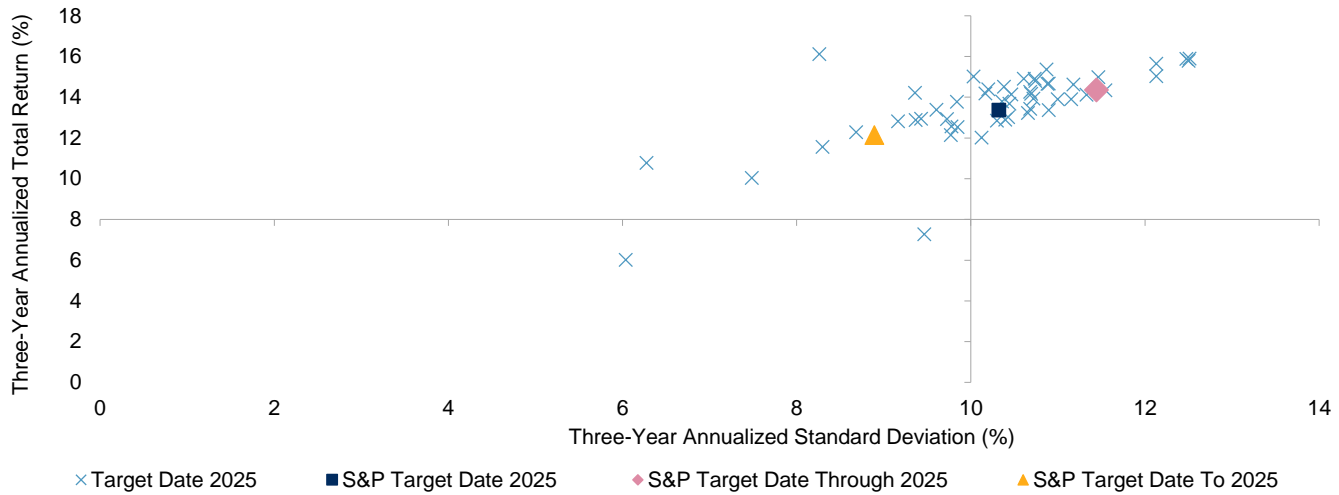
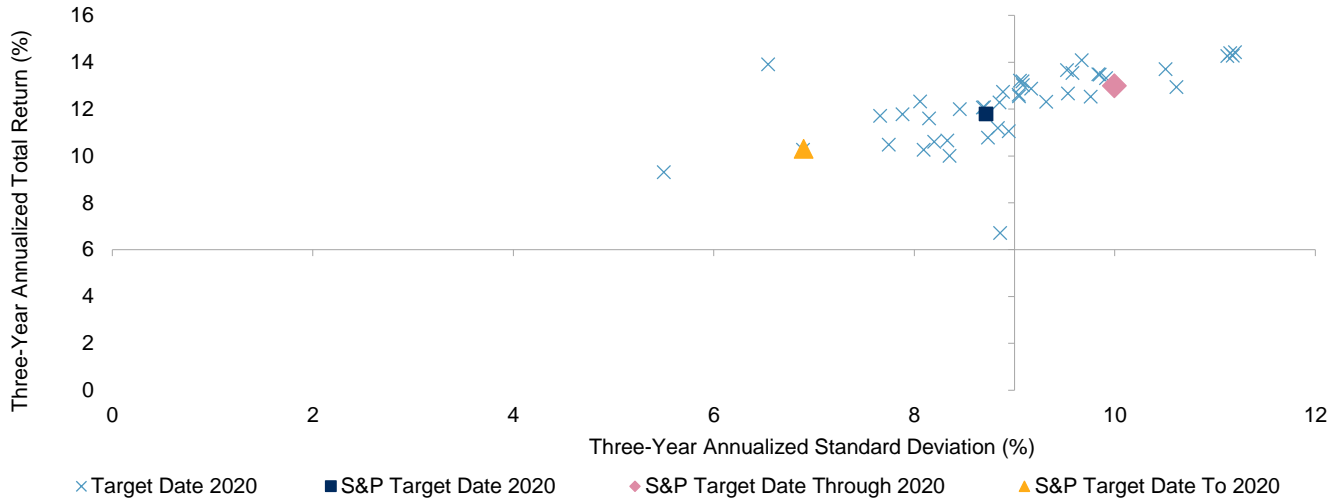
Source: S&P Dow Jones Indices LLC, Morningstar Direct. Data as of Dec. 31, 2021. Table is provided for illustrative purposes. Past performance is no guarantee of future results. *Target 2065+ does not have five-year data.

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



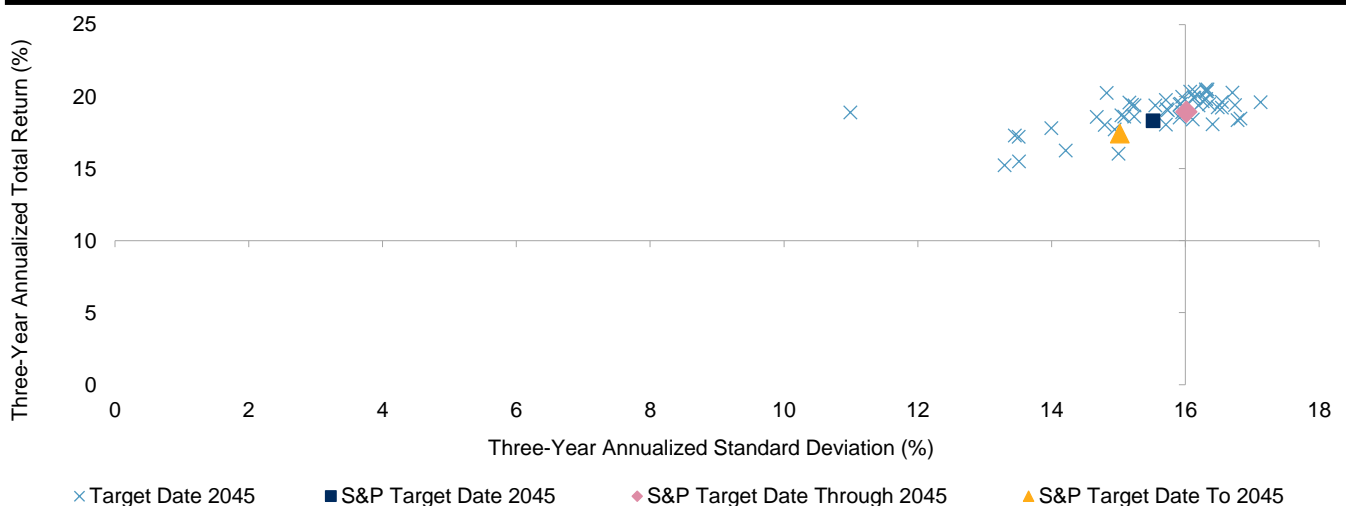
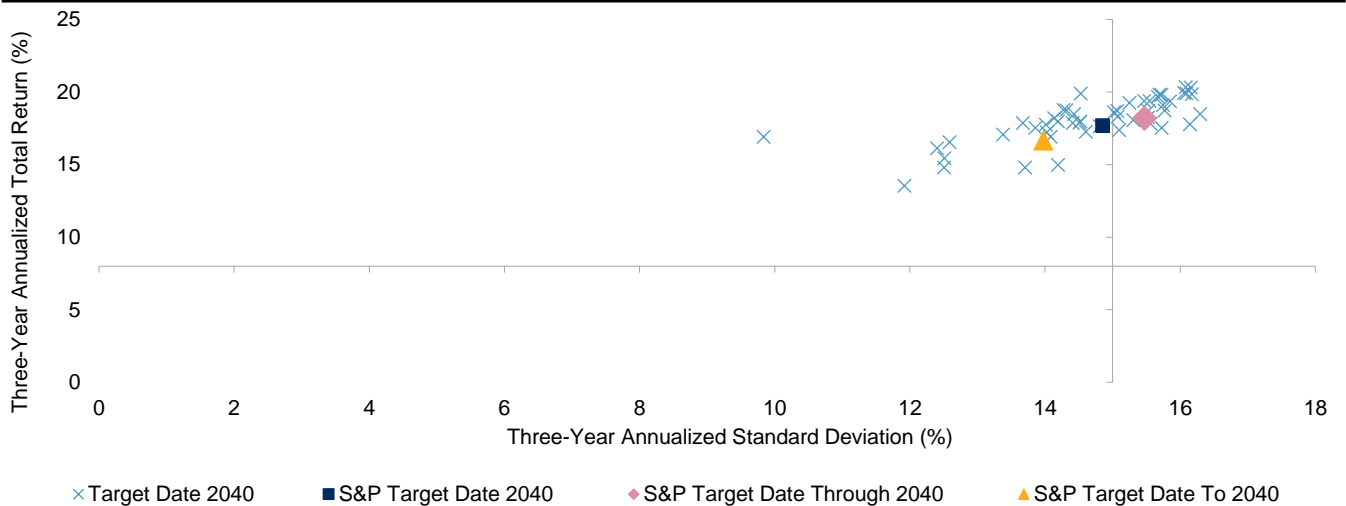
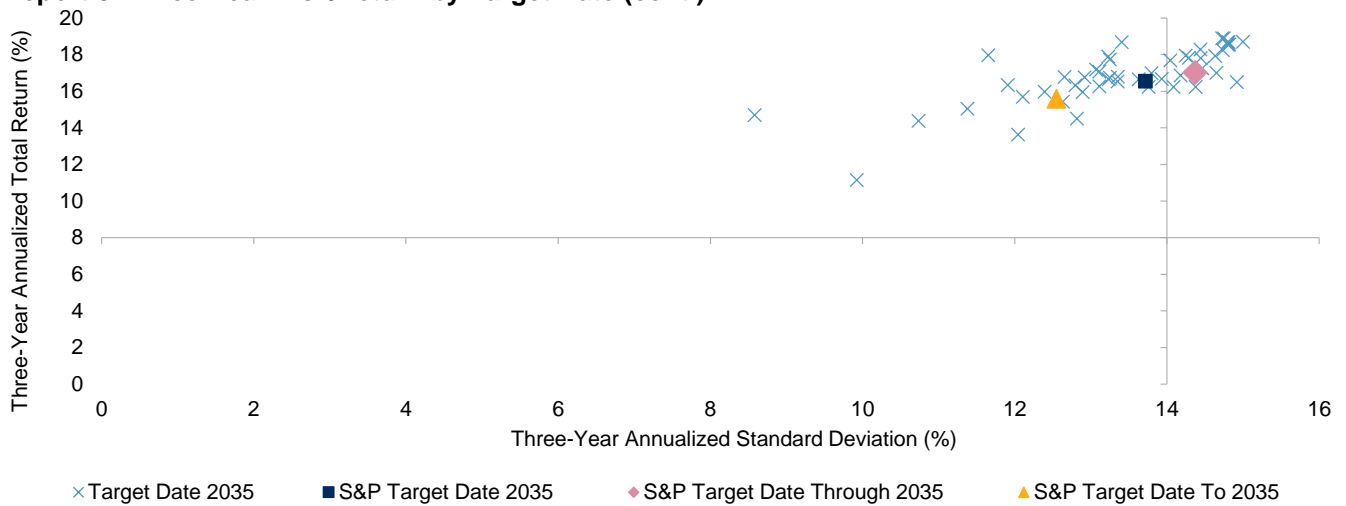
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Report 6: Three-Year Risk/Return by Target Date (cont.)



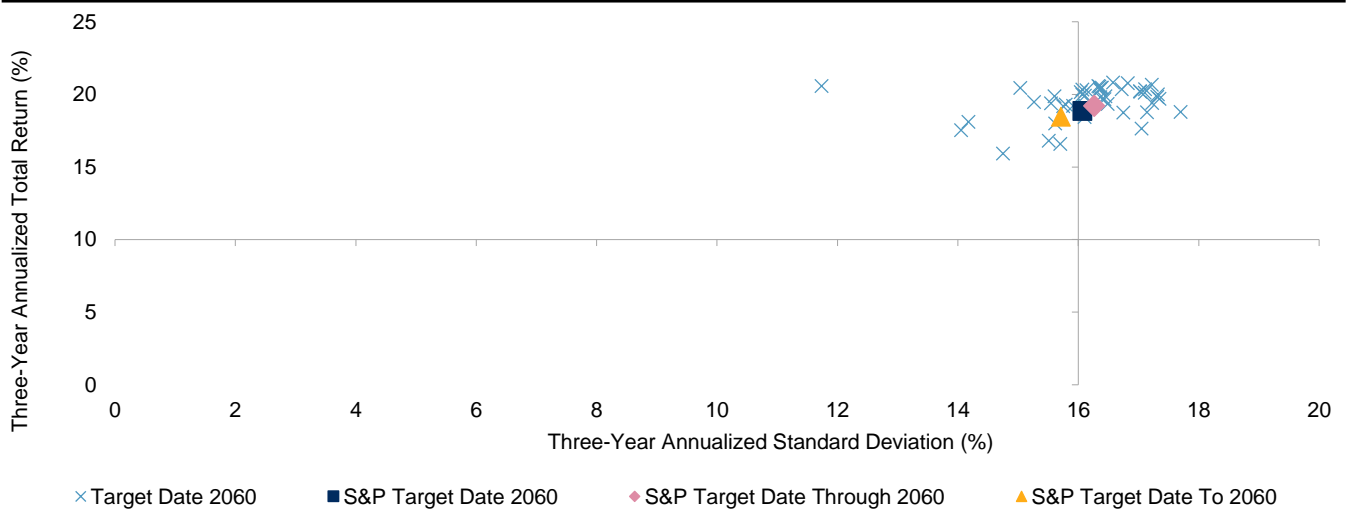
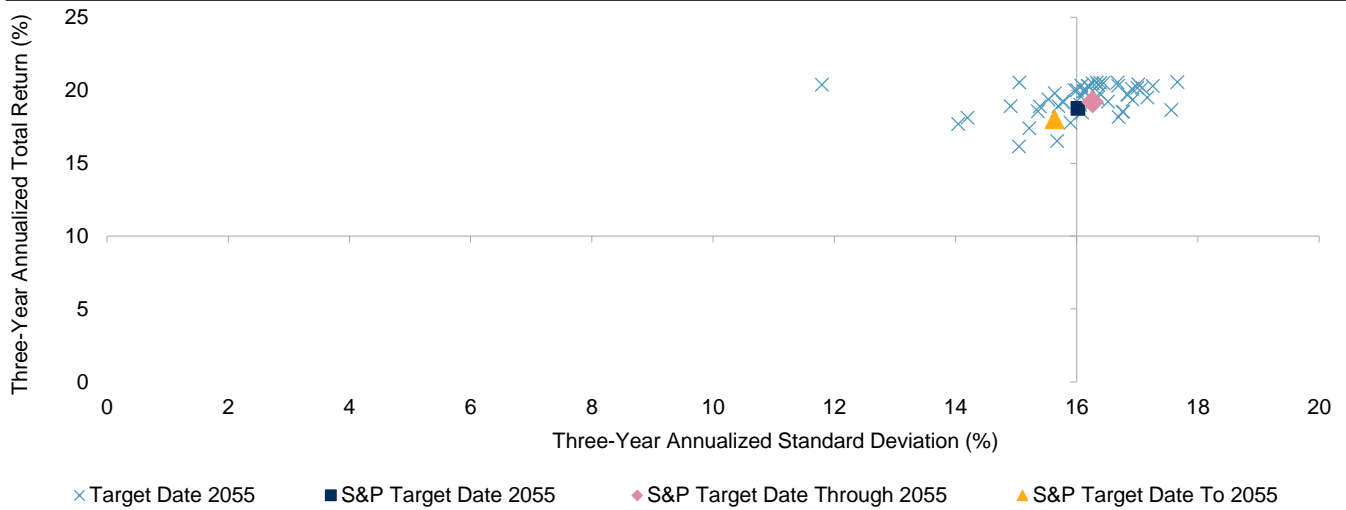
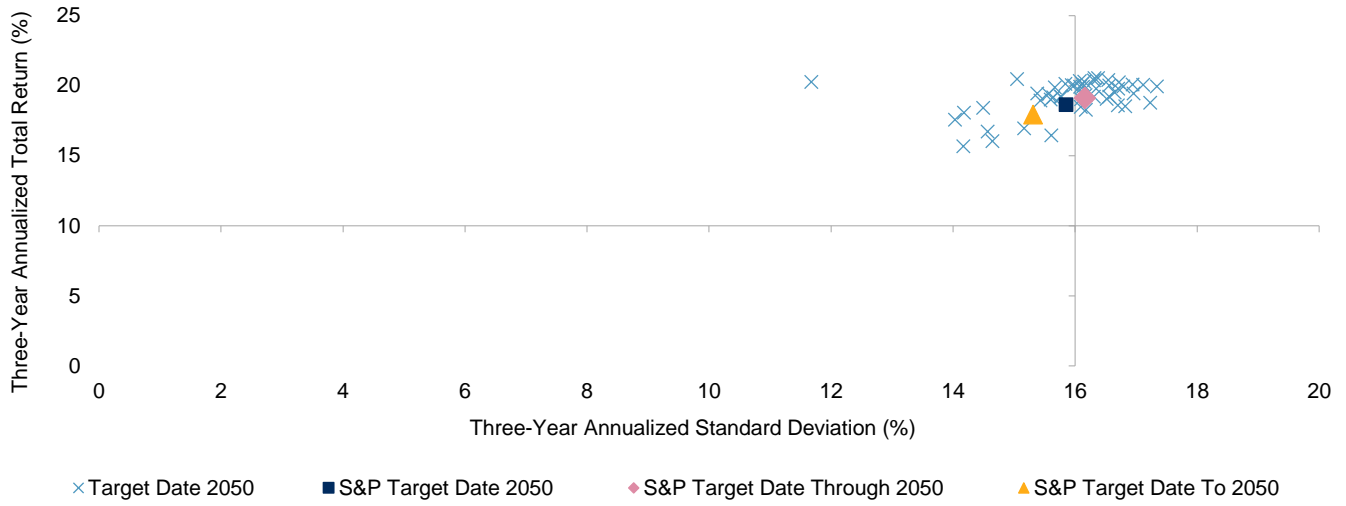
Source: S&P Dow Jones Indices LLC, Morningstar Direct. Data as of Dec. 31, 2021. Charts are provided for illustrative purposes. Past performance is no guarantee of future results.

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



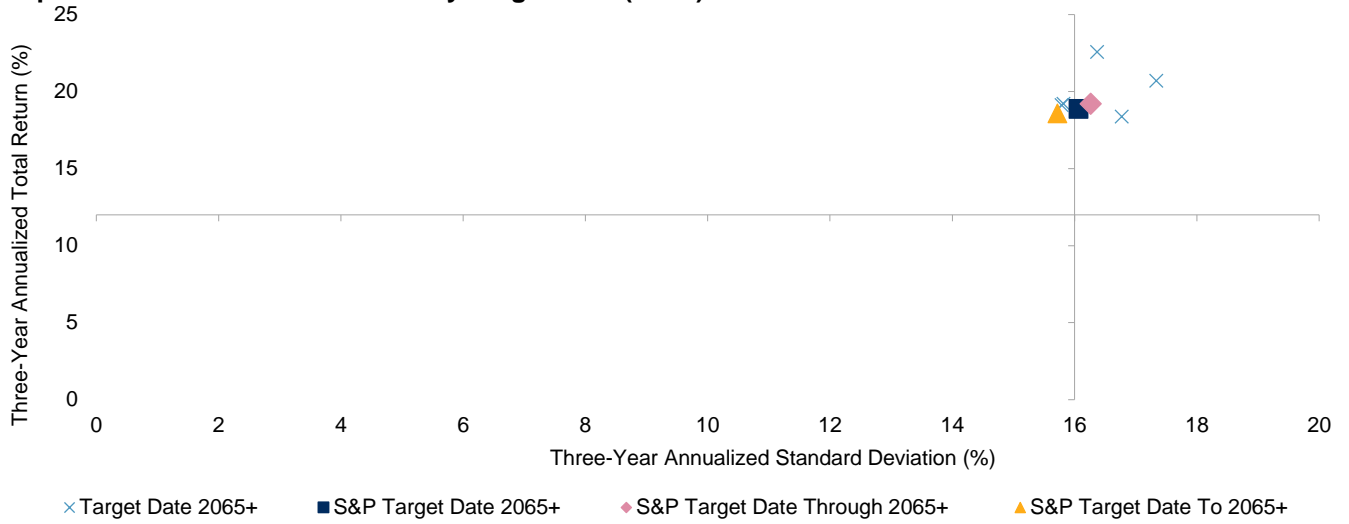
Source: S&P Dow Jones Indices LLC, Morningstar Direct. Data as of Dec. 31, 2021. Charts are provided for illustrative purposes. Past performance is no guarantee of future results.

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



Source: S&P Dow Jones Indices LLC, Morningstar Direct. Data as of Dec. 31, 2021. Charts are provided for illustrative purposes. Past performance is no guarantee of future results.

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



Source: S&P Dow Jones Indices LLC, Morningstar Direct. Data as of Dec. 31, 2021. Charts are provided for illustrative purposes. Past performance is no guarantee of future results.

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.

Quartiles Breakpoints

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.

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