

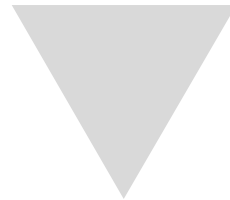
HEALTH WEALTH CAREER

THRIFT SAVINGS PLAN

LIFECYCLE FUND ASSET ALLOCATION

November 29, 2016

Jay Love
Andrew Scheufele



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- Capital Market Assumptions and Efficient Frontier
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TSP GOALS FOR LIFECYCLE FUND DEVELOPMENT

To construct customized Lifecycle Funds that are:

- composed of the TSP Core Funds
- a series of evolving targeted maturity funds that become more conservative as the set “maturity date”¹ approaches
- able to accommodate daily cash flows and minimize transaction costs
- easily communicated and understood by participants
- a convenient and automatic way for participants to diversify their investment account

¹The target maturity date is the date the participant expects to begin withdrawing money from his or her account. This date may or may not be the date the participant retires from his or her agency or even the date the participant stops working.

PLAN CHARACTERISTICS

In arriving at its fund structure recommendations, Mercer considered:

- TSP participant demographic information. We assumed that the participants were members of FERS and based our projections on typical account balances and contribution patterns for the targeted group for each Lifecycle Fund
- Underlying composition and management of each of the five Core Funds, including the unique aspects of the G Fund:
 - Returns equivalent to long government bond yields
 - No default risk
- Market conditions and long-term capital market outlook

OVERVIEW

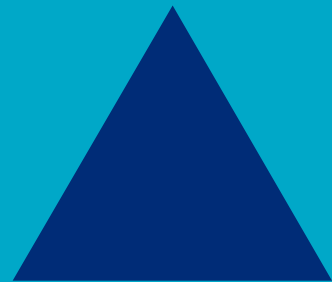
- The purpose of this study is to review the current asset allocations of the Lifecycle Funds of the Thrift Savings Plan
- Key objectives and metrics:
 - Provide opportunity to achieve sufficient retirement income for career FERS employees
 - *Metric: Range of account balances and replacement ratios*
 - Provide capital preservation for participants as they approach retirement
 - *Metric: Likelihood of investment loss in final two years before retirement*
 - Limit likelihood of running out of assets in retirement
 - *Metric: Expected account drawdown age*

EXECUTIVE SUMMARY

A review of the analysis and metrics highlights the following:

- Given the rise in rates built into the assumptions, G Fund continues to outperform F Fund in the short term; therefore, retaining the current overweight allocation to the G Fund relative to the F Fund is recommended
- Overweighting or underweighting position in small cap equity (S Fund) has a negligible impact; therefore no change is recommended
- Increasing international equity weight has a negligible impact; therefore no change is recommended
- Adding equity along the glide path improves projected account balances and increases expected years to account drawdown post-retirement; however, volatility of returns and event risk around target retirement age increase with additional equity exposure
 - Recommend considering potential benefits and risk tradeoffs of higher equity weight along glide path

THRIFT SAVINGS PLAN: MEAN-VARIANCE AND EFFICIENT FRONTIER ANALYSIS



MERCER CAPITAL MARKET ASSUMPTIONS

- We conducted our efficient frontier analysis using capital market assumptions over a 20-year time horizon:
 - Real economic growth is 2.3%
 - Inflation is 2.2%
 - For equities, the table below breaks down the components for our equity assumptions

	C Fund	S Fund	I Fund
Inflation	2.2%	2.2%	1.7%
Real Earnings Growth	2.3%	3.6%	2.1%
Dividend/Income	2.7%	1.8%	2.8%
P/E Expansion(Contraction)	-0.3%	-0.5%	0.0%
Currency Impact	0.0%	0.0%	0.5%
Total	6.8%	7.2%	7.2%

APPLYING CAPITAL MARKET ASSUMPTIONS:

- Using our capital market assumptions and statistical modeling, we calculated expected risk and return for each of the five core funds

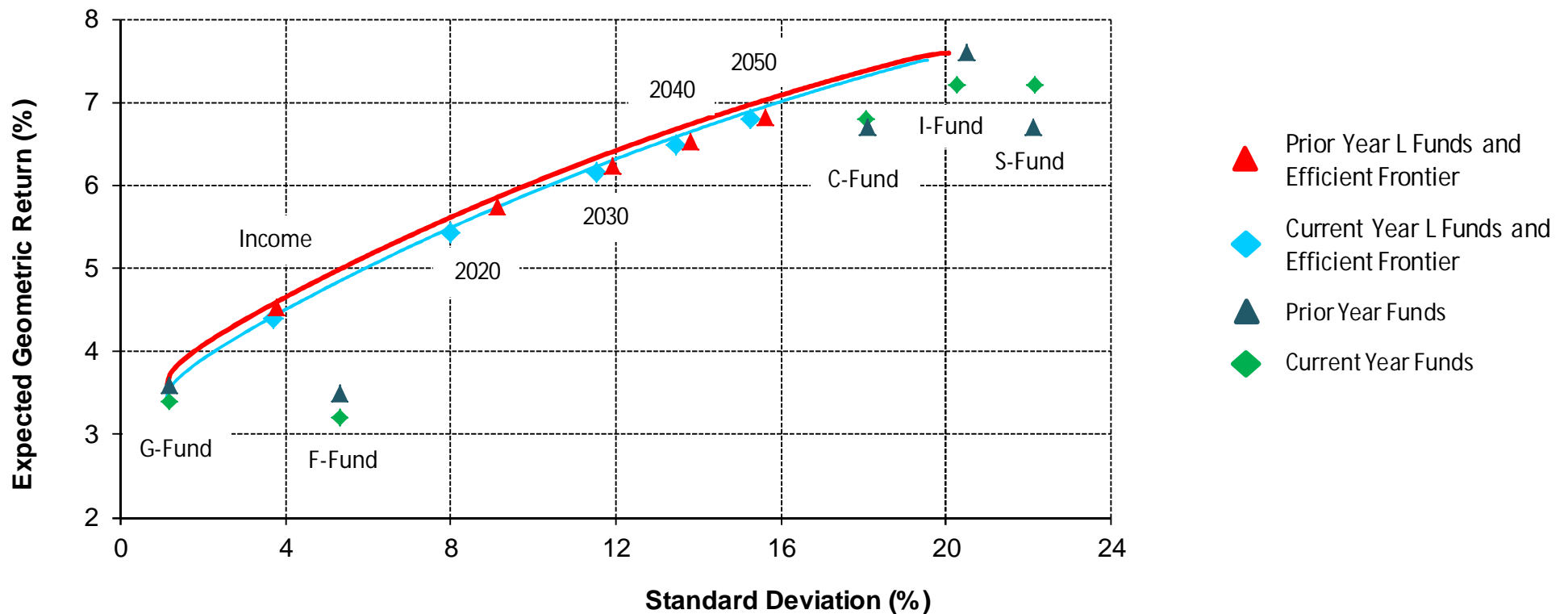
	Geometric Return	Change in Return from 2015 Study	Standard Deviation	Interest and Dividend Income
C Fund: Large Cap Equity	6.8%	0.1%	18.1%	2.0%
S Fund: Small Cap Equity	7.2%	0.5%	22.1%	1.6%
I Fund: International Equity	7.2%	(0.4%)	20.3%	3.6%
F Fund: Broad Market FI	3.2%	(0.3%)	5.3%	1.9%
G Fund: Government Yields	3.4%	(0.2%)	1.2%	1.9%

- We also need to set the correlation assumptions – very important in determining the diversification benefits. Correlation tells how much the markets move together (high correlation), whether they are independent (low correlation), or even inversely related (negative correlation).

	C Fund	S Fund	I Fund	F Fund	G Fund
C Fund	1.00				
S Fund	0.91	1.00			
I Fund	0.77	0.70	1.00		
F Fund	0.11	0.10	0.03	1.00	
G Fund	0.00	0.00	0.00	-0.10	1.00

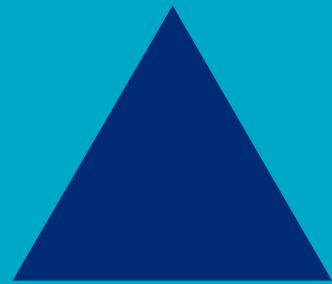
* Income is current yield as of 06/30/2016

POSITION OF LIFECYCLE FUNDS ON THE EFFICIENT FRONTIER: INCLUDING 2015 AND 2016 (20-YEAR EXPECTED RETURNS)



- Return expectations have declined from prior year for I Fund, F Fund, and G Fund
- C Fund and S Fund return expectations have increased from 2015
- Portfolios are closer to the efficient frontier in 2016

STOCHASTIC MODELING



STOCHASTIC MODELING

- We projected inflation, economic growth, salary growth, corporate profits, P/E ratios, interest rates and exchange rates and used these results to compute capital market returns
- We also had special states of the world to accommodate these regimes:
 - Normal Growth: Above average growth with modest inflation
 - Recession: Negative economic growth, low inflation
 - Stagflation: Low economic growth, high inflation (6%)
 - Inflationary Growth: Above average growth with high inflation
 - Ideal Growth: Very high growth with very low inflation
 - Credit crunch: Severely negative growth, deflation
 - High Inflation: Inflation moves to 10%, growth slumps

MODEL OUTCOMES

- Incorporate demographic assumptions
- Project investment outcomes by using stochastic analysis (1,000 simulations) of:
 - Economic factors
 - Inflation, growth, interest rates, salary growth, capital market returns
 - Typical behavior of participants by age group
 - Participants increase contributions over time
 - Participants retire at approximately age 61
 - Change in asset allocation over time as the Lifecycle fund becomes more conservative

DEMOGRAPHIC ASSUMPTIONS

2015 Study Assumptions - Based upon 2014 FERS Data (using December 2014 OPM Data)

Fund	Target Demographic		Salary	Account Balance	Starting Contribution	
	by Age	Age			Rate	Salary Growth
2020	51-60	56	\$ 79,000	\$ 170,000	7.40%	3.70%
2030	41-50	46	\$ 78,000	\$ 120,000	6.30%	3.70%
2040	31-40	36	\$ 72,000	\$ 60,000	5.50%	3.70%
2050	<31	26	\$ 58,000	\$ 20,000	4.80%	3.70%

2016 Study Assumptions - Based upon 2015 FERS Data and prior study

Fund	Target Demographic		Salary	Account Balance	Starting Contribution	
	by Age	Age			Rate	Salary Growth
2020	52-61	57	\$ 82,000	\$ 180,000	7.70%	3.70%
2030	42-51	47	\$ 81,000	\$ 130,000	6.50%	3.70%
2040	32-41	37	\$ 74,000	\$ 70,000	5.70%	3.70%
2050	<32	27	\$ 58,000	\$ 25,000	5.00%	3.70%

- Account balances are based on data from 2014
 - 2015 account balances have been rolled forward with actual returns and expected contributions
- Salary has been averaged between 2014 and 2015 FERS Data
 - Salary growth based on assumed inflation rate of 2.2% and real salary growth of 1.5% consistent with OPM schedules
- Estimated contribution rate based on age-range averages across all FERS employees in 2014 averaged with 2015 FERS data
- Auto-enrollment in effect (3% auto deferral rate)

GLIDE PATHS CONSIDERED: 2016 STUDY

- Current glide path (allocations as of July 2016)

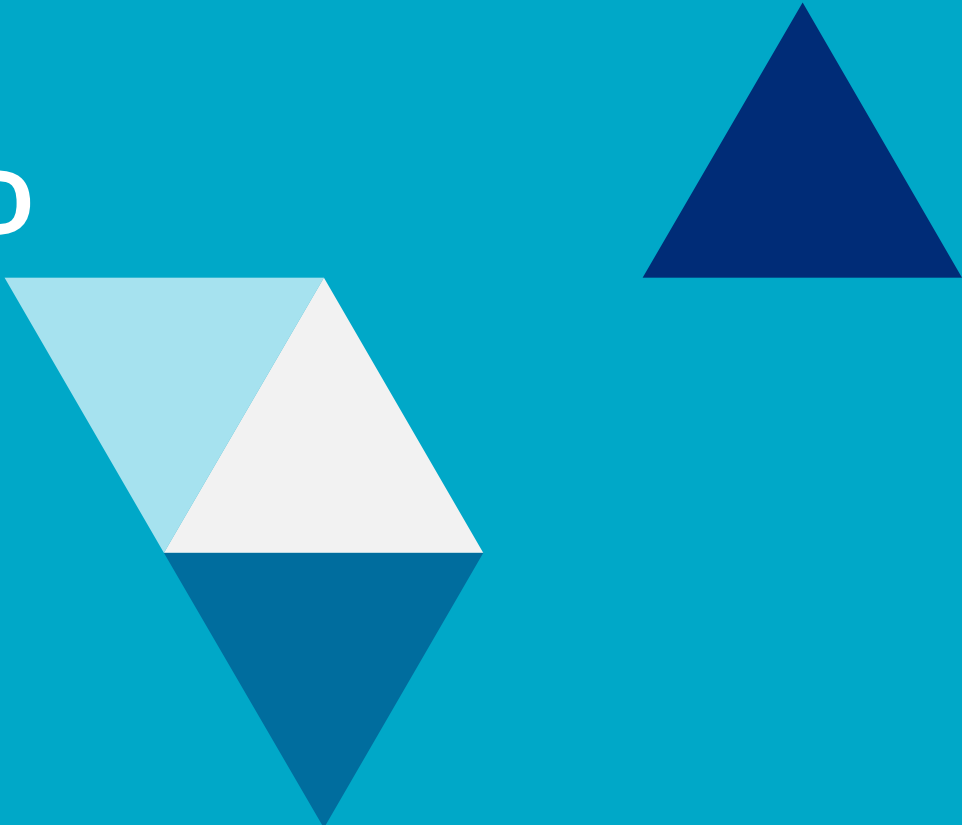
	2050	2040	2030	2020	Income
Allocations	Portfolio	Portfolio	Portfolio	Portfolio	Portfolio
C-Fund	44.14	39.55	34.53	24.32	11.20
S-Fund	14.66	12.25	9.92	6.48	2.80
I-Fund	25.20	22.20	19.05	13.20	6.00
F-Fund	3.87	5.57	5.72	5.72	6.00
G-Fund	12.13	20.43	30.78	50.28	74.00
Total	100.0	100.0	100.0	100.0	100.0
Asset Class Ratios					
Percent Fixed Income	16.0	26.0	36.5	56.0	80.0
Percent Equity	84.0	74.0	63.5	44.0	20.0
Int Eq/Tot Eq	30.0	30.0	30.0	30.0	30.0
S-Fund/Domestic Eq	24.9	23.6	22.3	21.0	20.0
F-Fund/Total FI	24.2	21.4	15.7	10.2	7.5

- Alternative glide paths reviewed in four groups

Summary of Alternative Glide Paths			
Group 1: Test Equity Allocation	Group 2: Test Domestic Equity Structure	Group 3: Test Int'l Equity	Group 4: Test Fixed Income
Equity Decreased by 5%	Small Cap Equity Percentage of Domestic Equity Reduced by 5%	International Equity Increased to 35% of Total	100% F Fund for Fixed Income
Equity Increased by 5%		International Equity Increased to 40% of Total	
Equity Increased by 10%	Small Cap Equity Percentage of Domestic Equity Increased by 5%		100% G Fund for Fixed Income
More Equity in 2050-2020 Funds (5-10%)			

MODELING RESULTS

EXAMPLE: 2030 FUND



2030 FUND RESULTS

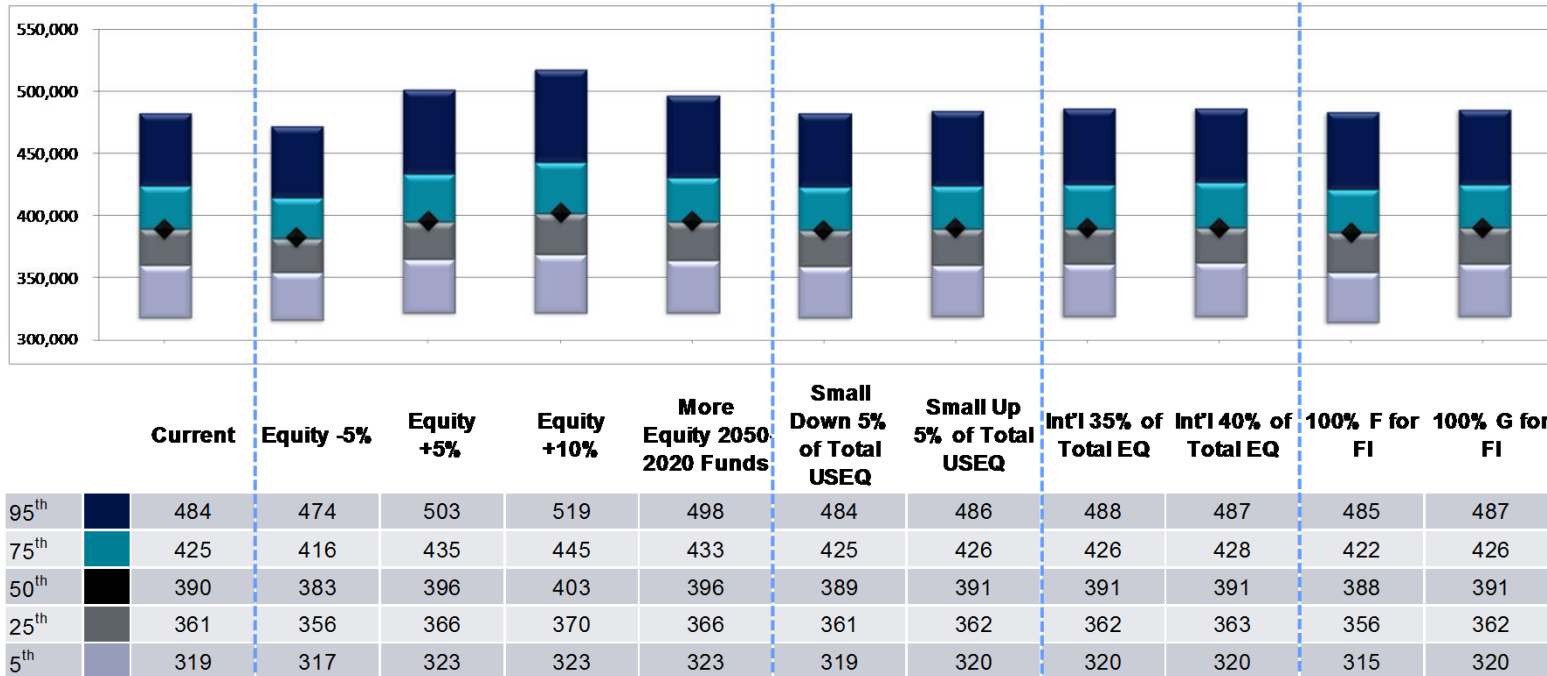
For purposes of this illustration, we selected a representative career FERS participant with entry age 36 and retirement at age 61. Results for a 2030 Lifecycle Fund investor -- 47 yr. old FERS employee with approximately 11 years of tenure, a \$130,000 account balance, and currently earning \$81,000/yr. Assumed real wage growth is 1.5%/yr and inflation is 2.2%.

	<u>Current Glide Path</u>	<u>Increase Equity 10% along GlidePath</u>	<u>More Equity 2050 - 2020</u>
Median Account Balance at 2030 (real \$)	\$390,421	\$402,730	\$396,424
5th Pct Account Balance at 2030 (real \$)	\$319,151	\$323,310	\$323,171
TSP Median Replacement Ratio at 2030	22%	24%	24%
TSP 5th Pct Replacement Ratio at 2030	17%	17%	17%
Total FERS Median Replacement Ratio* at 2030	67%	68%	68%
Total FERS 5th Pct Replacement Ratio* at 2030	59%	59%	59%
Probability of Decline over Final 2 Yrs.	3.00%	6.80%	3.60%
Likelihood of 5% or Larger Investment Loss over Final 2 Yrs.	4.90%	9.90%	5.60%
Assume post-retirement spending is 80% of final inflation adjusted salary.			
Probability account depleted - age 80	90.90%	87.30%	90.30%
Probability account depleted - age 90	97.80%	96.90%	97.80%
Median Drawdown Age	74	75	74
Drawdown Age at 5th Percentile Downside	70	70	70

* Includes estimated replacment from Social Security (18% to 22%) and FERS defined benefit (24%)

SUMMARY OF REAL (INFLATION-ADJUSTED) ACCOUNT BALANCES AT MATURITY: 14 YEARS TO RETIREMENT (2030 FUND)

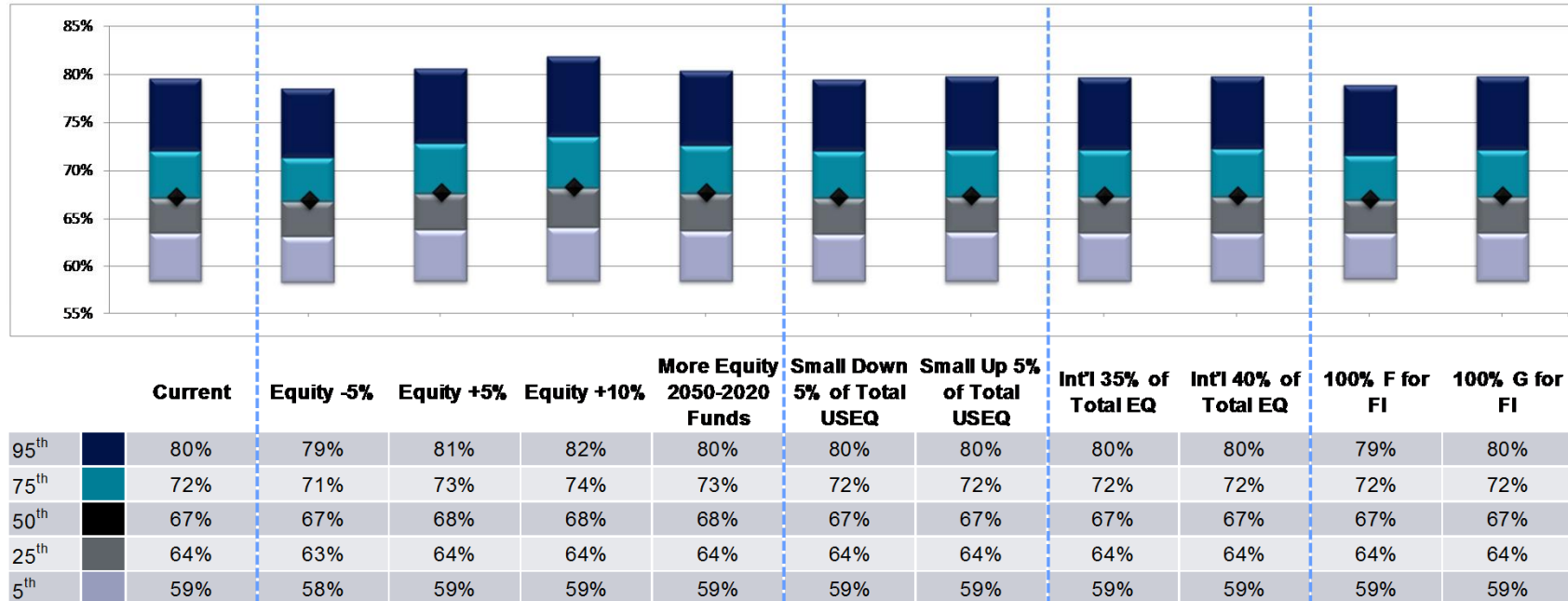
Range of Real Account Balances



- Higher equity allocations provide improvement in account balances across range of outcomes
- Allocations to small cap and international equity do not have significant impact
- For funds approaching retirement, the G Fund outperforms the F Fund

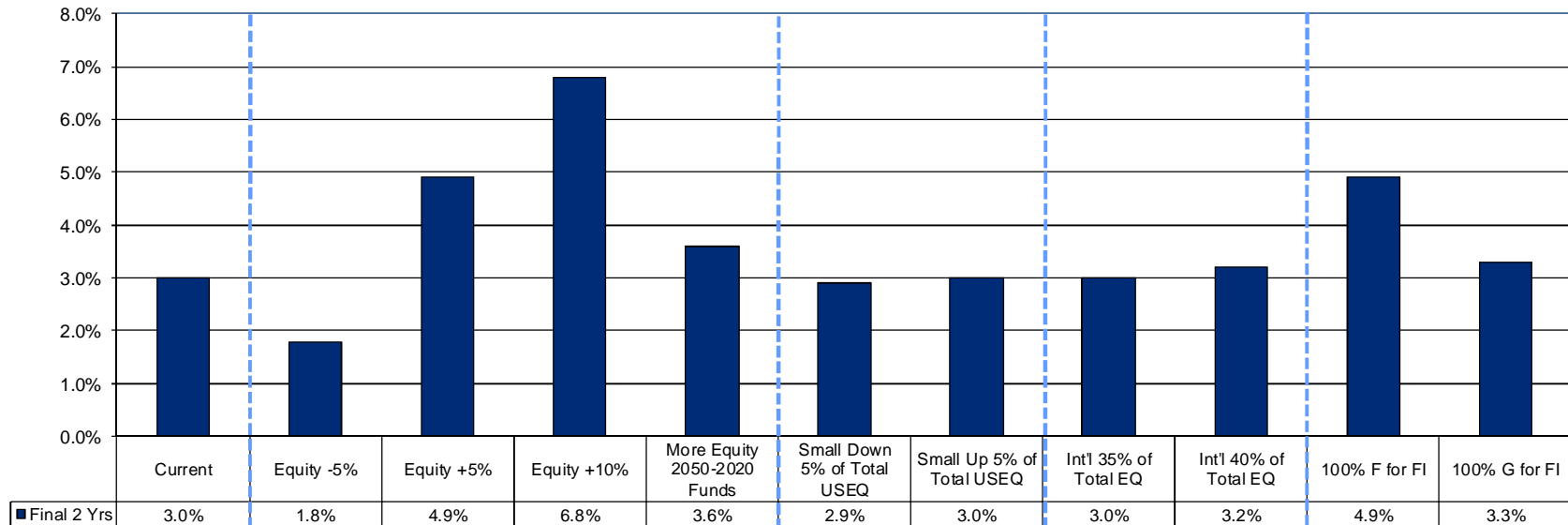
RANGE OF REPLACEMENT RATIOS AT MATURITY: 14 YEARS TO RETIREMENT (2030 FUND)

Replacement Ratio



- Higher equity allocations provide improvement in replacement ratios across range of outcomes
- Allocations to small cap and international equity do not have significant impact
- For funds approaching retirement, the G Fund outperforms the F Fund

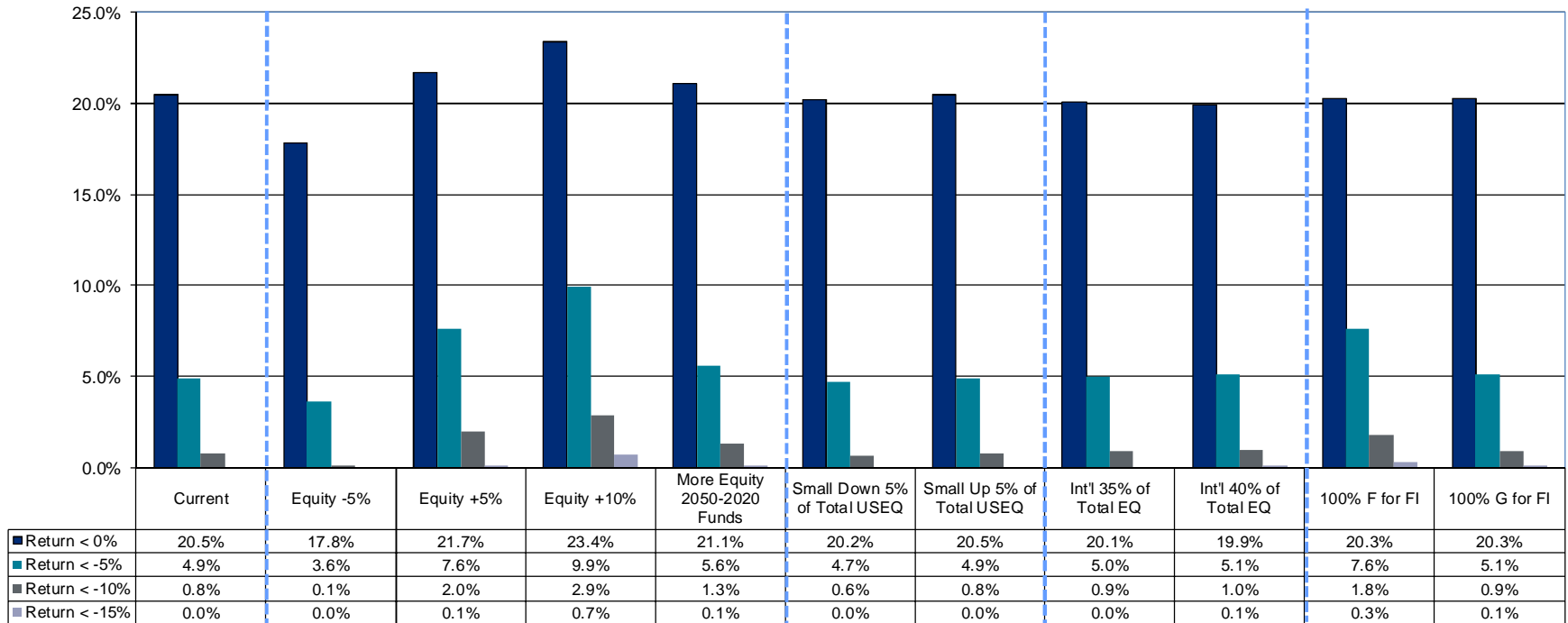
PROBABILITY OF DECLINE IN ACCOUNT BALANCE IN FINAL TWO YEARS BEFORE MATURITY, IN REAL (INFLATION-ADJUSTED) TERMS: 2030 FUND



Probability of Loss in Final Two Years (Real)

- This measure is influenced by the size of account balance as well as the size of the contributions
- Lower equity glide paths reduce the probability of a decline in account balances, while the higher equity glide paths increase the probability of decline

INVESTMENT RISK: 2030 FUND

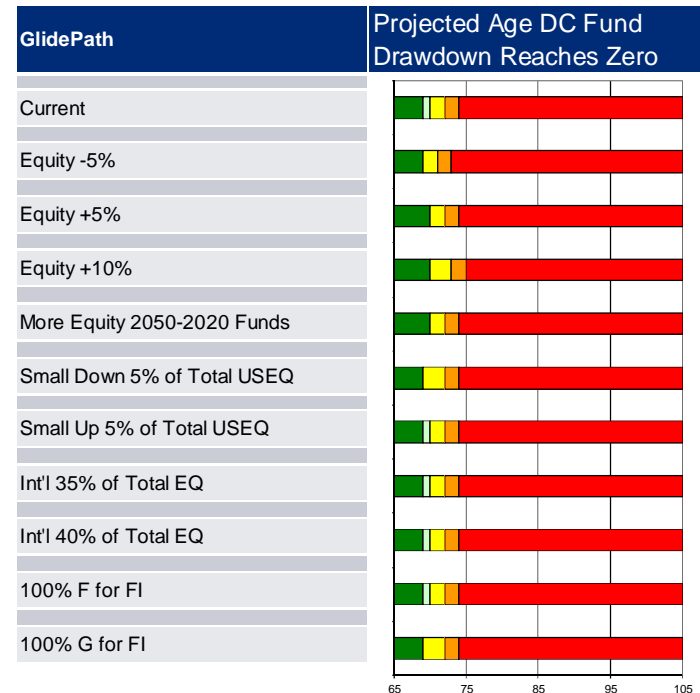


Probability of Investment Loss Final 2 years Pre-Retirement

- This measure is not influenced by the size of account balance or the size of the contributions
- Lower equity glide paths reduce the probability of an investment loss, while the higher equity glide paths increase the probability of loss

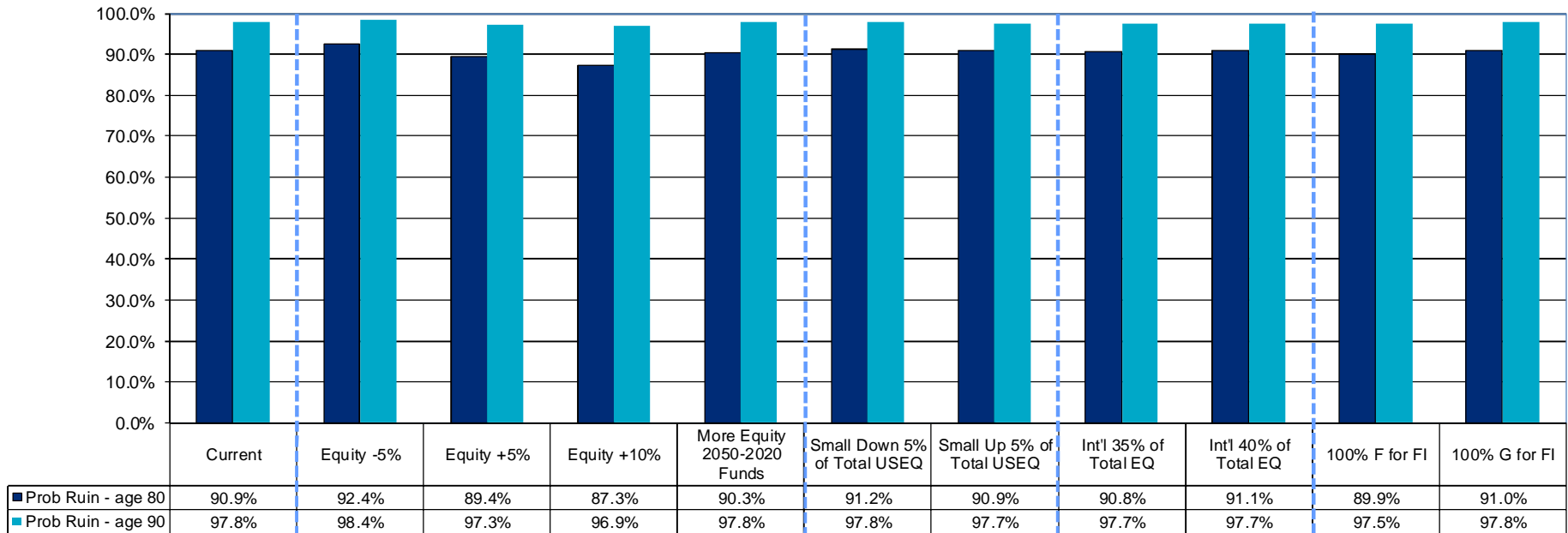
EXPECTED ACCOUNT DEPLETION AGES: 2030 FUND

- Assumes retirement spending budget of 80% of final pay at retirement
- Under median outcome, account expected to last 13 years post-retirement
- 1% chance of depleting DC assets within 8 years post-retirement with current glide path
- Outcomes slightly improved with higher equity allocation
- After depletion participants will have ~50% replacement from DB and SS sources



GlidePath	Significance Level (Probability of having retirement funds sufficient to reach indicated age)			
	99%	95%	75%	50%
Current	69	70	72	74
Equity -5%	69	69	71	73
Equity +5%	70	70	72	74
Equity +10%	70	70	73	75
More Equity 2050-2020 Funds	70	70	72	74
Small Down 5% of Total USEQ	69	69	72	74
Small Up 5% of Total USEQ	69	70	72	74
Int'l 35% of Total EQ	69	70	72	74
Int'l 40% of Total EQ	69	70	72	74
100% F for FI	69	70	72	74
100% G for FI	69	69	72	74

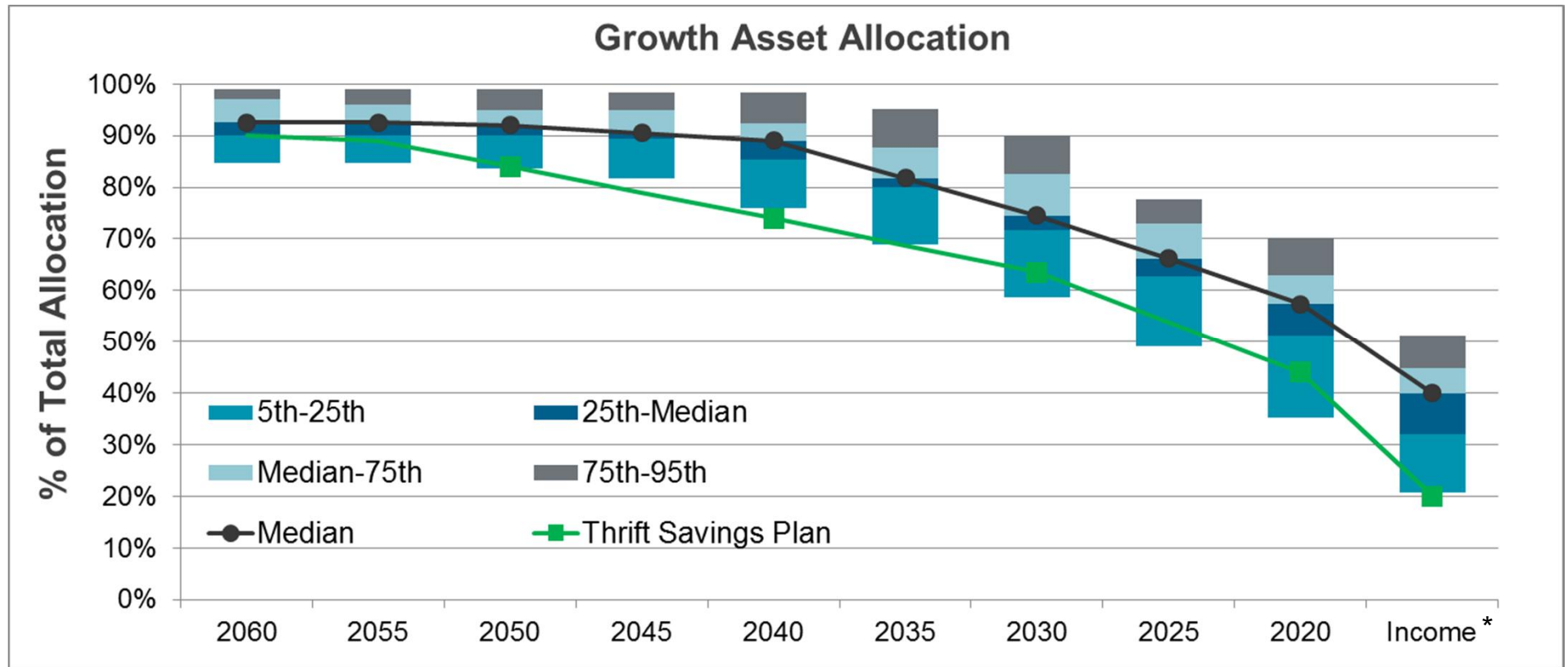
PROBABILITY OF DEPLETING DC ASSETS BY AGE 80 AND 90: 2030 FUND



Probability of Depleting DC Assets

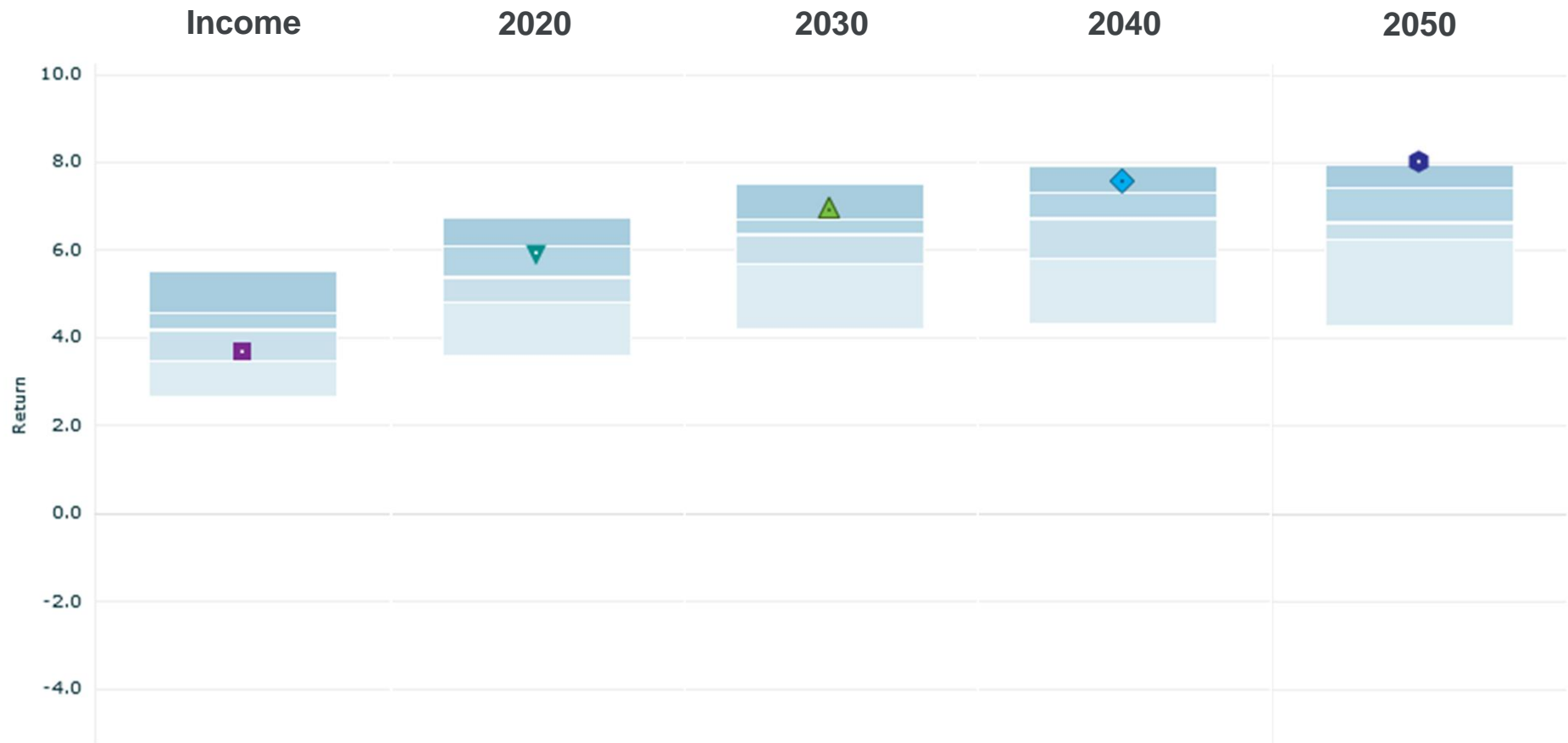
- Probability of depleting DC assets by age 80 can be decreased by taking more equity risk
- Probability of depleting DC assets by age 90 is 90+% for all investment options

EQUITY ALLOCATION: COMPARISON TO MERCER SURVEY



* Includes all post-retirement funds (2015, 2010, 2005, Income, etc.)

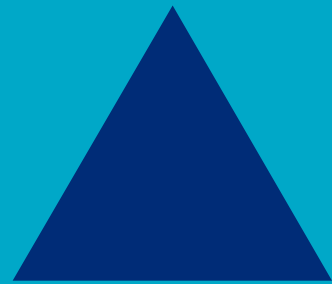
HISTORICAL FUND PERFORMANCE – 5 YEAR



	5 yrs (%pa)	5 yrs (%pa)	5 yrs (%pa)	5 yrs (%pa)	5 yrs (%pa)
L Fund Return	3.7 (67)	5.9 (31)	6.9 (19)	7.6 (12)	8.0 (3)
5th Percentile	5.5	6.7	7.5	7.9	8.0
Upper Quartile	4.5	6.1	6.7	7.3	7.4
Median	4.1	5.4	6.4	6.7	6.6
Lower Quartile	3.5	4.8	5.7	5.8	6.2
95th Percentile	2.7	3.6	4.3	4.4	4.3
Number	28	35	34	34	32

Performance for five-year period ending 06/30/2016 with comparison to Mutual Fund Target-Date universe of same vintage

SUMMARY AND RECOMMENDATIONS

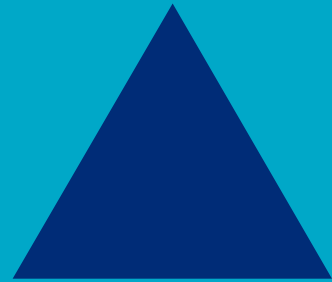


SUMMARY AND RECOMMENDATIONS

- With respect to the glide path allocations, additional equity is favorable in the current low yield environment and over very long time horizons, but it increases volatility of returns and event risk around the target retirement age
 - Recommend considering potential benefits and risk tradeoffs of higher equity weight along glide path
- Outcomes with alternative international equity weighting do not significantly differ from current allocations
 - Recommend retaining current I Fund weight along glide path
- Current allocation to small cap equity shows outcomes similar to an increase or decrease in small cap equities of 5% in relation to US equities
 - Recommend retaining current S Fund weight along glide path
- G Fund is more favorable in short term, F Fund in long term
 - Recommend retaining current overweight G Fund position
- F Fund allocations tend to improve replacement ratios over the long term, providing hedging against annuity price movements leading into retirement
 - Recommend retaining phase-out of G Fund overweight

APPENDIX

ALTERNATIVE GLIDE PATHS MARKET SURVEY



CURRENT ASSET ALLOCATION OF ALTERNATIVE GLIDE PATHS

Decrease Equity 5%

Allocations	2050 Portfolio	2040 Portfolio	2030 Portfolio	2020 Portfolio	Income Portfolio
C-Fund	41.5	36.9	31.8	21.6	8.4
S-Fund	13.8	11.4	9.1	5.7	2.1
I-Fund	23.7	20.7	17.6	11.7	4.5
F-Fund	5.1	6.6	6.5	6.2	6.4
G-Fund	15.9	24.4	35.0	54.8	78.6
Total	100.0	100.0	100.0	100.0	100.0
Asset Class Ratios					
Percent Fixed Income	21.0	31.0	41.5	61.0	85.0
Percent Equity	79.0	69.0	58.5	39.0	15.0
Int Eq/Tot Eq	30.0	30.0	30.1	30.0	30.0
S-Fund/Domestic Eq	25.0	23.6	22.2	20.9	20.0
F-Fund/Total FI	24.2	21.4	15.7	10.2	7.5

Increase Equity 5%

Allocations	2050 Portfolio	2040 Portfolio	2030 Portfolio	2020 Portfolio	Income Portfolio
C-Fund	46.8	42.2	37.2	27.1	14.0
S-Fund	15.5	13.1	10.7	7.2	3.5
I-Fund	26.7	23.7	20.6	14.7	7.5
F-Fund	2.7	4.5	4.9	5.2	5.6
G-Fund	8.3	16.5	26.6	45.8	69.4
Total	100.0	100.0	100.0	100.0	100.0
Asset Class Ratios					
Percent Fixed Income	11.0	21.0	31.5	51.0	75.0
Percent Equity	89.0	79.0	68.5	49.0	25.0
Int Eq/Tot Eq	30.0	30.0	30.1	30.0	30.0
S-Fund/Domestic Eq	24.9	23.7	22.3	21.0	20.0
F-Fund/Total FI	24.2	21.4	15.7	10.2	7.5

Increase Equity 10%

Allocations	2050 Portfolio	2040 Portfolio	2030 Portfolio	2020 Portfolio	Income Portfolio
C-Fund	49.4	44.9	40.0	29.8	16.8
S-Fund	16.4	13.9	11.5	8.0	4.2
I-Fund	28.2	25.2	22.0	16.2	9.0
F-Fund	1.5	3.4	4.2	4.7	5.3
G-Fund	4.5	12.6	22.3	41.3	64.7
Total	100.0	100.0	100.0	100.0	100.0
Asset Class Ratios					
Percent Fixed Income	6.0	16.0	26.5	46.0	70.0
Percent Equity	94.0	84.0	73.5	54.0	30.0
Int Eq/Tot Eq	30.0	30.0	29.9	30.0	30.0
S-Fund/Domestic Eq	24.9	23.6	22.3	21.2	20.0
F-Fund/Total FI	24.2	21.4	15.7	10.2	7.5

More Equity 2050 - 2020

Allocations	2050 Portfolio	2040 Portfolio	2030 Portfolio	2020 Portfolio	Income Portfolio
C-Fund	46.8	44.9	40.0	27.1	11.2
S-Fund	15.5	13.9	11.5	7.2	2.8
I-Fund	26.7	25.2	22.0	14.7	6.0
F-Fund	2.7	3.4	4.2	5.2	6.0
G-Fund	8.3	12.6	22.3	45.8	74.0
Total	100.0	100.0	100.0	100.0	100.0
Asset Class Ratios					
Percent Fixed Income	11.0	16.0	26.5	51.0	80.0
Percent Equity	89.0	84.0	73.5	49.0	20.0
Int Eq/Tot Eq	30.0	30.0	29.9	30.0	30.0
S-Fund/Domestic Eq	24.9	23.6	22.3	21.0	20.0
F-Fund/Total FI	24.2	21.4	15.7	10.2	7.5

CURRENT ASSET ALLOCATION OF ALTERNATIVE GLIDE PATHS

International Equity Increased to 35% of Total Equity

Allocations	2050 Portfolio	2040 Portfolio	2030 Portfolio	2020 Portfolio	Income Portfolio
C-Fund	41.0	36.7	32.1	22.6	10.4
S-Fund	13.6	11.4	9.2	6.0	2.6
I-Fund	29.4	25.9	22.2	15.4	7.0
F-Fund	3.9	5.6	5.7	5.7	6.0
G-Fund	12.1	20.4	30.8	50.3	74.0
Total	100.0	100.0	100.0	100.0	100.0
Asset Class Ratios					
Percent Fixed Income	16.0	26.0	36.5	56.0	80.0
Percent Equity	84.0	74.0	63.5	44.0	20.0
Int Eq/Tot Eq	35.0	35.0	35.0	35.0	35.0
S-Fund/Domestic Eq	24.9	23.7	22.3	21.0	20.0
F-Fund/Total FI	24.2	21.4	15.7	10.2	7.5

International Equity Increased to 40% of Total Equity

Allocations	2050 Portfolio	2040 Portfolio	2030 Portfolio	2020 Portfolio	Income Portfolio
C-Fund	37.8	33.9	29.6	20.8	9.6
S-Fund	12.6	10.5	8.5	5.6	2.4
I-Fund	33.6	29.6	25.4	17.6	8.0
F-Fund	3.9	5.6	5.7	5.7	6.0
G-Fund	12.1	20.4	30.8	50.3	74.0
Total	100.0	100.0	100.0	100.0	100.0
Asset Class Ratios					
Percent Fixed Income	16.0	26.0	36.5	56.0	80.0
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Int Eq/Tot Eq	40.0	40.0	40.0	40.0	40.0
S-Fund/Domestic Eq	25.0	23.6	22.3	21.2	20.0
F-Fund/Total FI	24.2	21.4	15.7	10.2	7.5

Small Cap Equity down 5% of Domestic Equity

Allocations	2050 Portfolio	2040 Portfolio	2030 Portfolio	2020 Portfolio	Income Portfolio
C-Fund	47.1	42.1	36.8	25.9	11.9
S-Fund	11.7	9.7	7.7	4.9	2.1
I-Fund	25.2	22.2	19.1	13.2	6.0
F-Fund	3.9	5.6	5.7	5.7	6.0
G-Fund	12.1	20.4	30.8	50.3	74.0
Total	100.0	100.0	100.0	100.0	100.0
Asset Class Ratios					
Percent Fixed Income	16.0	26.0	36.5	56.0	80.0
Percent Equity	84.0	74.0	63.5	44.0	20.0
Int Eq/Tot Eq	30.0	30.0	30.0	30.0	30.0
S-Fund/Domestic Eq	19.9	18.7	17.3	15.9	15.0
F-Fund/Total FI	24.2	21.4	15.7	10.2	7.5

Small Cap Equity up 5% of Domestic Equity

Allocations	2050 Portfolio	2040 Portfolio	2030 Portfolio	2020 Portfolio	Income Portfolio
C-Fund	41.2	37.0	32.4	22.8	10.5
S-Fund	17.6	14.8	12.1	8.0	3.5
I-Fund	25.2	22.2	19.1	13.2	6.0
F-Fund	3.9	5.6	5.7	5.7	6.0
G-Fund	12.1	20.4	30.8	50.3	74.0
Total	100.0	100.0	100.0	100.0	100.0
Asset Class Ratios					
Percent Fixed Income	16.0	26.0	36.5	56.0	80.0
Percent Equity	84.0	74.0	63.5	44.0	20.0
Int Eq/Tot Eq	30.0	30.0	30.0	30.0	30.0
S-Fund/Domestic Eq	29.9	28.6	27.2	26.0	25.0
F-Fund/Total FI	24.2	21.4	15.7	10.2	7.5

CURRENT ASSET ALLOCATION OF ALTERNATIVE GLIDE PATHS

100% F Fund for Fixed Income

Allocations	2050 Portfolio	2040 Portfolio	2030 Portfolio	2020 Portfolio	Income Portfolio
C-Fund	44.1	39.6	34.5	24.3	11.2
S-Fund	14.7	12.3	9.9	6.5	2.8
I-Fund	25.2	22.2	19.1	13.2	6.0
F-Fund	16.0	26.0	36.5	56.0	80.0
G-Fund	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0
Asset Class Ratios					
Percent Equity	84.0	74.0	63.5	44.0	20.0
Int Eq/Tot Eq	30.0	30.0	30.0	30.0	30.0
S-Fund/Domestic Eq	24.9	23.6	22.3	21.0	20.0
F-Fund/Total FI	100.0	100.0	100.0	100.0	100.0

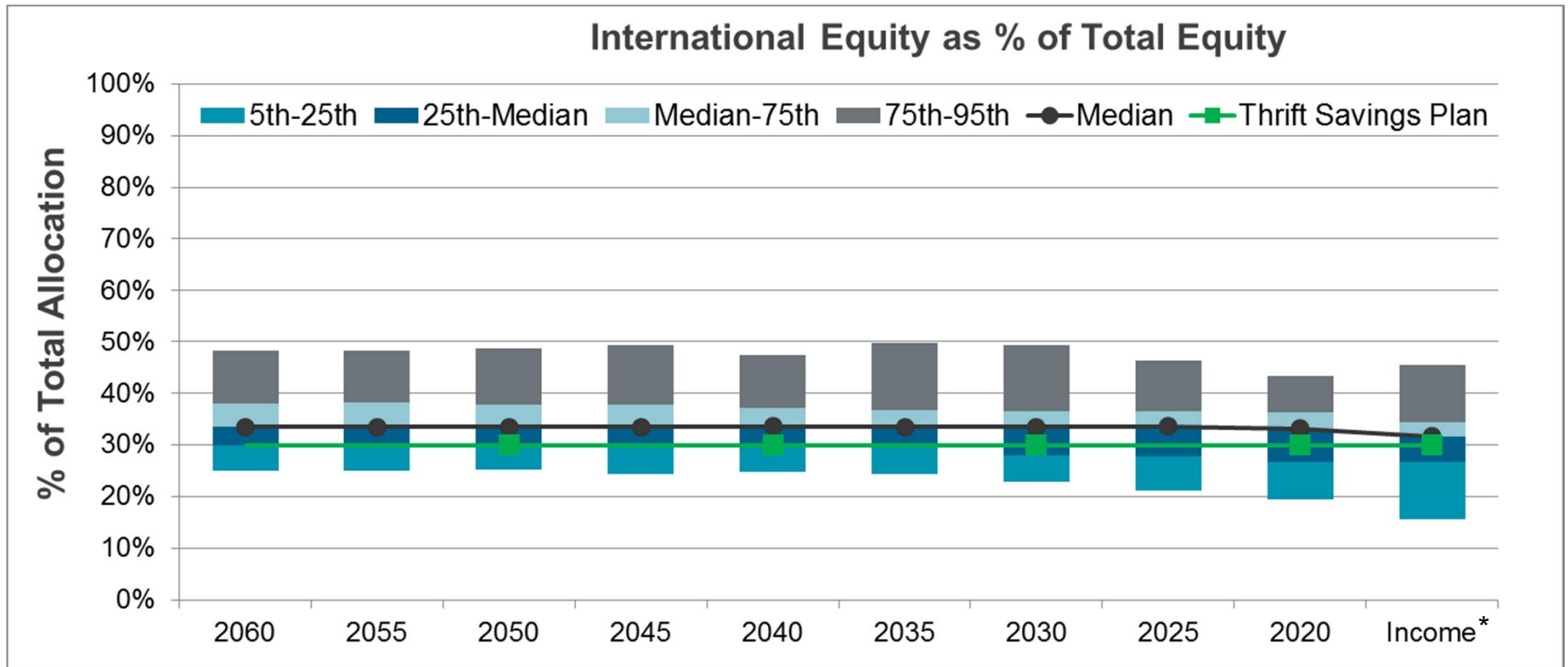
100% G Fund for Fixed Income

Allocations	2050 Portfolio	2040 Portfolio	2030 Portfolio	2020 Portfolio	Income Portfolio
C-Fund	44.1	39.6	34.5	24.3	11.2
S-Fund	14.7	12.3	9.9	6.5	2.8
I-Fund	25.2	22.2	19.1	13.2	6.0
F-Fund	0.0	0.0	0.0	0.0	0.0
G-Fund	16.0	26.0	36.5	56.0	80.0
Total	100.0	100.0	100.0	100.0	100.0
Asset Class Ratios					
Percent Equity	84.0	74.0	63.5	44.0	20.0
Int Eq/Tot Eq	30.0	30.0	30.0	30.0	30.0
S-Fund/Domestic Eq	24.9	23.6	22.3	21.0	20.0
F-Fund/Total FI	0.0	0.0	0.0	0.0	0.0

SUMMARY OF QUARTERLY MARKET SURVEY

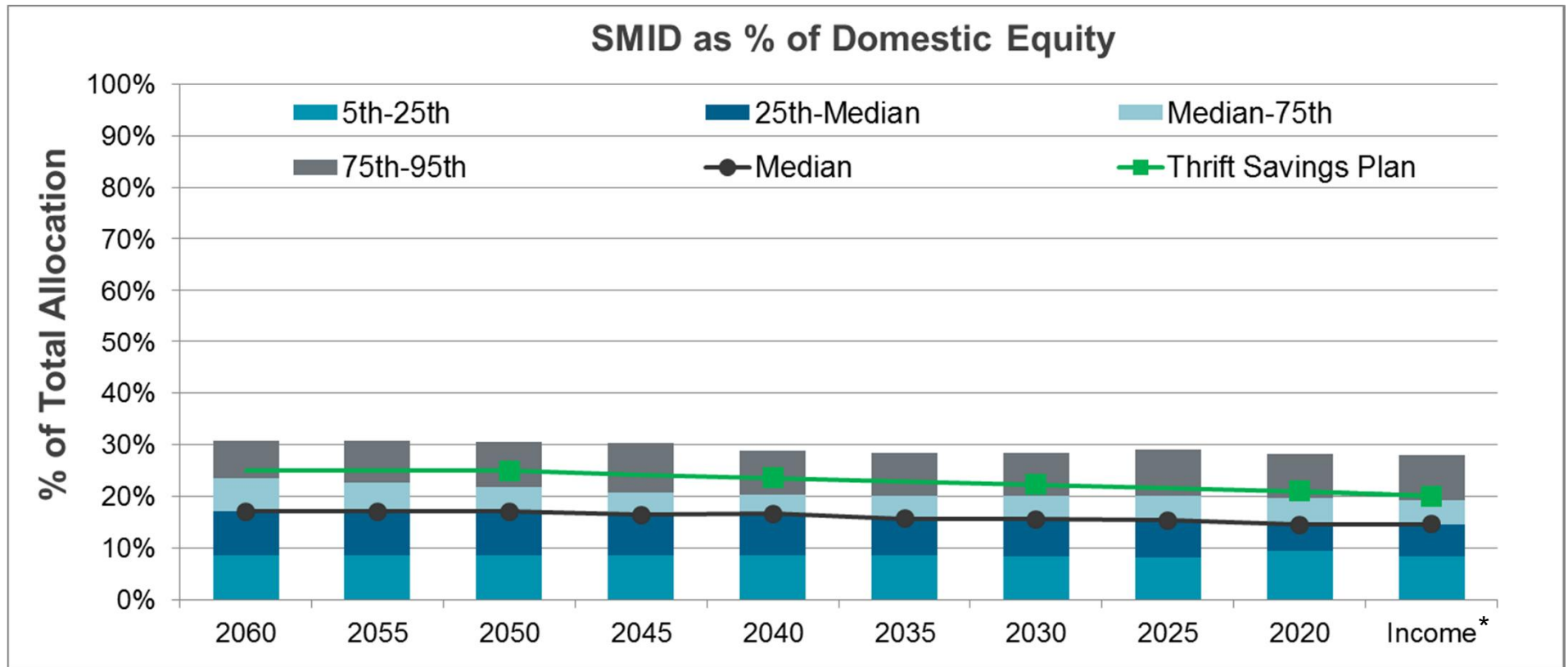
- Mercer performs a quarterly survey of Target Date Fund providers
- The survey covers 45 Target Date Fund families from 26 providers
- The Thrift Savings Plan asset allocation is somewhat conservative relative to the survey median
 - Lower equity allocations than median across glide path
- The split of international equity vs. total equity is below the survey median
 - Survey median is at 33.5% for long-dated funds and trends down to 31.7% by the income fund
 - For most providers, the international equity allocation includes some emerging markets exposure

INTERNATIONAL EQUITY ALLOCATION: COMPARISON TO MERCER SURVEY



* Includes all post-retirement funds (2015, 2010, 2005, Income, etc.)

SMID AS % OF DOMESTIC EQUITY ALLOCATION: COMPARISON TO MERCER SURVEY



* Includes all post-retirement funds (2015, 2010, 2005, Income, etc.)

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Mercer believes that as opportunities in the capital markets change, so do the expected returns for asset classes. A key factor in our process is the level of interest rates, as they combine the market's expectations of inflation and economic growth. In general, as interest rates rise, our expected returns will rise; as interest rates decline, our expected returns will decline. This runs counter to the realized returns as interest rates change and is part of the difference between ex ante and ex post results.

When interest rates change, we may change our assumptions. However, we are cautious about making changes. We have designed our assumptions to be strategic in nature, so they will typically not be adjusted to short-term market spikes. We use our judgment to determine whether interest rate moves are sustainable. In practice, we continuously review our assumptions and work to refine our methodology as we gain additional information relating to the capital markets, but we do not anticipate changes every time interest rates rise in 25 or 50 basis point increments.

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