



Dale R. Folwell, CPA

INVESTMENT MANAGEMENT

To: North Carolina Supplemental Retirement Board of Trustees

From: Loren de Mey, Assistant Investment Director

Date: September 7, 2017

Subject: NC 401(k) and NC 457 Plans' GoalMaker® and Glidepath Update and Review

Background

As part of the Supplemental Retirement Board of Trustees' (Board) general fiduciary duties regarding plan design, the Board is responsible for selecting, monitoring, and approving changes to any model asset allocations (including the glidepaths across allocations) that are offered in the Plans. The categories of model allocations/glidepaths include: (1) "Off-the-shelf" options (such as Morningstar's allocations and glidepath offered through Prudential's GoalMaker service); and (2) Modified versions of "off-the shelf" options (such as the modified Morningstar version currently used by the Board).¹ The choice of an off-the-shelf option and the decision of how (if at all) to modify the allocations/glidepath are fiduciary obligations of the Board, and the Board relies on investment experts from the Investment Management Division (IMD) and Mercer in making these decisions.

On March 23, 2017, the Board approved a recommendation of the Supplemental Investment Subcommittee on the alterations to the NC 401(k) and NC 457 Plans' glidepath (the Glidepath Project).. The recommendation was to instruct IMD staff to develop a plan with Prudential to finalize the material changes to the glidepath of the GoalMaker® service based on the 2013 Mercer recommendations (i.e., those that were deferred until after the 2015 unbundling) with no incremental fees. As identified by IMD for the Board, those changes included:

1. Smoothing the Plans' glidepath; and/or
2. Adding a "through retirement" or an income component to the glidepath

The scope of the Glidepath Project focused on *in-plan* assets only. Participant characteristics unique to NC Total Retirement Plans, such as access to the NC defined benefit plan, access to social security savings, and information about other participant assets outside of the Plan, were *not* incorporated in the analysis.

GoalMaker / Glidepath Analysis

There are \$4.6 billion in total assets in GoalMaker (44% of total assets in the 401k and 457 Plans). 61% of all participants and 93% of new participants were using GoalMaker.

As a reminder, Morningstar provides the underlying asset allocation framework supporting Prudential's GoalMaker service and is currently enhancing its model portfolios with GoalMaker. IMD and Mercer

¹ A third alternative – fully-customized allocations/glidepaths using a delegated investment manager or investment consultant — was previously considered and rejected by the Board.



INVESTMENT MANAGEMENT

used this new model, developed by Morningstar, as the starting point in their analysis. The new GoalMaker model is a “3 x 9” model (that is, the model includes three risk settings and nine retirement target years, with six target years in the pre-retirement phase and three in the post-retirement phase (See Appendix B).

The new GoalMaker® model improves upon the current model in the following ways:

1. Offers options for participants **through** retirement, by adding three age-related groupings in the post-retirement phase.
2. Adds additional exposure to growth assets for younger participants, while adding fixed income and stable value assets for participants approaching or in retirement.
3. Smooths the glidepath by adding additional age groupings so participants will experience less abrupt asset allocation changes as they move through the glidepath.

To better understand some of the discussion and recommendations, it is important to understand the following:

1. This new GoalMaker model is created by Morningstar, under contract with Prudential, to be provided as an alternative to Prudential’s defined contribution clients that also desire glidepath smoothing as opposed to Standard GoalMaker (which is a “3 x 4” model).
2. Morningstar’s Standard GoalMaker® has been used by Mercer and the Board to create and authorize the customized NC 401(k) and NC 457 GoalMaker model portfolios. In other words, the current North Carolina glidepath is a customized version of Prudential’s Standard GoalMaker model as approved by the Board in 2013 (See Appendix A).
3. Morningstar’s Lifetime Asset Allocation Indexes are their “best case” model target date funds with a glidepath for three different risk levels and 14 target dates (i.e., “3 x 14” model).
4. Morningstar periodically updates its Standard GoalMaker® model based on updated methodology and capital market assumptions and communicates these changes to Prudential.

IMD reviewed the alternative 3 x 9 GoalMaker model proposed, with a specific focus on thorough review of the following:

1. Morningstar’s glidepath modeling (i.e., methodology and assumptions) and their Lifetime Asset Allocation Indexes (See Appendix C);
2. Any major deviations between the glidepaths of the Lifetime Asset Allocation Indexes and the alternative 3 x 9 GoalMaker®, including the mapping of individual sector/style constituents between the two glidepaths;
3. Any major deviations between the glidepaths of the alternative 3 x 9 GoalMaker® and the North Carolina GoalMaker® Model Portfolio, including the mapping of individual sector/style constituents between the glidepaths; and
4. Throughout the analysis, the allocation to growth and fixed income assets provided by the Prudential model was maintained.



INVESTMENT MANAGEMENT

Goalmaker Recommendations

IMD analyzed all of the above, reviewed its analysis with Mercer, and proposes the following components of new North Carolina GoalMaker® Model Portfolios for the Board's consideration.

1. Adopt Prudential's new GoalMaker® 3 x 9 model with recommended modifications, as outlined in Mercer's presentation, *including* the following modifications:
 - a. Cap the SMID allocation at 30% in the longer-dated funds and scale down to 20% as participants near retirement to be more in line with the SMID weighting within the Russell 3000 Index (Prudential's proposed model portfolio includes a significant overweight to SMID throughout the glidepath);
 - b. Increase the allocation to International Equity to be more in line with the weighting within the MSCI ACWI Index (The allocation to International Equity will decrease as participants approach retirement); and
 - c. Add an Inflation Sensitive allocation (discussed in greater detail in the following section) that would have the following characteristics:
 - i. The Inflation Sensitive allocation would be implemented with a passive U.S. Treasury Inflation Protected Securities ("TIPS") allocation.
 - ii. The changes would improve the inflation protection for participants approaching or in retirement.
 - iii. The TIPS allocation will be mainly funded through a reduction in the stable value allocation.
2. Utilize only a passive allocation for U.S. Large Cap (i.e., the current glidepath uses both active and passive U.S. Large Cap).
3. Utilize only an active allocation for fixed income (i.e., the current glidepath model uses both active and passive fixed income).
4. Eliminate the active Global Equity investment option and replace it with passive U.S. Large Cap and active International Equity options.
 - a. Recommend removing the NC Global Equity Fund from the core fund line-up
 - b. Approximately 94% of the assets within the Global Equity Fund are from the GoalMaker allocation. If this change is made, only \$60 million would remain in the Global Equity Fund (the self-directed assets), and investment management fees would increase 10 basis points to 0.675% for those remaining assets (given the break points on the current fee schedule).

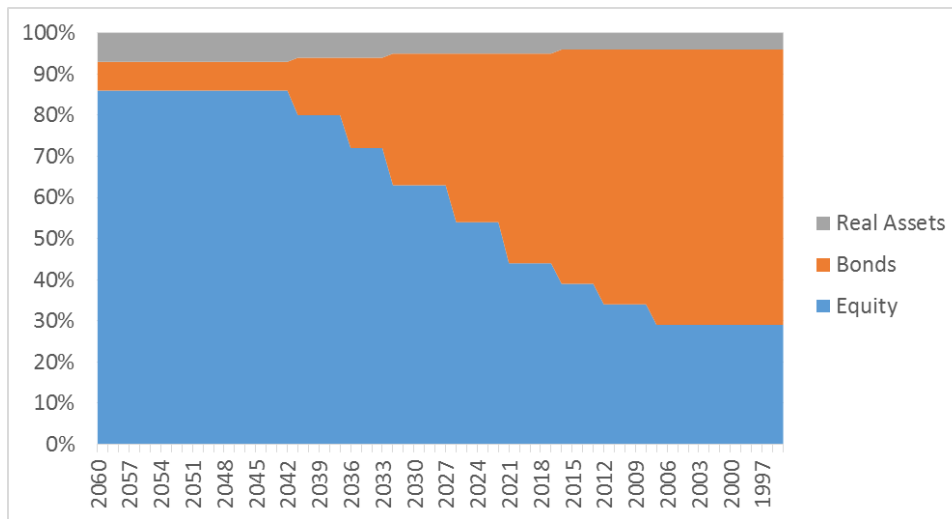
Inflation Sensitive Modification

IMD staff and Mercer recommend utilizing an expanded Inflation Sensitive allocation. The current North Carolina GoalMaker Model Portfolios utilize a Real Assets allocation to the PIMCO Inflation Responsive Multi Asset Fund (IRMAF), and the new GoalMaker® 3 x 9 Model decreases this allocation as participants age into and through retirement (See Chart 1). This decrease occurs because the portfolio is roughly half allocated to growth-oriented assets, rather than inflation hedging.



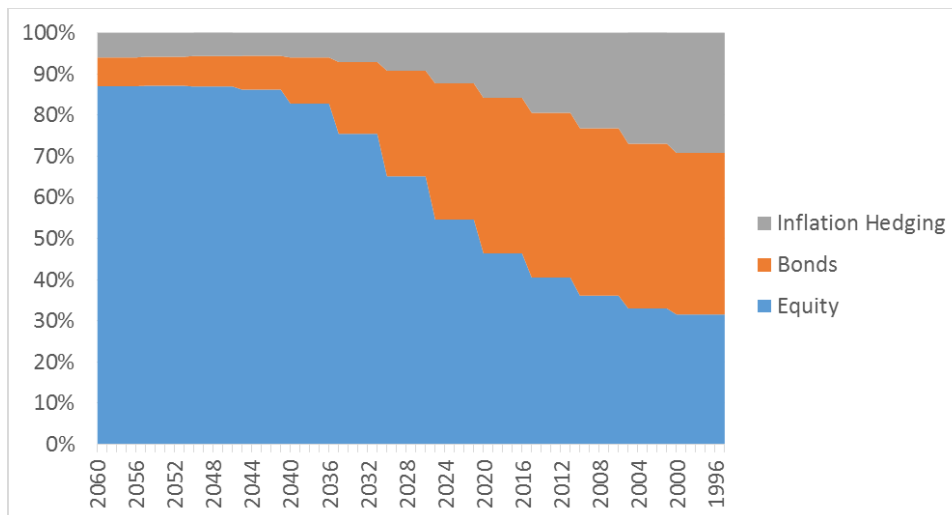
INVESTMENT MANAGEMENT

Chart 1: Morningstar's New GoalMaker 3 x 9 Model (Moderate Portfolio)



Within the Mercer peer group of target date funds, there is instead an Inflation Sensitive allocation, which increases as participants approach retirement. This basic approach is consistent with the Morningstar methodology utilized within Morningstar's Lifetime Asset Allocation Indexes as can be seen in Chart 2.

Chart 2: Morningstar's Lifetime Asset Allocation Indexes (Moderate Portfolio)



The Plans' current Inflation Sensitive investment offering, the PIMCO IRMAF, does not correspond closely to the asset categories that Morningstar modeled within their Lifetime Asset Allocation Indexes. The PIMCO IRMAF does have exposure to TIPS, but also has exposure to growth-oriented and higher volatility assets such as REITs, currencies, and commodities. Given these exposures, IMD staff and



Dale R. Folwell, CPA

INVESTMENT MANAGEMENT

Mercer do not believe it would be in the best interests of participants to materially increase the allocations to IRMAF (i.e., growth assets) as participants approach retirement.

Therefore, IMD staff and Mercer are recommending adding in a TIPS allocation to the GoalMaker® Model for inflation hedging purposes. The allocations to TIPS would increase for those participants approaching or in retirement.

Investment Management Fees Reduced

The new proposed GoalMaker® model including the new implementation (active/passive split) reduces investment management fees on the GoalMaker® portfolios by 7-15 basis points (based on fees as of 6/30/17, which include the recently negotiated fee reductions). For an account size of \$100,000, this would be a fee savings of approximately \$70–150 per year for participants. Further details on fees can be seen on page 25 of the Mercer presentation to the Board.

Summary of Recommendations

1. Approve moving to the new GoalMaker 3x9 Model (moving from the 3 x 4 model)
2. Approve recommendations to IMD from Mercer, with regard to the new model portfolios within GoalMaker, including the addition of a TIPS allocation.
3. Approve all implementations recommended by Mercer to IMD including:
 - a. Fully passive for U.S. Large Cap Equity – change from current GoalMaker®
 - b. Fully active for Fixed Income – change from current GoalMaker®
 - c. Fully active for International Equity – no change from current GoalMaker®
 - d. Fully active for Small / Mid U.S. Equity – no change from current GoalMaker®
4. Replace the Global Equity investment option in the standard model portfolios with passive U.S. Large Cap and Active International Equity options
5. Remove the NC Global Equity Fund from the Plans' core menu
6. Add a Passive TIPS Fund to the Core Menu

All recommended changes to the glidepath and GoalMaker® portfolios that are approved by the Board are expected to be implemented by June 2018.

Summary

The proposed GoalMaker® Model reduces fees and adds value for participants by enhancing the model portfolios in several ways including: extending the glidepath through retirement; smoothing the glidepath by providing less abrupt asset allocation changes; and optimizing the active/passive mix of investment strategies. The new model portfolios adds additional exposure to growth assets for younger participants, while increasing fixed income and inflation hedging allocations for those participants approaching and in retirement.



Dale R. Folwell, CPA

INVESTMENT MANAGEMENT

Appendix A: Current GoalMaker® Allocations (highlighted changes are changes that will be implemented along with the Plan Design changes, effective September 29, 2017)

Conservative

The objective of the Conservative Model Allocation is to achieve long term growth in excess of inflation with a minimal risk of capital loss over a full market cycle.

Conservative	C01	C02	C03	C04
	0-5 Yrs	6-10 Yrs	11-15 Yrs	16+ Yrs
NC Large Cap Value				
NC Large Cap Index	4%	4%	7%	8%
NC Large Cap Growth				
NC Large Cap Core	2%	4%	6%	6%
NC Small / Mid Cap Value				
NC Small / Mid Cap Index	0%	0%	0%	0%
NC Small / Mid Cap Growth				
NC Small / Mid Cap Core	4%	6%	10%	14%
NC Global Equity	6%	10%	15%	23%
NC International	3%	5%	7%	11%
NC International Index	0%	0%	0%	0%
NC Fixed Income	16%	14%	12%	10%
NC Fixed Income Index	17%	14%	13%	10%
NC Stable Value	40%	35%	22%	10%
NC Inflation Sensitive	8%	8%	8%	8%



INVESTMENT MANAGEMENT

Moderate

The objective of the Moderate Model Allocation is moderate growth of principal with limited downside risk over a market cycle.

Moderate	M01	M02	M03	M04
	0-5 Yrs	6-10 Yrs	11-15 Yrs	16+ Yrs
NC Large Cap Value				
NC Large Cap Index	5%	7%	7%	10%
NC Large Cap Growth				
NC Large Cap Core	4%	6%	8%	10%
NC Small / Mid Cap Value				
NC Small / Mid Cap Index	0%	0%	0%	0%
NC Small / Mid Cap Growth				
NC Small / Mid Cap Core	8%	10%	10%	20%
NC Global Equity	11%	15%	19%	25%
NC International	6%	7%	9%	12%
NC International Index	0%	0%	0%	0%
NC Fixed Income	13%	12%	10%	4%
NC Fixed Income Index	13%	13%	10%	5%
NC Stable Value	31%	21%	14%	5%
NC Inflation Sensitive	9%	9%	9%	9%

Aggressive

The primary investment objective of the Aggressive Model Allocation is to maximize growth of principal over the long term with a reasonable level of overall volatility.

Aggressive	A01	A02	A03	A04
	0-5 Yrs	6-10 Yrs	11-15 Yrs	16+ Yrs
NC Large Cap Value				
NC Large Cap Index	7%	7%	8%	11%
NC Large Cap Growth				
NC Large Cap Core	6%	8%	10%	12%
NC Small / Mid Cap Value				
NC Small / Mid Cap Index	0%	0%	0%	0%
NC Small / Mid Cap Growth				
NC Small / Mid Cap Core	12%	14%	18%	22%
NC Global Equity	16%	19%	24%	30%
NC International	8%	9%	12%	15%
NC International Index	0%	0%	0%	0%
NC Fixed Income	12%	10%	5%	0%
NC Fixed Income Index	12%	10%	6%	0%
NC Stable Value	17%	13%	7%	0%
NC Inflation Sensitive	10%	10%	10%	10%



INVESTMENT MANAGEMENT

Appendix B: Prudential's new GoalMaker® Model (3x9)

Conservative

	Pre-Retirement						Post-Retirement		
Years to Retirement	25+	20-25	16-20	10-15	5-10	0-5	0-5	5-10	10+
US Large	28%	24%	21%	17%	14%	13%	11%	11%	10%
SMID Growth	9%	8%	7%	6%	5%	4%	3%	2%	2%
SMID Value	9%	8%	7%	6%	5%	4%	3%	2%	2%
International Stocks	19%	17%	14%	11%	9%	6%	5%	4%	4%
Emerging	8%	7%	5%	4%	3%	2%	2%	1%	0%
Bonds	11%	15%	17%	20%	23%	26%	27%	28%	28%
SV	11%	17%	25%	32%	37%	42%	46%	49%	51%
Real Assets	5%	4%	4%	4%	4%	3%	3%	3%	3%
Equity	73%	64%	54%	44%	36%	29%	24%	20%	18%
Bonds	22%	32%	42%	52%	60%	68%	73%	77%	79%
Alternatives	5%	4%	4%	4%	4%	3%	3%	3%	3%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Moderate

	Pre-Retirement						Post-Retirement		
Years to Retirement	25+	20-25	16-20	10-15	5-10	0-5	0-5	5-10	10+
US Large	33%	31%	28%	24%	22%	17%	16%	16%	14%
SMID Growth	11%	10%	9%	8%	7%	6%	5%	4%	3%
SMID Value	11%	10%	9%	8%	7%	6%	5%	4%	3%
International Stocks	22%	21%	19%	17%	13%	11%	10%	7%	7%
Emerging	9%	8%	7%	6%	5%	4%	3%	3%	2%
Bonds	4%	7%	11%	15%	19%	23%	25%	26%	27%
SV	3%	7%	11%	17%	22%	28%	32%	36%	40%
Real Assets	7%	6%	6%	5%	5%	5%	4%	4%	4%
Equity	86%	80%	72%	63%	54%	44%	39%	34%	29%
Bonds	7%	14%	22%	32%	41%	51%	57%	62%	67%
Alternatives	7%	6%	6%	5%	5%	5%	4%	4%	4%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%



Dale R. Folwell, CPA

INVESTMENT MANAGEMENT

Aggressive Years to Retirement	Pre-Retirement						Post-Retirement		
	25+	20-25	16-20	10-15	5-10	0-5	0-5	5-10	10+
US Large	31%	32%	31%	29%	28%	25%	22%	22%	20%
SMID Growth	12%	12%	11%	10%	9%	8%	7%	6%	5%
SMID Value	12%	12%	11%	10%	9%	8%	7%	6%	5%
International Stocks	25%	24%	23%	22%	19%	15%	13%	12%	11%
Emerging	10%	10%	9%	8%	6%	5%	4%	3%	2%
Bonds	2%	2%	5%	8%	12%	17%	20%	21%	23%
SV	1%	1%	3%	6%	11%	16%	22%	25%	29%
Real Assets	7%	7%	7%	7%	6%	6%	5%	5%	5%
Equity	90%	90%	85%	79%	71%	61%	53%	49%	43%
Bonds	3%	3%	8%	14%	23%	33%	42%	46%	52%
Alternatives	7%	7%	7%	7%	6%	6%	5%	5%	5%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%



Dale R. Folwell, CPA

INVESTMENT MANAGEMENT

Appendix C: Morningstar Lifetime Allocation Indexes

Conservative

Target Retirement Year:	2060	2055	2050	2045	2040	2035	2030	2025	2020	2015	2010	2005	2000	Income
Stocks %	82.92	82.37	80.54	76.50	67.82	56.59	45.96	38.00	32.19	27.42	23.67	21.37	20.61	20.61
U.S. %	48.52	49.17	49.04	47.52	43.00	36.64	30.39	25.64	22.15	19.23	16.91	15.53	15.12	15.12
Non-U.S. %	34.41	33.20	31.50	28.98	24.82	19.95	15.57	12.36	10.04	8.19	6.76	5.84	5.48	5.49
Morningstar Large Value	8.58	8.84	8.95	8.80	8.05	6.92	5.78	4.91	4.27	3.74	3.31	3.08	3.02	3.02
Morningstar Large Core	8.33	8.58	8.69	8.54	7.81	6.72	5.61	4.76	4.15	3.63	3.22	2.99	2.94	2.94
Morningstar Large Growth	8.33	8.58	8.69	8.54	7.81	6.72	5.61	4.76	4.15	3.63	3.22	2.99	2.94	2.94
Morningstar Mid Value	3.68	3.79	3.84	3.77	3.45	2.97	2.48	2.10	1.83	1.60	1.42	1.32	1.30	1.30
Morningstar Mid Core	3.57	3.68	3.72	3.66	3.35	2.88	2.40	2.04	1.78	1.56	1.38	1.28	1.26	1.26
Morningstar Mid Growth	3.57	3.68	3.72	3.66	3.35	2.88	2.40	2.04	1.78	1.56	1.38	1.28	1.26	1.26
Morningstar Small Value	3.57	3.45	3.28	3.01	2.56	2.05	1.58	1.24	0.99	0.79	0.63	0.52	0.48	0.48
Morningstar Small Core	3.47	3.35	3.18	2.92	2.49	1.99	1.53	1.20	0.96	0.76	0.61	0.51	0.47	0.47
Morningstar Small Growth	3.47	3.35	3.18	2.92	2.49	1.99	1.53	1.20	0.96	0.76	0.61	0.51	0.47	0.47
Morningstar US REIT	1.97	1.88	1.80	1.72	1.63	1.55	1.47	1.38	1.30	1.22	1.13	1.05	1.00	1.00
Morningstar Dev Mkts ex-US	23.53	23.04	22.17	20.69	17.97	14.64	11.59	9.32	7.67	6.34	5.30	4.64	4.39	4.39
Morningstar Emerging Mkts	10.87	10.16	9.32	8.29	6.85	5.31	3.99	3.04	2.37	1.85	1.46	1.20	1.10	1.10
Bonds %	15.08	15.63	17.46	21.08	28.09	36.45	43.14	46.60	47.63	47.27	45.71	42.87	40.68	40.68
U.S. %	12.71	13.30	14.98	18.19	24.26	31.50	37.31	40.33	41.24	40.96	39.62	37.16	35.27	35.27
Non-U.S. %	2.37	2.34	2.48	2.89	3.83	4.95	5.83	6.27	6.38	6.32	6.09	5.71	5.42	5.42
Morningstar Long-Term Core	10.04	10.13	10.35	11.53	14.46	17.43	18.81	18.06	15.76	12.49	8.42	3.73	0.72	0.72
Morningstar Intermediate Core	2.67	3.17	4.63	6.53	9.18	12.62	15.88	18.33	20.13	21.61	22.78	23.51	23.75	23.75
Morningstar Short-Term Core	0.00	0.00	0.00	0.12	0.61	1.46	2.62	3.94	5.35	6.85	8.42	9.93	10.80	10.80
Morningstar Gbl Ex US Govt Bond	2.37	2.34	2.48	2.89	3.83	4.95	5.83	6.27	6.38	6.32	6.09	5.71	5.42	5.42
Inflation Hedge %	2.00	2.00	2.00	2.35	3.72	6.08	9.33	13.03	16.98	21.19	25.56	29.80	32.23	32.23
Commodities	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Morningstar Long-Term TIPS	0.00	0.00	0.00	0.35	1.72	4.08	7.33	10.01	11.29	11.52	10.51	8.13	6.05	6.05
Morningstar Short-Term TIPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	3.69	7.68	13.05	19.67	24.18	24.18
Cash %	0.00	0.00	0.00	0.07	0.37	0.88	1.57	2.36	3.21	4.11	5.05	5.96	6.48	6.48
Total %	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Moderate



Dale R. Folwell, CPA

INVESTMENT MANAGEMENT

Target Retirement Year:	2060	2055	2050	2045	2040	2035	2030	2025	2020	2015	2010	2005	2000	Income
Stocks %	90.03	90.06	89.75	88.95	85.47	78.05	67.59	57.00	48.69	42.75	38.23	35.05	33.56	33.56
U.S. %	52.19	53.33	54.28	54.92	53.88	50.27	44.49	38.36	33.48	29.99	27.35	25.55	24.73	24.73
Non-U.S. %	37.84	36.73	35.48	34.03	31.59	27.79	23.10	18.64	15.22	12.75	10.88	9.50	8.84	8.84
Morningstar Large Value	9.07	9.43	9.75	10.02	9.97	9.41	8.40	7.28	6.39	5.76	5.30	5.00	4.87	4.87
Morningstar Large Core	8.80	9.15	9.47	9.73	9.68	9.13	8.15	7.06	6.20	5.59	5.14	4.85	4.72	4.72
Morningstar Large Growth	8.80	9.15	9.47	9.73	9.68	9.13	8.15	7.06	6.20	5.59	5.14	4.85	4.72	4.72
Morningstar Mid Value	3.89	4.04	4.18	4.30	4.27	4.03	3.60	3.12	2.74	2.47	2.27	2.14	2.09	2.09
Morningstar Mid Core	3.77	3.92	4.06	4.17	4.15	3.91	3.49	3.03	2.66	2.40	2.20	2.08	2.02	2.02
Morningstar Mid Growth	3.77	3.92	4.06	4.17	4.15	3.91	3.49	3.03	2.66	2.40	2.20	2.08	2.02	2.02
Morningstar Small Value	3.78	3.68	3.57	3.43	3.18	2.78	2.30	1.83	1.47	1.21	1.01	0.85	0.77	0.77
Morningstar Small Core	3.67	3.58	3.47	3.33	3.08	2.70	2.23	1.78	1.43	1.17	0.98	0.83	0.75	0.75
Morningstar Small Growth	3.67	3.58	3.47	3.33	3.08	2.70	2.23	1.78	1.43	1.17	0.98	0.83	0.75	0.75
Morningstar US REIT	2.97	2.88	2.80	2.72	2.63	2.55	2.47	2.38	2.30	2.22	2.13	2.05	2.00	2.00
Morningstar Dev Mkts ex-US	25.89	25.49	24.98	24.30	22.87	20.39	17.18	14.06	11.63	9.87	8.53	7.55	7.07	7.07
Morningstar Emerging Mkts	11.96	11.24	10.50	9.73	8.72	7.39	5.91	4.59	3.59	2.88	2.35	1.96	1.77	1.77
Bonds %	7.00	7.06	7.45	8.17	11.07	17.07	24.82	31.55	35.47	36.86	36.68	35.19	33.87	33.87
U.S. %	5.90	6.00	6.39	7.05	9.56	14.76	21.46	27.31	30.71	31.94	31.79	30.50	29.36	29.36
Non-U.S. %	1.10	1.06	1.06	1.12	1.51	2.32	3.35	4.24	4.75	4.93	4.89	4.69	4.51	4.51
Morningstar Long-Term Core	4.66	4.57	4.41	4.47	5.70	8.16	10.82	12.23	11.74	9.74	6.76	3.06	0.60	0.60
Morningstar Intermediate Core	1.24	1.43	1.98	2.53	3.62	5.91	9.13	12.41	14.99	16.85	18.28	19.30	19.78	19.78
Morningstar Short-Term Core	0.00	0.00	0.00	0.05	0.24	0.68	1.51	2.67	3.98	5.35	6.75	8.15	8.99	8.99
Morningstar Gbl Ex US Govt Bond	1.10	1.06	1.06	1.12	1.51	2.32	3.35	4.24	4.75	4.93	4.89	4.69	4.51	4.51
Inflation Hedge %	2.97	2.88	2.80	2.85	3.31	4.46	6.69	9.85	13.45	17.18	21.04	24.87	27.17	27.17
Commodities	2.97	2.88	2.80	2.72	2.63	2.55	2.47	2.38	2.30	2.22	2.13	2.05	2.00	2.00
Morningstar Long-Term TIPS	0.00	0.00	0.00	0.13	0.68	1.91	4.22	6.78	8.41	8.98	8.44	6.67	5.03	5.03
Morningstar Short-Term TIPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	2.75	5.99	10.47	16.15	20.13	20.13
Cash %	0.00	0.00	0.00	0.03	0.15	0.41	0.90	1.60	2.39	3.21	4.05	4.89	5.39	5.39
Total %	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Aggressive

Target Retirement Year:	2060	2055	2050	2045	2040	2035	2030	2025	2020	2015	2010	2005	2000	Income
Stocks %	94.03	94.12	94.20	94.19	93.67	90.85	84.35	75.07	65.64	57.90	52.04	47.59	45.20	45.20
U.S. %	53.57	54.87	56.18	57.43	58.38	57.87	54.93	49.98	44.67	40.26	36.93	34.45	33.10	33.10
Non-U.S. %	40.46	39.25	38.02	36.76	35.29	32.98	29.42	25.09	20.96	17.64	15.10	13.14	12.10	12.10
Morningstar Large Value	9.33	9.71	10.11	10.51	10.85	10.91	10.48	9.63	8.68	7.89	7.31	6.89	6.66	6.66
Morningstar Large Core	9.05	9.43	9.81	10.20	10.53	10.59	10.17	9.35	8.43	7.66	7.10	6.69	6.47	6.47
Morningstar Large Growth	9.05	9.43	9.81	10.20	10.53	10.59	10.17	9.35	8.43	7.66	7.10	6.69	6.47	6.47
Morningstar Mid Value	4.00	4.16	4.33	4.50	4.65	4.67	4.49	4.13	3.72	3.38	3.13	2.95	2.86	2.86
Morningstar Mid Core	3.88	4.04	4.21	4.37	4.51	4.54	4.36	4.01	3.61	3.28	3.04	2.87	2.77	2.77
Morningstar Mid Growth	3.88	4.04	4.21	4.37	4.51	4.54	4.36	4.01	3.61	3.28	3.04	2.87	2.77	2.77
Morningstar Small Value	3.88	3.80	3.70	3.59	3.46	3.23	2.87	2.42	2.00	1.66	1.39	1.17	1.06	1.06
Morningstar Small Core	3.77	3.69	3.59	3.49	3.35	3.13	2.78	2.35	1.94	1.61	1.35	1.14	1.03	1.03
Morningstar Small Growth	3.77	3.69	3.59	3.49	3.35	3.13	2.78	2.35	1.94	1.61	1.35	1.14	1.03	1.03
Morningstar US REIT	2.97	2.88	2.80	2.72	2.63	2.55	2.47	2.38	2.30	2.22	2.13	2.05	2.00	2.00
Morningstar Dev Mkts ex-US	27.68	27.24	26.77	26.24	25.55	24.21	21.89	18.92	16.02	13.66	11.84	10.43	9.68	9.68
Morningstar Emerging Mkts	12.79	12.01	11.25	10.51	9.74	8.77	7.53	6.17	4.95	3.99	3.26	2.71	2.42	2.42
Bonds %	3.00	3.00	3.00	3.03	3.44	5.81	10.92	17.51	23.20	26.71	28.19	28.18	27.76	27.76
U.S. %	2.53	2.55	2.58	2.62	2.97	5.02	9.45	15.16	20.09	23.14	24.43	24.42	24.06	24.06
Non-U.S. %	0.47	0.45	0.43	0.42	0.47	0.79	1.48	2.36	3.11	3.57	3.76	3.75	3.70	3.70
Morningstar Long-Term Core	2.02	1.97	1.80	1.68	1.79	2.81	4.82	6.87	7.78	7.14	5.26	2.47	0.49	0.49
Morningstar Intermediate Core	0.51	0.58	0.77	0.92	1.10	1.98	3.96	6.80	9.71	12.13	13.99	15.42	16.20	16.20
Morningstar Short-Term Core	0.00	0.00	0.00	0.02	0.08	0.23	0.66	1.48	2.61	3.87	5.19	6.53	7.37	7.37
Morningstar Gbl Ex US Govt Bond	0.47	0.45	0.43	0.42	0.47	0.79	1.48	2.36	3.11	3.57	3.76	3.75	3.70	3.70
Inflation Hedge %	2.97	2.88	2.80	2.77	2.84	3.20	4.32	6.53	9.60	13.06	16.66	20.32	22.62	22.62
Commodities	2.97	2.88	2.80	2.72	2.63	2.55	2.47	2.38	2.30	2.22	2.13	2.05	2.00	2.00
Morningstar Long-Term TIPS	0.00	0.00	0.00	0.05	0.21	0.65	1.86	3.76	5.50	6.51	6.48	5.34	4.12	4.12
Morningstar Short-Term TIPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	1.80	4.34	8.05	12.93	16.50	16.50
Cash %	0.00	0.00	0.00	0.01	0.05	0.14	0.40	0.89	1.56	2.32	3.11	3.92	4.42	4.42
Total %	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00