

# Morningstar® Lifetime Allocation Indexes

## Aggressive Summary Allocations

Data as of June 2020

Target Retirement Year:	2065	2060	2055	2050	2045	2040	2035	2030	2025	2020	2015	2010	2005	2000
<b>Stocks %</b>	<b>97</b>	<b>97</b>	<b>97</b>	<b>96.96</b>	<b>96.70</b>	<b>94.96</b>	<b>89.90</b>	<b>81.38</b>	<b>71.61</b>	<b>62.97</b>	<b>56.38</b>	<b>51.26</b>	<b>47.70</b>	<b>47.20</b>
U.S. %	54.79	55.95	57.11	58.25	59.26	59.35	57.33	52.97	47.57	42.68	38.95	36.08	34.17	33.82
Non-U.S. %	42.21	41.05	39.89	38.71	37.44	35.60	32.57	28.41	24.04	20.29	17.42	15.18	13.53	13.38
Morningstar Large Value	11.50	11.95	12.42	12.89	13.33	13.57	13.29	12.42	11.26	10.20	9.41	8.81	8.45	8.36
Morningstar Large Core	9.35	9.72	10.10	10.48	10.85	11.04	10.81	10.10	9.16	8.30	7.65	7.17	6.88	6.80
Morningstar Large Growth	6.66	6.92	7.19	7.46	7.72	7.85	7.69	7.19	6.52	5.91	5.45	5.10	4.89	4.84
Morningstar Mid Value	4.93	5.12	5.32	5.52	5.71	5.81	5.69	5.32	4.83	4.37	4.03	3.78	3.62	3.58
Morningstar Mid Core	4.01	4.17	4.33	4.49	4.65	4.73	4.63	4.33	3.93	3.56	3.28	3.07	2.95	2.91
Morningstar Mid Growth	2.85	2.97	3.08	3.20	3.31	3.37	3.30	3.08	2.79	2.53	2.33	2.19	2.10	2.07
Morningstar Small Value	4.56	4.46	4.34	4.21	4.06	3.84	3.48	3.00	2.50	2.07	1.73	1.46	1.25	1.23
Morningstar Small Core	3.96	3.87	3.77	3.66	3.53	3.34	3.03	2.61	2.17	1.80	1.50	1.27	1.08	1.07
Morningstar Small Growth	3.48	3.40	3.31	3.21	3.10	2.93	2.66	2.29	1.91	1.58	1.32	1.11	0.95	0.94
Morningstar US REIT	3.50	3.38	3.25	3.13	3.00	2.88	2.75	2.63	2.50	2.38	2.25	2.13	2.00	2.00
Morningstar Dev Mkts ex-US	29.04	28.66	28.26	27.82	27.29	26.32	24.41	21.59	18.51	15.83	13.77	12.16	10.97	10.85
Morningstar Emerging Mkts	13.17	12.39	11.63	10.89	10.15	9.28	8.16	6.83	5.53	4.46	3.65	3.03	2.56	2.53
<b>Bonds %</b>	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>3.04</b>	<b>3.14</b>	<b>4.55</b>	<b>8.61</b>	<b>14.90</b>	<b>21.23</b>	<b>25.70</b>	<b>27.89</b>	<b>28.42</b>	<b>27.51</b>	<b>27.77</b>
U.S. %	2.34	2.37	2.40	2.46	2.54	3.68	6.96	12.05	17.15	20.72	22.45	22.81	21.99	22.20
Non-U.S. %	0.66	0.63	0.60	0.58	0.60	0.87	1.65	2.85	4.08	4.96	5.44	5.61	5.52	5.57
Morningstar Long-Term Core	1.78	1.8	1.66	1.53	1.50	2.04	3.56	5.57	6.95	6.99	5.75	3.57	0.70	0.71
Morningstar Intermediate Core	0.41	0.42	0.54	0.68	0.76	1.21	2.50	4.77	7.51	10.11	12.30	14.17	15.67	15.82
Morningstar Short-Term Core	0.15	0.15	0.19	0.24	0.27	0.43	0.90	1.71	2.69	3.62	4.40	5.07	5.61	5.67
Morningstar Gbl Ex US Govt Bond	0.20	0.19	0.18	0.18	0.19	0.28	0.53	0.92	1.34	1.64	1.82	1.90	1.88	1.90
Morningstar EM Sovereign Bond	0.46	0.44	0.42	0.40	0.41	0.59	1.12	1.93	2.74	3.32	3.62	3.71	3.63	3.67
<b>Inflation Hedge %</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.13</b>	<b>0.41</b>	<b>1.24</b>	<b>3.09</b>	<b>5.94</b>	<b>9.40</b>	<b>13.06</b>	<b>16.87</b>	<b>20.58</b>	<b>20.78</b>
Commodities	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Morningstar Long-Term TIPS	0.00	0.00	0.00	0.00	0.13	0.41	1.24	2.99	4.82	6.14	6.47	5.70	3.71	3.74
Morningstar Short-Term TIPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	1.12	3.26	6.59	11.17	16.88	17.04
<b>Cash %</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.03</b>	<b>0.08</b>	<b>0.25</b>	<b>0.63</b>	<b>1.22</b>	<b>1.92</b>	<b>2.67</b>	<b>3.45</b>	<b>4.21</b>	<b>4.25</b>
<b>Total %</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

For more information on Morningstar Indexes, call 1 312 384-3735 or visit us on the Web at <http://indexes.morningstar.com>.

# Morningstar® Lifetime Allocation Indexes

## Moderate Summary Allocations

Data as of June 2020

Target Retirement Year:	2065	2060	2055	2050	2045	2040	2035	2030	2025	2020	2015	2010	2005	2000
<b>Stocks %</b>	<b>93.00</b>	<b>92.99</b>	<b>92.77</b>	<b>92.18</b>	<b>89.96</b>	<b>84.09</b>	<b>74.49</b>	<b>63.47</b>	<b>53.99</b>	<b>47.17</b>	<b>42.05</b>	<b>38.23</b>	<b>35.86</b>	<b>35.56</b>
U.S. %	52.60	53.70	54.68	55.44	55.21	52.69	47.68	41.52	36.08	32.17	29.24	27.07	25.84	25.63
Non-U.S. %	40.40	39.29	38.09	36.74	34.75	31.40	26.81	21.95	17.91	15.00	12.81	11.15	10.02	9.94
Morningstar Large Value	11.00	11.44	11.86	12.23	12.37	11.97	10.94	9.59	8.39	7.54	6.92	6.47	6.26	6.21
Morningstar Large Core	8.95	9.31	9.65	9.95	10.06	9.73	8.90	7.80	6.83	6.13	5.63	5.27	5.09	5.05
Morningstar Large Growth	6.37	6.62	6.87	7.08	7.16	6.93	6.33	5.55	4.86	4.37	4.00	3.75	3.63	3.59
Morningstar Mid Value	4.72	4.90	5.08	5.24	5.30	5.13	4.69	4.11	3.60	3.23	2.96	2.77	2.68	2.66
Morningstar Mid Core	3.84	3.99	4.13	4.26	4.31	4.17	3.81	3.34	2.93	2.63	2.41	2.26	2.18	2.16
Morningstar Mid Growth	2.73	2.84	2.94	3.03	3.07	2.97	2.71	2.38	2.08	1.87	1.72	1.61	1.55	1.54
Morningstar Small Value	4.37	4.26	4.14	4.00	3.77	3.39	2.87	2.32	1.86	1.53	1.27	1.07	0.92	0.92
Morningstar Small Core	3.79	3.70	3.60	3.47	3.27	2.94	2.49	2.02	1.62	1.33	1.10	0.93	0.80	0.80
Morningstar Small Growth	3.33	3.25	3.16	3.05	2.88	2.59	2.19	1.77	1.42	1.17	0.97	0.82	0.71	0.70
Morningstar US REIT	3.50	3.38	3.25	3.13	3.00	2.88	2.75	2.63	2.50	2.38	2.25	2.13	2.00	2.00
Morningstar Dev Mkts ex-US	27.80	27.44	26.99	26.41	25.33	23.21	20.09	16.68	13.79	11.70	10.13	8.93	8.13	8.06
Morningstar Emerging Mkts	12.60	11.86	11.10	10.33	9.42	8.19	6.72	5.27	4.12	3.30	2.68	2.22	1.89	1.88
<b>Bonds %</b>	<b>7.00</b>	<b>7.01</b>	<b>7.23</b>	<b>7.82</b>	<b>9.55</b>	<b>14.35</b>	<b>21.72</b>	<b>29.20</b>	<b>34.36</b>	<b>36.62</b>	<b>37.00</b>	<b>36.00</b>	<b>33.73</b>	<b>33.89</b>
U.S. %	5.53	5.60	5.84	6.38	7.79	11.70	17.69	23.76	27.91	29.66	29.87	28.94	26.97	27.09
Non-U.S. %	1.47	1.41	1.39	1.44	1.76	2.65	4.02	5.44	6.46	6.95	7.12	7.06	6.77	6.80
Morningstar Long-Term Core	4.20	4.25	4.04	3.98	4.61	6.49	9.06	10.99	11.31	10.01	7.65	4.53	0.86	0.86
Morningstar Intermediate Core	0.98	0.99	1.32	1.76	2.34	3.84	6.36	9.40	12.22	14.47	16.37	17.97	19.22	19.31
Morningstar Short-Term Core	0.35	0.35	0.47	0.63	0.84	1.38	2.28	3.37	4.38	5.18	5.86	6.44	6.88	6.92
Morningstar Gbl Ex US Govt Bond	0.50	0.48	0.47	0.49	0.60	0.90	1.37	1.86	2.20	2.37	2.43	2.41	2.31	2.32
Morningstar EM Sovereign Bond	0.97	0.93	0.92	0.95	1.16	1.75	2.65	3.59	4.25	4.58	4.69	4.65	4.46	4.48
<b>Inflation Hedge %</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.41</b>	<b>1.30</b>	<b>3.15</b>	<b>6.08</b>	<b>9.67</b>	<b>13.46</b>	<b>17.39</b>	<b>21.40</b>	<b>25.24</b>	<b>25.36</b>
Commodities	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Morningstar Long-Term TIPS	0.00	0.00	0.00	0.00	0.41	1.30	3.15	5.89	7.84	8.79	8.62	7.23	4.54	4.56
Morningstar Short-Term TIPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	1.83	4.67	8.78	14.17	20.70	20.80
<b>Cash %</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.08</b>	<b>0.27</b>	<b>0.64</b>	<b>1.24</b>	<b>1.98</b>	<b>2.75</b>	<b>3.56</b>	<b>4.38</b>	<b>5.16</b>	<b>5.19</b>
<b>Total %</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

For more information on Morningstar Indexes, call 1 312 384-3735 or visit us on the Web at <http://indexes.morningstar.com>.

# Morningstar® Lifetime Allocation Indexes

## Conservative Summary Allocations

Data as of June 2020

Target Retirement Year:	2065	2060	2055	2050	2045	2040	2035	2030	2025	2020	2015	2010	2005	2000
<b>Stocks %</b>	<b>85.00</b>	<b>84.67</b>	<b>83.65</b>	<b>80.47</b>	<b>73.73</b>	<b>63.19</b>	<b>51.96</b>	<b>42.84</b>	<b>36.35</b>	<b>31.23</b>	<b>27.02</b>	<b>24.10</b>	<b>22.72</b>	<b>22.61</b>
U.S. %	47.20	48.20	48.79	48.11	45.19	39.74	33.55	28.37	24.66	21.68	19.18	17.47	16.78	16.70
Non-U.S. %	37.80	36.48	34.85	32.36	28.54	23.45	18.42	14.47	11.69	9.55	7.84	6.63	5.94	5.91
Morningstar Large Value	9.91	10.31	10.62	10.64	10.13	8.98	7.63	6.48	5.67	5.02	4.38	4.12	4.02	4.00
Morningstar Large Core	8.06	8.38	8.64	8.65	8.24	7.31	6.20	5.27	4.61	4.08	3.64	3.35	3.27	3.26
Morningstar Large Growth	5.74	5.97	6.15	6.16	5.86	5.20	4.42	3.75	3.28	2.91	2.59	2.39	2.33	2.32
Morningstar Mid Value	4.25	4.42	4.55	4.56	4.34	3.85	3.27	2.78	2.43	2.15	1.92	1.77	1.72	1.72
Morningstar Mid Core	3.45	3.59	3.70	3.71	3.53	3.13	2.66	2.26	1.98	1.75	1.56	1.44	1.40	1.40
Morningstar Mid Growth	2.46	2.56	2.64	2.64	2.51	2.23	1.89	1.61	1.41	1.25	1.11	1.02	1.00	0.99
Morningstar Small Value	3.93	3.84	3.70	3.47	3.07	2.53	1.99	1.55	1.25	1.00	0.81	0.67	0.58	0.58
Morningstar Small Core	3.41	3.33	3.22	3.01	2.67	2.20	1.72	1.35	1.08	0.87	0.70	0.58	0.50	0.50
Morningstar Small Growth	3.00	2.93	2.83	2.64	2.34	1.93	1.52	1.19	0.95	0.77	0.62	0.51	0.44	0.44
Morningstar US REIT	3.00	2.88	2.75	2.63	2.50	2.38	2.25	2.13	2.00	1.88	1.75	1.63	1.50	1.50
Morningstar Dev Mkts ex-US	26.01	25.44	24.63	23.17	20.70	17.23	13.70	10.90	8.92	7.37	6.12	5.24	4.75	4.73
Morningstar Emerging Mkts	11.79	11.04	10.22	9.19	7.84	6.22	4.72	3.57	2.77	2.18	1.71	1.39	1.19	1.18
<b>Bonds %</b>	<b>15.00</b>	<b>15.33</b>	<b>16.35</b>	<b>19.53</b>	<b>25.00</b>	<b>33.22</b>	<b>40.93</b>	<b>45.76</b>	<b>47.60</b>	<b>47.73</b>	<b>46.64</b>	<b>44.26</b>	<b>40.64</b>	<b>40.70</b>
U.S. %	11.70	12.10	13.07	15.79	20.23	26.88	33.11	37.00	38.46	38.51	37.55	35.52	32.49	32.54
Non-U.S. %	3.30	3.23	3.29	3.74	4.78	6.34	7.82	8.76	9.14	9.22	9.09	8.73	8.15	8.16
Morningstar Long-Term Core	8.89	9.20	9.05	9.86	11.97	14.90	16.95	17.12	15.58	12.99	9.61	5.56	1.04	1.04
Morningstar Intermediate Core	2.07	2.14	2.96	4.37	6.08	8.82	11.90	14.64	16.84	18.79	20.57	22.06	23.16	23.19
Morningstar Short-Term Core	0.74	0.77	1.06	1.56	2.18	3.16	4.26	5.24	6.03	6.73	7.37	7.90	8.29	8.31
Morningstar Gbl Ex US Govt Bond	0.99	0.98	1.01	1.16	1.50	2.01	2.51	2.84	3.00	3.05	3.04	2.95	2.78	2.79
Morningstar EM Sovereign Bond	2.31	2.25	2.28	2.58	3.28	4.33	5.32	5.92	6.15	6.17	6.05	5.78	5.37	5.38
<b>Inflation Hedge %</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.05</b>	<b>2.98</b>	<b>5.90</b>	<b>9.47</b>	<b>13.32</b>	<b>17.47</b>	<b>21.86</b>	<b>26.27</b>	<b>30.41</b>	<b>30.46</b>
Commodities	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Morningstar Long-Term TIPS	0.00	0.00	0.00	0.00	1.05	2.98	5.90	9.17	10.80	11.41	10.83	8.87	5.47	5.48
Morningstar Short-Term TIPS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	2.52	6.06	11.03	17.40	24.94	24.98
<b>Cash %</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.21</b>	<b>0.61</b>	<b>1.21</b>	<b>1.94</b>	<b>2.73</b>	<b>3.57</b>	<b>4.47</b>	<b>5.37</b>	<b>6.22</b>	<b>6.23</b>
<b>Total %</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

For more information on Morningstar Indexes, call 1 312 384-3735 or visit us on the Web at <http://indexes.morningstar.com>.

# Morningstar® Lifetime Allocation Index Family

## Key Attributes

- ▶ Based on Ibbotson Associates' asset allocation expertise
- ▶ Three risk profiles for different risk tolerances
- ▶ Comprehensive coverage, including global and alternative asset classes
- ▶ Pure asset-class exposure

## Learn More

For more information about all of Morningstar's indexes, visit <http://indexes.morningstar.com> or contact us: [indexes@morningstar.com](mailto:indexes@morningstar.com) +1 312 384-3735

Investors are driving strong demand for retirement income for two reasons. Increases in life expectancy and the cost of retirement necessities like healthcare are raising the cost of retirement. Meanwhile, historic sources of retirement income such as corporate pensions and government entitlements are fading, shifting the retirement funding responsibility to the individual.

## A New Benchmark

The financial services industry recognizes the challenge facing investors and offers a growing line of funds that incorporate professional allocation advice designed around expected retirement dates.

Unlike single asset class indexes funds, asset allocation funds have unique properties that can make benchmarking complex. Fiduciaries and investors alike are grappling with the issue of how to choose and evaluate a target date fund.

The Morningstar Lifetime Allocation Index family is designed to meet the benchmarking needs of target date investors by offering an objective yardstick for performance comparison. The family consists of a set of 14 indexes available in five-year increments across three risk profiles: aggressive, moderate, and conservative.

There are 10 indexes for the 2015—2060 accumulation period. The 2010, 2005, 2000 and Income indexes cover the post-retirement allocation.

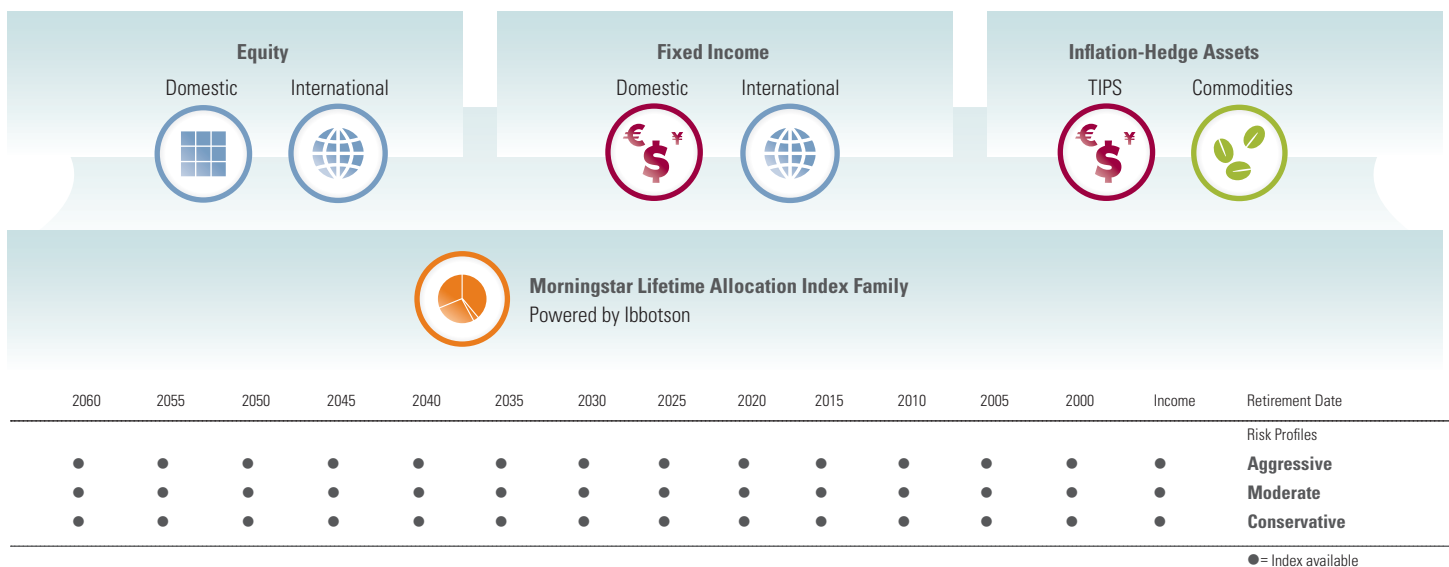
## Asset Allocation by Ibbotson Associates

The indexes utilize asset allocation methodologies developed and maintained by Ibbotson Associates, a leader in asset allocation research for over 30 years and a Morningstar company since 2006. The lifetime allocation strategies, global asset exposures, risk profiles and inflation-hedging features are products of Ibbotson's real-world-tested research. Ibbotson's capital markets research and annual government survey reviews on consumer income and net worth are incorporated each summer into the asset allocations used by the index family.

## Asset Class Exposure by Morningstar Indexes

Morningstar's comprehensive family of equity, bond and commodity indexes are the components in the allocation indexes. Morningstar indexes are specifically designed to be seamless building blocks for investable products that deliver pure asset-class exposure. Morningstar indexes cover a global set of stocks, bonds and commodities.

## Global Asset Class Coverage using Morningstar's Seamless Index Family



**Key Steps in the Allocation Methodology**

*Step 1*—Assemble all available asset class investments, define the investment goal or liability, and model the efficient frontier

*Step 2*—Define the optimal target market portfolio that represents the point of tangency with the Capital Market Line

*Step 3*—Model how the total value of human capital fades over time as wages are earned, saved and spent

*Step 4*—Calculate the financial capital allocations required to maintain the static market portfolio mix, given the changes in human capital

**The Human Capital Asset**

Human capital is defined as the present value of a person’s future earnings. This ability to work and earn money over time is like a giant bond that provides fairly stable cash flows.

The human capital bond is not investment-grade for all investors however. Some investors have stable income streams and thus should have a higher capacity for market risk. Others have income streams that are more sensitive to economic conditions and should therefore have a more conservative financial asset allocation.

**Risk Profile—One Size Does Not Fit All**

The Morningstar Lifetime Index family provides accumulation and post-retirement benchmarks for three risk profiles to accommodate variations in risk preference and risk capacity.

**Inflation Hedges**

Preserving purchasing power through retirement should be a key goal. The Morningstar Lifetime Allocation Indexes have allocations to Treasury Inflation-Protected Securities (TIPS) and commodities to help hedge against the effects of inflation.

**Global Exposure**

The stock exposures in the index family go beyond U.S. stocks to include prudent levels of developed and emerging market equities. The bond allocations include fixed income securities from developed nations.

**Annual Reconstitution**

Asset class weights are adjusted annually to incorporate Ibbotson’s updated assumptions. The indexes are rebalanced quarterly and priced daily.

**Ibbotson’s Lifetime Asset Allocation Methodology: Modern Portfolio Theory by the numbers**

