



MASON
INVESTMENT ADVISORY
SERVICES, INC.

Institutional Investment Consulting

Hutchinson Community Foundation

January 30, 2023

PROPRIETARY AND CONFIDENTIAL.
FOR INFORMATIONAL PURPOSES ONLY.

**Hutchinson Community Foundation
Investment Committee Meeting Agenda**

January 30, 2023

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UPDATE ON TRANSITION



SUSTAINABLE WITHDRAWAL ANALYSIS

SUSTAINABLE WITHDRAWAL MODEL

ENDOWMENT

The following analysis is intended to facilitate a discussion around the Foundation's asset allocation. Three scenarios, each of which pair a specific allocation strategy and spending rate, were analyzed.

- **Scenario 1 (5% Payout, Risk Level 4, 20 Quarters):**
 - Utilizes a 5% spending rate
 - Utilizes a Risk Level 4 asset allocation strategy (*Risk Level 4 is a back test of Mason's "D" model portfolio, with its 77/23 equity/fixed income allocation*)
- **Scenario 2 (5% Payout, Risk Level 3, 20 Quarters):**
 - Utilizes a 5% spending rate
 - Utilizes a Risk Level 3 asset allocation strategy (*Risk Level 3 is a back test of Mason's "C" model portfolio, with its 65/35 equity/fixed income allocation*)
- **Scenario 3 (4% Payout, Risk Level 4, 20 Quarters):**
 - Utilizes a 4% spending rate
 - Utilizes a Risk Level 4 asset allocation strategy
- **All outputs discussed in this analysis are inflation adjusted numbers unless otherwise noted. All scenarios are based on a portfolio with the following fixed inputs, or constants:**
- **Beginning Value: \$70,000,000**
- **Total Portfolio Expense Ratio: 0.54% per year (estimate of current investment consulting and management fees.)**
 - This percentage is divided by 12 to calculate monthly payments, and is calculated each month based on the market value of the portfolio
- **Administrative Fee: 1.25% per year**
 - Calculated in same way as the expense ratio
- **Beginning Date of back tested data: December 31, 1925**

SUSTAINABLE WITHDRAWAL MODEL - ENDOWMENT

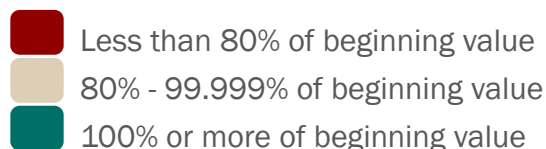
SUMMARY CHARTS

Avg Ending Value (Inflation Adjusted)	Rolling 50 Years 553 Periods	Rolling 25 Years 853 Periods	Rolling 10 Years 1033 Periods	Rolling 5 Years 1093 Periods
5% Risk Level 4	\$105,497,907	\$96,246,301	\$77,979,872	\$73,784,743
Success Rate	65%	60%	61%	54%
1st Decile	\$54,590,215	\$53,127,235	\$42,245,380	\$45,805,810

5% Risk Level 3	\$64,261,261	\$73,835,011	\$70,815,805	\$70,200,212
Success Rate	39%	43%	51%	46%
1st Decile	\$40,157,075	\$46,247,628	\$42,722,647	\$48,380,410

4% Risk Level 4	\$172,484,739	\$122,992,549	\$86,266,371	\$77,587,869
Success Rate	100%	90%	70%	61%
1st Decile	\$92,403,502	\$69,853,005	\$47,724,458	\$48,747,884

Average Ending Value (Nominal)	Rolling 50 Years (541 Periods)	Rolling 25 Years (841 Periods)	Rolling 10 Years (1021 Periods)	Rolling 5 Years (1081 Periods)
5% Risk Level 4	\$780,986,884	\$238,061,980	\$108,989,446	\$86,101,993
5% Risk Level 3	\$471,018,828	\$183,953,493	\$98,517,938	\$81,723,249
4% Risk Level 4	\$1,273,002,551	\$303,631,378	\$120,391,869	\$90,507,295



SUSTAINABLE WITHDRAWAL MODEL - ENDOWMENT

FIVE YEAR INFLATION ADJUSTED

	Scenario 1	Scenario 2	Scenario 3
5 Year Inflation Adjusted Ending Values	5% Risk Level 4	5% Risk Level 3	4% Risk Level 4
Success Rate	54%	46%	61%
Average Ending Value	\$73,784,743	\$70,200,212	\$77,587,869
1st	\$31,284,082	\$35,453,505	\$33,406,864
10th	\$45,805,810	\$48,380,410	\$48,747,884
20th	\$55,911,524	\$55,342,955	\$59,144,508
30th	\$61,141,192	\$60,190,411	\$64,686,704
40th	\$66,962,147	\$64,125,418	\$70,538,383
50th	\$71,796,074	\$68,450,177	\$75,576,025
60th	\$76,594,976	\$72,329,436	\$80,494,518
70th	\$82,467,770	\$77,477,031	\$86,572,628
80th	\$89,718,957	\$82,560,501	\$93,955,591
90th	\$101,804,868	\$92,956,423	\$106,335,996
99th	\$146,596,863	\$135,061,670	\$153,186,923



Less than 80% of beginning value



80% - 99.999% of beginning value



100% or more of beginning value

SUSTAINABLE WITHDRAWAL MODEL - ENDOWMENT

TEN YEAR INFLATION ADJUSTED

	Scenario 1	Scenario 2	Scenario 3
10 Year Inflation Adjusted Ending Values	5% Risk Level 4	5% Risk Level 3	4% Risk Level 4
Success Rate	61%	51%	70%
Average Ending Value	\$77,979,872	\$70,815,805	\$86,266,371
1st	\$33,501,392	\$34,927,423	\$38,222,398
10th	\$42,245,380	\$42,722,647	\$47,724,458
20th	\$53,659,493	\$52,151,657	\$59,719,345
30th	\$63,307,683	\$59,942,801	\$70,510,460
40th	\$70,550,785	\$65,111,274	\$78,874,232
50th	\$76,027,893	\$70,397,331	\$84,395,504
60th	\$83,917,998	\$74,503,430	\$92,709,752
70th	\$91,636,139	\$80,365,634	\$101,032,305
80th	\$102,180,779	\$89,467,379	\$112,233,079
90th	\$113,031,739	\$98,826,034	\$124,075,178
99th	\$143,110,840	\$117,017,944	\$156,283,691



Less than 80% of beginning value



80% - 99.999% of beginning value



100% or more of beginning value

SUSTAINABLE WITHDRAWAL MODEL - ENDOWMENT

FIVE YEAR NOMINAL

	Scenario 1	Scenario 2	Scenario 3
5 Year Nominal Ending Values	5% Risk Level 4	5% Risk Level 3	4% Risk Level 4
Success Rate	73%	71%	78%
Average Ending Value	\$86,101,993	\$81,723,249	\$90,507,295
1st	\$24,572,235	\$30,251,792	\$26,793,829
10th	\$55,325,959	\$57,728,514	\$58,899,033
20th	\$64,658,815	\$64,648,036	\$68,501,569
30th	\$72,512,815	\$70,807,505	\$76,539,872
40th	\$78,538,850	\$75,619,141	\$82,823,982
50th	\$84,638,281	\$80,099,287	\$88,961,303
60th	\$90,769,244	\$85,924,087	\$95,303,852
70th	\$97,851,940	\$90,579,516	\$102,639,079
80th	\$105,128,015	\$97,374,910	\$110,152,201
90th	\$118,130,491	\$108,624,149	\$123,565,826
99th	\$167,652,031	\$152,442,375	\$174,901,671



Less than 80% of beginning value



80% - 99.999% of beginning value

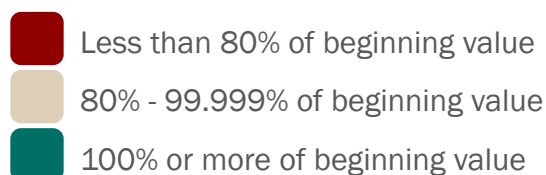


100% or more of beginning value

SUSTAINABLE WITHDRAWAL MODEL - ENDOWMENT

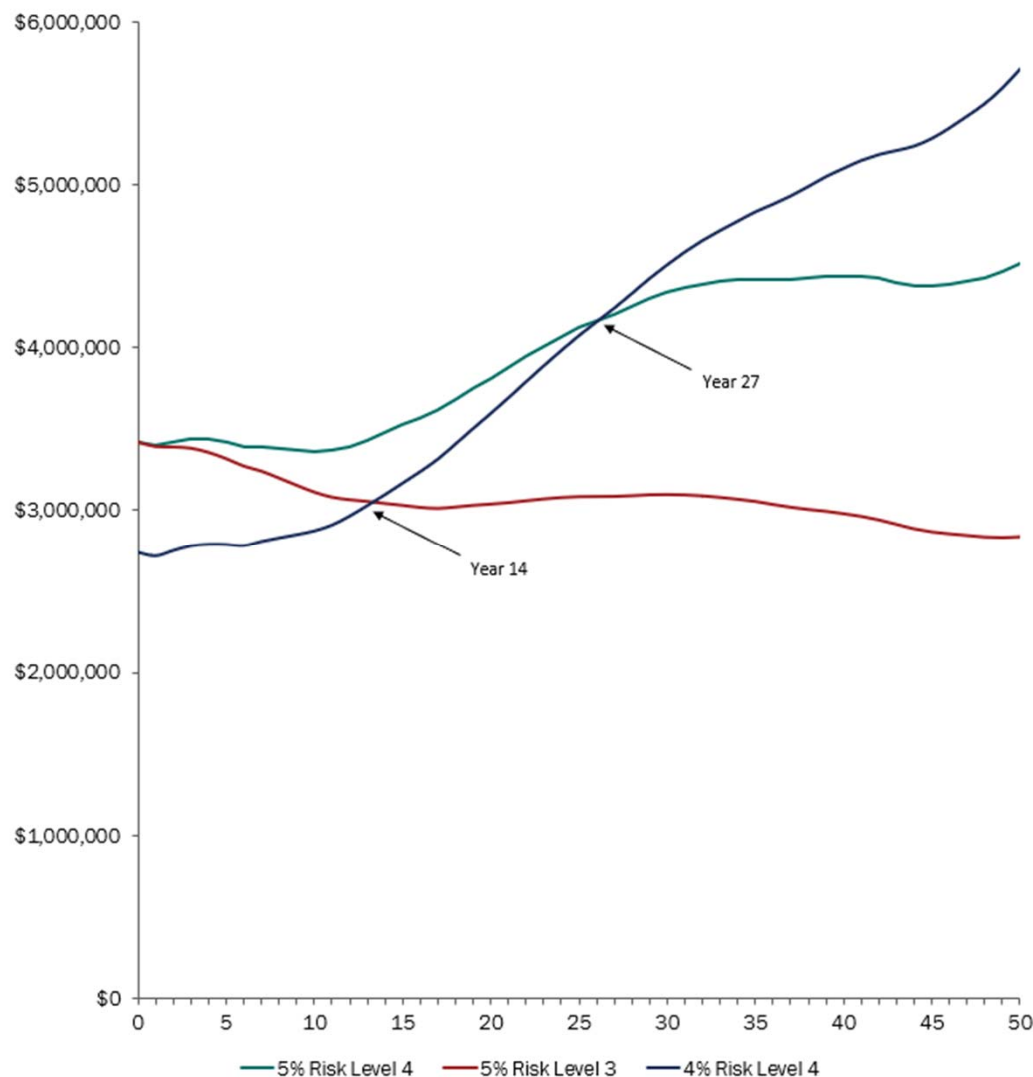
TEN YEAR NOMINAL

	Scenario 1	Scenario 2	Scenario 3
10 Year Nominal Ending Values	5% Risk Level 4	5% Risk Level 3	4% Risk Level 4
Success Rate	82%	80%	89%
Average Ending Value	\$108,989,446	\$98,517,938	\$120,391,869
1st	\$29,667,784	\$36,022,044	\$35,216,112
10th	\$61,175,036	\$61,757,421	\$69,102,573
20th	\$73,294,817	\$70,425,371	\$82,086,454
30th	\$83,418,413	\$79,001,950	\$92,634,669
40th	\$93,874,035	\$87,425,165	\$104,247,100
50th	\$103,537,405	\$93,329,850	\$114,841,947
60th	\$113,999,900	\$101,487,530	\$125,968,265
70th	\$127,510,079	\$110,337,160	\$140,163,036
80th	\$142,217,511	\$120,851,459	\$155,572,871
90th	\$173,949,886	\$146,839,641	\$190,174,892
99th	\$204,546,459	\$182,392,035	\$223,277,266



SUSTAINABLE WITHDRAWAL MODEL - ENDOWMENT

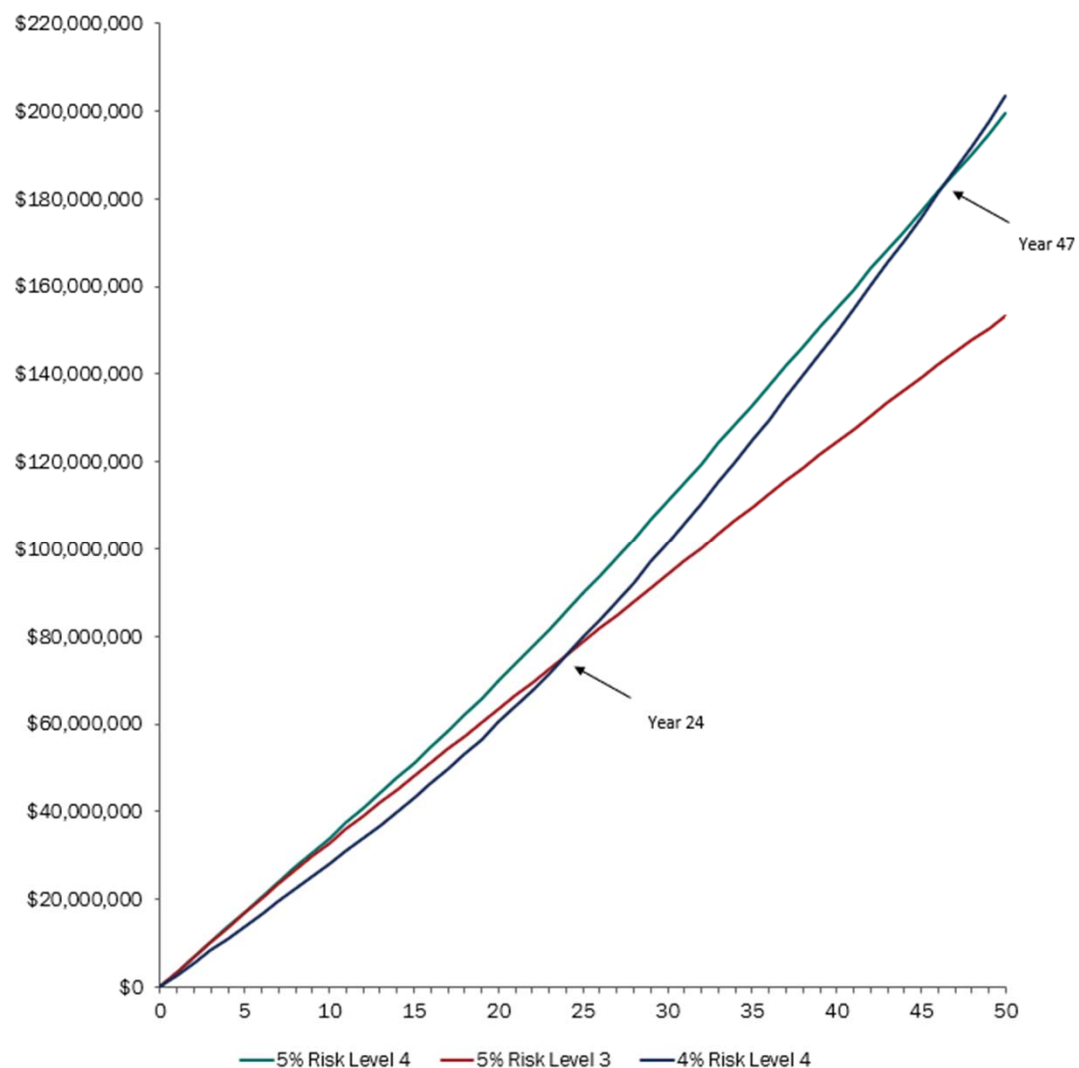
AVERAGE ANNUAL SPENDING



Scenario	Year 5	Year 10	Year 25	Year 50
5% Risk Level 4	\$3,415,926	\$3,360,661	\$4,120,690	\$4,517,949
5% Risk Level 3	\$3,322,228	\$3,115,441	\$3,087,317	\$2,839,169
4% Risk Level 4	\$2,789,175	\$2,873,974	\$4,073,683	\$5,709,286

SUSTAINABLE WITHDRAWAL MODEL - ENDOWMENT

AVERAGE CUMULATIVE SPENDING



Scenario	Year 5	Year 10	Year 25	Year 50
5% Risk Level 4	\$17,108,005	\$34,000,317	\$89,666,829	\$199,310,940
5% Risk Level 3	\$16,860,517	\$32,856,946	\$78,637,869	\$153,359,180
4% Risk Level 4	\$13,826,413	\$27,972,121	\$79,629,001	\$203,441,379



PORTFOLIO CONSTRUCTION AND MAINTENANCE MASON EMB/ACTIVE SELECTION PROCESS

PORTFOLIO CONSTRUCTION AND MAINTENANCE

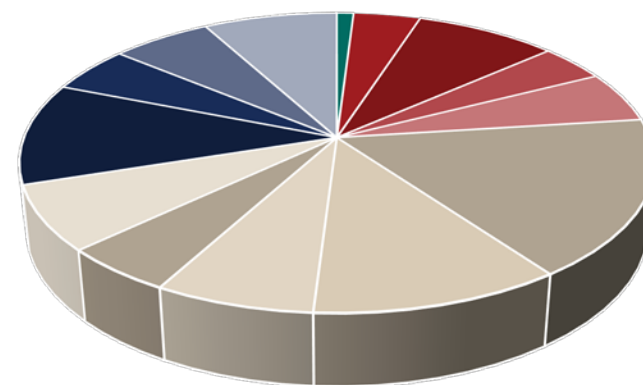
- **Establish Asset Allocation Targets:** The Mason Investment Committee is instrumental in helping our clients determine the appropriate target allocation based on their goals and objectives. Portfolios are constructed to maintain proper diversification and allocations based on long term objectives and risk tolerance parameters. Portfolio allocations are from time to time restructured based on long term strategic considerations and unique client developments. Only under very unique conditions will a portfolio be modified based on intermediate term factors (such as the current underweight to long term bonds).
- **Identify Sources of Superior Managers:** We evaluate 30 fund families managing a combined \$17.07 trillion in mutual fund assets. To obtain an accurate measure of each fund family's success we evaluate relative performance of each open fund as well as previously merged and terminated funds. We examine only each fund family's lowest cost class shares – those which do not levy 12b-1 fees. This gives a true measure of each fund family's actual track record. Our analysis has determined that seven fund families have consistently provided superior results. The best fund families are a combination of EMB focused and actively managed fund families. Our analysis has found in each case a lack of reversion to the mean across fund families but a strong reversion to the mean within each fund family. In other words, our clients' interests are best served by focusing primarily on offerings from superior fund families and within these fund families focusing on both in favor and out of favor strategies. At the same time funds from inferior fund families generally should be avoided regardless of individual fund track record.

PORTFOLIO CONSTRUCTION AND MAINTENANCE

- **Select Individual Managers (General Process):** We evaluate managers and fund families quantitatively and qualitatively and select those that we believe will be the best fit for our clients' portfolios. This allows our clients to gain access to what we believe are the most appropriate EMB and actively managed investment vehicles. Indexing does not always make sense. We help our clients to determine when and when not to use EMB funds. We help our clients determine when to use active managers, which active managers to use and the most productive way of tracking managers. We understand our portfolios better than most sophisticated investors because our process is consistent, disciplined and transparent. We are often able to access institutional share classes (lower expense ratios than retail shares) and funds not available to the general public (DFA being one example). Our clients benefit from ongoing due diligence on fund managers, using a process we believe to be unique in our industry.
- **Select Individual Managers (Additional Detail):** Within each category we select managers which fit the category and best complete the target allocation. We generally invest only in funds from superior fund families. We apply quantitative analysis including holdings-based style analysis and returns based style analysis where appropriate. We track monthly asset flows for each fund. We track changes of portfolio management. We track changes in fund fee structure. These are criteria which guide our judgment in determining which funds provide the best likelihood of success going forward. We are not aware of any other company which applies this approach geared towards constructing the best combinations of managers going forward rather than chasing performance at the individual fund level which the data clearly indicate is a suboptimal strategy.

ESTABLISH ASSET ALLOCATION TARGETS

- Establish Proper Diversification
- Consider Long Term Objectives and Risk Tolerance
- Modify Based on Long Term Strategic Considerations and Changes to Client's Goals, Objectives and Risk Tolerance
- Only Under Very Unique Circumstances Will a Portfolio be Modified Based on Intermediate Considerations
- However, the Portfolio is Rebalanced Opportunistically Based on Market Movement



Safety ■ Income ■ Growth ■ Aggressive ■

Asset Class and Allocations

Cash	1.00%	International Value	7.00%
Short-Term Fixed Income	4.00%	International Growth	5.00%
Intermediate Fixed Income	8.50%	Real Estate	7.00%
TIPS	4.00%	Small Value	11.00%
International Fixed Income	5.50%	Small Growth	5.00%
Large Value	17.00%	International Small Cap	6.00%
Large Growth	11.00%	Energy & Natural Resources	8.00%

FUND FAMILY ANALYSIS

- Evaluate Relative Performance of Open, Terminated and Merged Funds
- Rank Performance of Fund Families
- Construct Portfolios Primarily From Superior EMB and Superior Active Fund Families
- What is an EMB Fund?
 - **The label EMB (Efficient Market Based) is our term, not an industry term.** Efficient Market Based (EMB) funds are managed in a manner consistent with a belief that markets are mostly efficient. EMB includes index funds as well as other funds that overcome problems with indexing such as Dimensional Fund Advisor (DFA) funds and some active bond funds – some of these funds are often referred to as “enhanced index funds”. We will use a combination.

FUND FAMILY ANALYSIS

- **Evaluated Funds Across 30 Fund Families (\$17.07 Trillion AUM)**
 - Excluded any funds that have 12b-1 fees
- **Evaluated All Terminated, Merged, and Open Funds**
- **Identified Superior Active Fund Families**
- **Fund Family Performance Has Persisted (No Reversion to Mean at Fund Family Level)**
- **Within Each Fund Family There Has Been a Strong Reversion to the Mean**
 - Often today's winning funds are tomorrow's losing funds and vice versa

FUND FAMILY ANALYSIS

Fund Family	Average	January 1,	January 1,	January 1,	January 1,	January 1,	January 1,	January 1,	January 1,	January 1,	January 1,	January 1,	January 1,	January 1,	January 1,	January 1,	January 1,	Current	AUM	AUM
	Percentile	2017 thru	2016 thru	2015 thru	2014 thru	2013 thru	2012 thru	2011 thru	2010 thru	2009 thru	2008 thru	2007 thru	2006 thru	2005 thru	2004 thru	2003 thru	2002 thru	Number of	(Billions)	(Billions)
	Rank All	December	December	December	December	December	December	December	December	December	December	December	December	December	December	December	December	Funds	as of 12-	as of 12-
	Years	31, 2021	31, 2020	31, 2019	31, 2018	31, 2017	31, 2016	31, 2015	31, 2014	31, 2013	31, 2012	31, 2011	31, 2010	31, 2009	31, 2008	31, 2007	31, 2006	(Multiple Class Shares)*	31-21	31-20
Dodge & Cox	35.31	41.60	36.80	44.00	42.80	33.20	26.24	40.56	32.64	30.24	43.89	53.05	43.18	40.20	40.35	28.90	20.35	6	241	206
Vanguard	38.28	41.20	38.40	37.40	35.20	36.60	37.00	35.43	37.02	42.73	41.07	40.88	41.04	40.79	35.50	34.87	34.02	261	5,326	4,644
PIMCO	39.05	40.20	37.00	38.60	38.60	41.40	41.56	44.41	38.85	36.76	35.52	36.40	37.85	39.61	40.60	38.04	38.04	189	409	377
American Funds	39.54	44.80	42.60	43.20	39.20	39.40	38.18	36.93	39.34	40.72	41.83	43.03	41.53	38.44	35.92	33.21	30.28	226	2,343	2,032
T Rowe	39.89	42.80	41.80	39.60	38.80	38.60	38.23	37.91	39.22	39.24	40.03	40.48	40.03	40.03	39.73	38.85	38.04	231	851	774
MFS	40.55	39.00	39.20	37.00	39.80	42.60	41.73	39.04	40.12	39.09	37.07	38.93	40.13	41.17	39.34	42.50	42.53	175	382	325
Blackrock	42.59	42.60	41.60	40.60	41.00	41.60	42.06	42.64	44.16	45.97	45.92	43.43	43.24	42.20	39.98	39.73	42.29	151	388	328
Lord Abbett	42.62	44.00	43.40	44.00	42.60	41.20	40.00	43.00	41.20	41.82	42.48	40.61	39.00	40.32	40.98	42.45	45.87	170	194	172
Eaton Vance	42.68	43.00	42.40	39.60	39.20	41.00	40.95	42.10	48.58	48.71	47.97	46.80	45.11	39.01	40.03	41.95	39.97	81	93	83
PGIM (Prudential)	42.75	43.98	44.03	43.99	44.22	42.37	43.83	42.51	41.89	41.12	40.86	N/A	N/A	N/A	N/A	N/A	N/A	126	172	163
TIAA Cref	42.81	44.20	43.60	42.88	44.05	43.15	41.45	40.86	40.80	42.89	42.34	44.02	42.56	44.66	N/A	N/A	N/A	128	207	180
DFA	42.82	51.40	48.40	45.40	43.80	40.80	39.53	45.65	41.88	40.74	42.60	46.31	42.29	44.56	41.77	37.34	34.06	89	451	432
Hartford	42.89	45.60	44.60	42.20	44.80	42.80	40.20	41.62	41.11	40.04	42.99	43.43	40.92	41.75	43.28	39.16	42.31	196	152	134
Fidelity	42.95	44.40	44.80	44.00	44.20	42.40	42.22	42.91	42.49	42.99	45.68	44.79	44.05	42.59	43.39	40.86	40.38	507	2,640	2,144
Principal	43.14	42.20	43.00	41.80	41.60	41.40	42.40	39.20	40.60	45.00	46.48	49.30	49.73	47.32	43.21	41.67	38.67	94	163	154
Columbia	43.51	42.00	44.00	43.00	44.60	43.94	44.89	44.05	43.94	45.04	44.98	43.44	41.75	42.31	40.92	41.43	43.73	295	228	186
Janus Henderson	43.61	47.60	47.40	46.20	45.60	46.80	44.66	45.33	46.17	44.15	45.09	41.36	35.76	32.91	34.57	35.92	40.81	142	190	172
JP Morgan	43.93	44.60	45.20	44.80	44.40	43.60	43.20	43.24	43.36	43.95	44.61	44.78	41.16	42.46	42.13	43.52	43.16	202	459	394
American Century	43.98	43.20	44.40	45.20	44.80	44.00	44.80	42.00	43.37	49.52	48.15	44.50	46.56	45.21	41.06	42.72	43.41	233	154	135
Jackson National	44.67	46.80	46.20	51.70	54.60	55.80	53.40	54.20	45.30	40.87	37.27	44.47	35.67	35.87	N/A	N/A	N/A	92	246	206
Schwab	45.95	49.28	47.56	43.97	41.85	41.71	41.91	41.11	43.34	47.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	29	157	116
Goldman	46.41	47.00	47.40	47.60	47.80	46.20	43.66	44.19	46.15	46.64	49.23	52.93	51.14	48.52	45.83	44.37	42.06	291	140	114
Franklin Templeton	46.49	54.00	50.80	52.00	50.80	51.40	48.41	49.16	46.20	43.57	43.69	43.32	43.15	42.91	41.08	40.32	40.22	167	526	502
Allspring (F.K.A. Wells Fargo)	46.53	47.00	46.80	46.60	47.80	47.00	48.36	45.99	45.09	44.53	45.23	44.51	44.76	46.58	46.29	45.85	46.26	219	93	88
Invesco	46.65	50.20	48.80	49.40	48.60	47.00	46.00	46.37	46.80	47.21	46.63	46.40	45.72	43.83	44.05	42.60	44.02	279	339	325
Voya (F.K.A. ING)	46.91	46.40	46.00	44.80	43.32	42.51	42.86	43.20	45.15	49.64	49.74	50.72	51.48	51.57	49.14	N/A	N/A	135	93	88
Delaware Funds (Macquarie)	47.01	47.96	48.43	48.05	47.64	46.95	48.04	45.79	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	46	105	N/A
Harbor	47.33	48.20	47.00	46.00	48.40	48.20	47.27	47.30	48.54	47.40	46.55	46.52	46.80	42.01	43.87	44.45	47.31	40	56	58
John Hancock	48.30	48.60	50.00	48.80	49.20	47.40	44.37	45.11	44.79	43.12	43.91	47.76	45.87	45.79	48.56	49.28	52.47	128	157	137
SEI	50.29	54.03	53.64	50.20	46.55	44.82	45.94	44.56	45.09	47.57	51.43	50.90	N/A	N/A	N/A	N/A	N/A	119	114	108
Totals																		5,047	17,067	14,669

FUND FAMILY ANALYSIS

Fund Family	Average	January 1, 2017 thru	January 1, 2016 thru	January 1, 2015 thru	January 1, 2014 thru	January 1, 2013 thru	January 1, 2012 thru	January 1, 2011 thru	January 1, 2010 thru	January 1, 2009 thru	January 1, 2008 thru	January 1, 2007 thru	January 1, 2006 thru	January 1, 2005 thru	January 1, 2004 thru	January 1, 2003 thru	January 1, 2002 thru	Current	AUM	AUM	
	Percentile	2017 thru	2016 thru	2015 thru	2014 thru	2013 thru	2012 thru	2011 thru	2010 thru	2009 thru	2008 thru	2007 thru	2006 thru	2005 thru	2004 thru	2003 thru	2002 thru	Number of	(Billions)	(Billions)	
	Rank All	December	December	December	December	December	December	December	December	December	December	December	December	December	December	December	December	Funds	as of 12-	as of 12-	
	Years	31, 2021	31, 2020	31, 2019	31, 2018	31, 2017	31, 2016	31, 2015	31, 2014	31, 2013	31, 2012	31, 2011	31, 2010	31, 2009	31, 2008	31, 2007	31, 2006	(Multiple Class Shares)*	31-21	31-20	
nd Family 1	35.31	41.60	36.80	44.00	42.80	33.20	26.24	40.56	32.64	30.24	43.89	53.05	43.18	40.20	40.35	28.90	20.35	6	241	206	
nd Family 2	38.28	41.20	38.40	37.40	35.20	36.60	37.00	35.43	37.02	42.73	41.07	40.88	41.04	40.79	35.50	34.87	34.02	261	5,326	4,644	
nd Family 3	39.05	40.20	37.00	38.60	38.60	41.40	41.56	44.41	38.85	36.76	35.52	36.40	37.85	39.61	40.60	38.04	38.04	189	409	377	
nd Family 4	39.54	44.80	42.60	43.20	39.20	39.40	38.18	36.93	39.34	40.72	41.83	43.03	41.53	38.44	35.92	33.21	30.28	226	2,343	2,032	
nd Family 5	39.89	42.80	41.80	39.60	38.80	38.60	38.23	37.91	39.22	39.24	40.03	40.48	40.03	40.03	39.73	38.85	38.04	231	851	774	
nd Family 6	40.55	39.00	39.20	37.00	39.80	42.60	41.73	39.04	40.12	39.09	37.07	38.93	40.13	41.17	39.34	42.50	42.53	175	382	325	
nd Family 7	42.59	42.60	41.60	40.60	41.00	41.60	42.06	42.64	44.16	45.97	45.92	43.43	43.24	42.20	39.98	39.73	42.29	151	388	328	
nd Family 8	42.62	44.00	43.40	44.00	42.60	41.20	40.00	43.00	41.20	41.82	42.48	40.61	39.00	40.32	40.98	42.45	45.87	170	194	172	
nd Family 9	42.68	43.00	42.40	39.60	39.20	41.00	40.95	42.10	48.58	48.71	47.97	46.80	45.11	39.01	40.03	41.95	39.97	81	93	83	
nd Family 10	42.75	43.98	44.03	43.99	44.22	42.37	43.83	42.51	41.89	41.12	40.86	N/A	N/A	N/A	N/A	N/A	N/A	126	172	163	
nd Family 11	42.81	44.20	43.60	42.88	44.05	43.15	41.45	40.86	40.80	42.89	42.34	44.02	42.56	44.66	N/A	N/A	N/A	128	207	180	
nd Family 12	42.82	51.40	48.40	45.40	43.80	40.80	39.53	45.65	41.88	40.74	42.60	46.31	42.29	44.56	41.77	37.34	34.06	89	451	432	
nd Family 13	42.89	45.60	44.60	42.20	44.80	42.80	40.20	41.62	41.11	40.04	42.99	43.43	40.92	41.75	43.28	39.16	42.31	196	152	134	
nd Family 14	42.95	44.40	44.80	44.00	44.20	42.40	42.22	42.91	42.49	42.99	45.68	44.79	44.05	42.59	43.39	40.86	40.38	507	2,640	2,144	
nd Family 15	43.14	42.20	43.00	41.80	41.60	41.40	42.40	39.20	40.60	45.00	46.48	49.30	49.73	47.32	43.21	41.67	38.67	94	163	154	
nd Family 16	43.51	42.00	44.00	43.00	44.60	43.94	44.89	44.05	43.94	45.04	44.98	43.44	41.75	42.31	40.92	41.43	43.73	295	228	186	
nd Family 17	43.61	47.60	47.40	46.20	45.60	46.80	44.66	45.33	46.17	44.15	45.09	41.36	35.76	32.91	34.57	35.92	40.81	142	190	172	
nd Family 18	43.93	44.60	45.20	44.80	44.40	43.60	43.20	43.24	43.36	43.95	44.61	44.78	41.16	42.46	42.13	43.52	43.16	202	459	394	
nd Family 19	43.98	43.20	44.40	45.20	44.80	44.00	44.80	42.00	43.37	49.52	48.15	44.50	46.56	45.21	41.06	42.72	43.41	233	154	135	
nd Family 20	44.67	46.80	46.20	51.70	54.60	55.80	53.40	54.20	45.30	40.87	37.27	44.47	35.67	35.87	N/A	N/A	N/A	92	246	206	
nd Family 21	45.95	49.28	47.56	43.97	41.85	41.71	41.91	41.11	43.34	47.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	29	157	116	
nd Family 22	46.41	47.00	47.40	47.60	47.80	46.20	43.66	44.19	46.15	46.64	49.23	52.93	51.14	48.52	45.83	44.37	42.06	291	140	114	
nd Family 23	46.49	54.00	50.80	52.00	50.80	51.40	48.41	49.16	46.20	43.57	43.69	43.32	43.15	42.91	41.08	40.32	40.22	167	526	502	
nd Family 24	46.53	47.00	46.80	46.60	47.80	47.00	48.36	45.99	45.09	44.53	45.23	44.51	44.76	46.58	46.29	45.85	46.26	219	93	88	
nd Family 25	46.65	50.20	48.80	49.40	48.60	47.00	46.00	46.37	46.80	47.21	46.63	46.40	45.72	43.83	44.05	42.60	44.02	279	339	325	
nd Family 26	46.91	46.40	46.00	44.80	43.32	42.51	42.86	43.20	45.15	49.64	49.74	50.72	51.48	51.57	49.14	N/A	N/A	135	93	88	
nd Family 27	47.01	47.96	48.43	48.05	47.64	46.95	48.04	45.79	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	46	105	N/A	
nd Family 28	47.33	48.20	47.00	46.00	48.40	48.20	47.27	47.30	48.54	47.40	46.55	46.52	46.80	42.01	43.87	44.45	47.31	40	56	58	
nd Family 29	48.30	48.60	50.00	48.80	49.20	47.40	44.37	45.11	44.79	43.12	43.91	47.76	45.87	45.79	48.56	49.28	52.47	128	157	137	
nd Family 30	50.29	54.03	53.64	50.20	46.55	44.82	45.94	44.56	45.09	47.57	51.43	50.90	N/A	N/A	N/A	N/A	N/A	119	114	108	
Totals																			5,047	17,067	14,669

AMERICAN FUNDS

INTRA-FUND FAMILY ANALYSIS

Fund Name	2012-2016	2017-2021	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %
			Rank Cat 2021	Rank Cat 2020	Rank Cat 2019	Rank Cat 2018	Rank Cat 2017	Rank Cat 2016	Rank Cat 2015	Rank Cat 2014	Rank Cat 2013	Rank Cat 2012
American Funds New Economy R5	19.8%	45.0%	66.0%	34.0%	83.0%	23.0%	19.0%	47.0%	23.0%	25.0%	1.0%	3.0%
American Funds Growth Fund of Amer R5	30.2%	58.2%	64.0%	35.0%	80.0%	54.0%	58.0%	10.0%	34.0%	56.0%	45.0%	6.0%
American Funds AMCAP R5	32.4%	68.4%	39.0%	85.0%	89.0%	46.0%	83.0%	7.0%	73.0%	26.0%	19.0%	37.0%
American Funds Fundamental Invs R5	32.6%	56.6%	84.0%	59.0%	68.0%	59.0%	13.0%	18.0%	5.0%	76.0%	49.0%	15.0%
American Funds SMALLCAP World R5	33.0%	34.4%	67.0%	34.0%	24.0%	13.0%	34.0%	62.0%	11.0%	23.0%	51.0%	18.0%
American Funds New Perspective R5	33.8%	39.4%	29.0%	34.0%	51.0%	31.0%	52.0%	52.0%	16.0%	44.0%	44.0%	13.0%
American Funds New World R5	33.8%	26.0%	27.0%	21.0%	9.0%	14.0%	59.0%	74.0%	4.0%	52.0%	9.0%	30.0%
American Funds Mortgage R5	34.6%	40.0%	2.0%	25.0%	86.0%	30.0%	57.0%	3.0%	1.0%	21.0%	54.0%	94.0%
American Funds Invmt Co of Amer R5	35.0%	67.6%	68.0%	61.0%	87.0%	58.0%	64.0%	7.0%	55.0%	39.0%	37.0%	37.0%
American Funds Europacific Growth R5	36.8%	55.2%	80.0%	33.0%	59.0%	59.0%	45.0%	21.0%	67.0%	28.0%	41.0%	27.0%
American Funds US Government Sec R5	38.8%	27.6%	5.0%	2.0%	72.0%	22.0%	37.0%	45.0%	4.0%	32.0%	57.0%	56.0%
American Funds Bond Fund of Amer R5	42.0%	29.2%	13.0%	1.0%	52.0%	23.0%	57.0%	47.0%	22.0%	33.0%	51.0%	57.0%
American Funds Washington Mutual R5	42.6%	43.0%	21.0%	90.0%	82.0%	12.0%	10.0%	59.0%	8.0%	34.0%	39.0%	73.0%
American Funds Capital World Gr&Inc R5	43.4%	49.2%	79.0%	35.0%	52.0%	57.0%	23.0%	48.0%	65.0%	42.0%	49.0%	13.0%
American Funds Interm Bd Fd of Amer R5	45.6%	42.8%	63.0%	1.0%	41.0%	38.0%	71.0%	67.0%	4.0%	8.0%	90.0%	59.0%
American Funds Capital World Bond R5	45.8%	39.0%	51.0%	25.0%	28.0%	47.0%	44.0%	59.0%	42.0%	43.0%	46.0%	39.0%
American Funds Intl Gr and Inc R5	46.6%	38.8%	55.0%	55.0%	5.0%	45.0%	34.0%	29.0%	91.0%	20.0%	62.0%	31.0%
American Funds American Mutual R5	50.2%	41.2%	59.0%	32.0%	83.0%	4.0%	28.0%	49.0%	33.0%	15.0%	79.0%	75.0%
American Funds American High-Inc R5	50.4%	31.0%	5.0%	19.0%	66.0%	25.0%	40.0%	9.0%	88.0%	63.0%	46.0%	46.0%
American Funds ST Bd Fd of Amer R5	66.4%	62.4%	65.0%	50.0%	91.0%	26.0%	80.0%	78.0%	24.0%	66.0%	72.0%	92.0%



INTRA-FUND FAMILY ANALYSIS

Fund Name	2012-2016	2017-2021	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %	Annual Ret %
			Rank Cat 2021	Rank Cat 2020	Rank Cat 2019	Rank Cat 2018	Rank Cat 2017	Rank Cat 2016	Rank Cat 2015	Rank Cat 2014	Rank Cat 2013	Rank Cat 2012
Fund 1	19.8%	45.0%	66.0%	34.0%	83.0%	23.0%	19.0%	47.0%	23.0%	25.0%	1.0%	3.0%
Fund 2	30.2%	58.2%	64.0%	35.0%	80.0%	54.0%	58.0%	10.0%	34.0%	56.0%	45.0%	6.0%
Fund 3	32.4%	68.4%	39.0%	85.0%	89.0%	46.0%	83.0%	7.0%	73.0%	26.0%	19.0%	37.0%
Fund 4	32.6%	56.6%	84.0%	59.0%	68.0%	59.0%	13.0%	18.0%	5.0%	76.0%	49.0%	15.0%
Fund 5	33.0%	34.4%	67.0%	34.0%	24.0%	13.0%	34.0%	62.0%	11.0%	23.0%	51.0%	18.0%
Fund 6	33.8%	39.4%	29.0%	34.0%	51.0%	31.0%	52.0%	52.0%	16.0%	44.0%	44.0%	13.0%
Fund 7	33.8%	26.0%	27.0%	21.0%	9.0%	14.0%	59.0%	74.0%	4.0%	52.0%	9.0%	30.0%
Fund 8	34.6%	40.0%	2.0%	25.0%	86.0%	30.0%	57.0%	3.0%	1.0%	21.0%	54.0%	94.0%
Fund 9	35.0%	67.6%	68.0%	61.0%	87.0%	58.0%	64.0%	7.0%	55.0%	39.0%	37.0%	37.0%
Fund 10	36.8%	55.2%	80.0%	33.0%	59.0%	59.0%	45.0%	21.0%	67.0%	28.0%	41.0%	27.0%
Fund 11	38.8%	27.6%	5.0%	2.0%	72.0%	22.0%	37.0%	45.0%	4.0%	32.0%	57.0%	56.0%
Fund 12	42.0%	29.2%	13.0%	1.0%	52.0%	23.0%	57.0%	47.0%	22.0%	33.0%	51.0%	57.0%
Fund 13	42.6%	43.0%	21.0%	90.0%	82.0%	12.0%	10.0%	59.0%	8.0%	34.0%	39.0%	73.0%
Fund 14	43.4%	49.2%	79.0%	35.0%	52.0%	57.0%	23.0%	48.0%	65.0%	42.0%	49.0%	13.0%
Fund 15	45.6%	42.8%	63.0%	1.0%	41.0%	38.0%	71.0%	67.0%	4.0%	8.0%	90.0%	59.0%
Fund 16	45.8%	39.0%	51.0%	25.0%	28.0%	47.0%	44.0%	59.0%	42.0%	43.0%	46.0%	39.0%
Fund 17	46.6%	38.8%	55.0%	55.0%	5.0%	45.0%	34.0%	29.0%	91.0%	20.0%	62.0%	31.0%
Fund 18	50.2%	41.2%	59.0%	32.0%	83.0%	4.0%	28.0%	49.0%	33.0%	15.0%	79.0%	75.0%
Fund 19	50.4%	31.0%	5.0%	19.0%	66.0%	25.0%	40.0%	9.0%	88.0%	63.0%	46.0%	46.0%
Fund 20	66.4%	62.4%	65.0%	50.0%	91.0%	26.0%	80.0%	78.0%	24.0%	66.0%	72.0%	92.0%

ACTIVE FUND FAMILIES

INTRA-FUND FAMILY EVALUATION

Of All PIMCO Funds		Of All Funds	
Decile Ranking First Period	Decile Ranking Second Period	Percent Ranking First 5 Years	Percent Ranking Next 5 Years
1	5	15.13%	38.13%
2	3	27.95%	32.42%
3	1	33.08%	31.48%
4	2	36.38%	31.87%
5	4	39.27%	36.73%
6	7	44.09%	44.44%
7	9	47.56%	46.80%
8	10	51.36%	48.16%
9	8	55.25%	44.71%
10	6	59.91%	42.53%
Avg. Top 5 Deciles		30.31%	34.17%
Avg. Bottom 5 Deciles		51.71%	45.30%
Total Number of Funds		109	

Of All American Funds		Of All Funds	
Decile Ranking First Period	Decile Ranking Second Period	Percent Ranking First 5 Years	Percent Ranking Next 5 Years
1	8	24.43%	45.71%
2	10	32.07%	57.10%
3	6	33.34%	43.11%
4	3	34.27%	39.03%
5	9	36.20%	52.57%
6	5	43.86%	42.20%
7	1.5	46.00%	37.77%
8	1.5	46.00%	37.77%
9	4	48.31%	41.89%
10	7	55.91%	43.49%
Avg. Top 5 Deciles		31.99%	47.47%
Avg. Bottom 5 Deciles		47.89%	40.89%
Total Number of Funds		67	

INTRA-FUND FAMILY EVALUATION

Of All Vanguard Funds		Of All Funds	
Decile Ranking First Period	Decile Ranking Second Period	Percent Ranking First 5 Years	Percent Ranking Next 5 Years
1	3	19.37%	34.86%
2	4	26.13%	37.78%
3	1	29.65%	34.58%
4	2	32.73%	37.98%
5	6	36.12%	36.28%
6	8	38.67%	37.05%
7	5	42.10%	41.61%
8	9	45.76%	44.52%
9	10	50.47%	50.13%
10	7	57.08%	48.41%
Avg. Top 5 Deciles		28.75%	36.30%
Avg. Bottom 5 Deciles		46.97%	44.40%
Total Number of Funds		205	

Top and Bottom Deciles

INTRA-FUND FAMILY ANALYSIS

		2002-2007	2008-2013	2006-2010	2011-2015	2007-2011	2012-2017	2009-2013	2014-2018	2010-2014	2015-2019	2011-2015	2016-2020	2012-2016	2017-2021
		1st 6 Years	2nd 5 10/12 years*	1st 5 years	2nd 5 years	1st 5 years	2nd 6 Years	1st 5 years	2nd 5 Years	1st 5 years	2nd 5 Years	1st 5 years	2nd 5 Years	1st 5 years	2nd 5 Years
Vanguard	Top	27.00%	41.00%	35.52%	36.51%	34.30%	37.13%	33.37%	32.81%	29.17%	34.18%	27.64%	33.96%	28.75%	36.30%
Vanguard	Bottom	42.00%	40.00%	50.02%	35.51%	48.97%	36.89%	52.64%	37.30%	46.86%	39.14%	45.24%	40.12%	46.97%	44.40%
Vanguard	Count	62	62	78	78	160	160	167		167		189		205	
DFA	Top	28.00%	40.00%	33.42%	42.16%	36.83%	38.51%	29.12%	43.39%	30.79%	40.21%	34.20%	43.34%	31.40%	45.27%
DFA	Bottom	50.00%	39.00%	48.63%	43.13%	54.27%	38.08%	50.88%	44.21%	53.00%	50.33%	55.82%	53.45%	51.38%	55.77%
DFA	Count	29	29	38	38	46	46	61		60		58		58	
PIMCO	Top	22.00%	37.00%	29.36%	40.51%	24.07%	38.43%	23.56%	35.73%	25.38%	38.41%	36.02%	34.77%	30.31%	34.17%
PIMCO	Bottom	49.00%	40.00%	43.20%	37.25%	43.52%	34.72%	48.09%	38.34%	50.46%	40.98%	46.92%	37.96%	51.71%	45.30%
PIMCO	Count	24	24	34	34	46	46	74		90		97		108	
American	Top	23.00%	43.00%	35.04%	37.33%	33.22%	38.39%	35.13%	38.67%	35.51%	38.55%	35.73%	41.49%	31.99%	47.47%
American	Bottom	47.00%	36.00%	45.24%	39.47%	50.03%	40.58%	51.55%	40.15%	50.59%	45.95%	44.39%	42.98%	47.89%	40.89%
American	Count	20	20	20	20	17	17	43		43		65		67	
T. Rowe	Top	22.00%	37.00%	33.74%	34.07%	33.65%	37.50%	30.62%	36.26%	30.62%	39.21%	28.72%	41.13%	29.40%	44.15%
T. Rowe	Bottom	49.00%	40.00%	43.92%	40.29%	45.83%	39.87%	49.81%	41.67%	48.95%	42.35%	46.66%	46.06%	48.35%	46.32%
T. Rowe	Count	71	71	74	74	81	81	79		79		80		85	
MFS	Top			31.38%	40.20%			30.79%	39.58%	32.16%	37.80%	29.82%	35.86%	34.33%	36.58%
MFS	Bottom			44.74%	39.59%			45.37%	41.58%	45.81%	36.64%	48.99%	40.73%	50.86%	41.21%
MFS	Count			35	35			69		73		79		83	
Summary	Top	24.40%	39.60%	33.08%	38.46%	32.41%	37.99%	30.43%	37.74%	30.60%	38.06%	32.02%	38.43%	31.03%	40.66%
	Bottom	47.40%	39.00%	45.96%	39.21%	48.52%	38.03%	49.72%	40.54%	49.28%	42.57%	48.00%	43.55%	49.53%	45.65%
	Difference	-23.00%	0.60%	-12.88%	-0.74%	-16.11%	-0.03%	-19.29%	-2.80%	-18.67%	-4.51%	-15.98%	-5.12%	-18.50%	-4.99%
	Reversion towards Mean		-23.60%		-12.14%		-16.08%		-16.49%		-14.17%		-10.86%		-13.51%

*Vanguard and DFA were 5 7/12 years

INDIVIDUAL MANAGER SELECTION

- Evaluate Funds to Determine Those Best Designed to Implement Target Portfolios
- Conduct Holdings-Based Style Analysis
- Conduct Returns-Based Style Analysis Where Appropriate
- Evaluate Cost Structure

ON-GOING MONITORING OF FUNDS

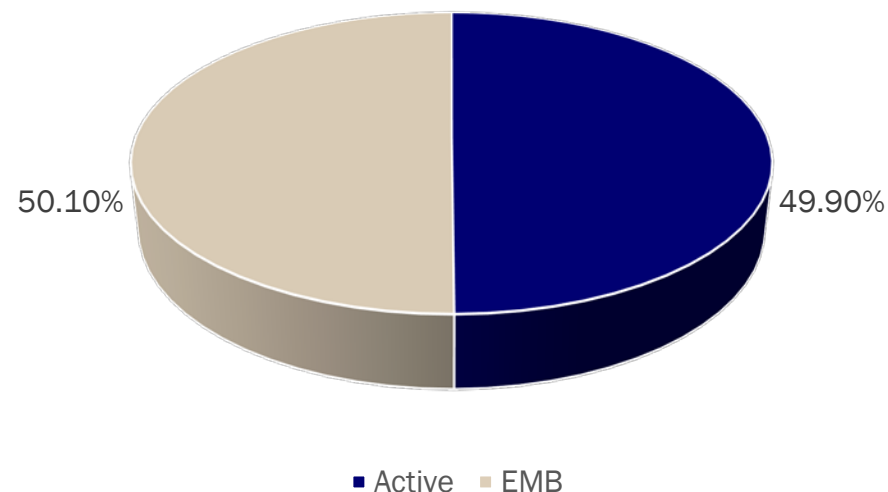
- **Fund Family Level: Update Rolling Five Year Returns on Fund Family Analysis**
 - Measure if approved fund families continue to outperform peer groups
- **Fund level: Update Quantitative and Qualitative Analysis of the Funds Within Each of the Approved Fund Families**
 - Holdings based analysis
 - Not performance based
 - Evaluate Fund Flows
 - Evaluate Transitions of Fund's Portfolio Manager
- **Fund Level: Review of Funds Within the Approved Families Confirming Best Asset Class Coverage**
 - Evaluate styles, expense ratios, asset class coverage, new funds, and share classes created within the approved fund families
- **Other: Re-evaluate Funds Chosen Outside the Approved Fund Families**
 - Example: iShares EDGE MSCI USA Value Factor ETF

ACTIVE VS. EMB

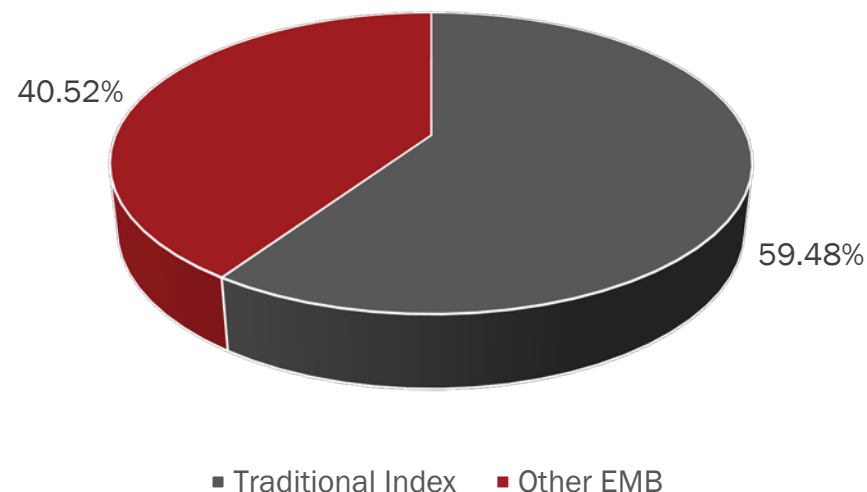
- Active EMB Breakdown is the Result of Bottom-up Portfolio Construction
- The Chart Shows a Typical Breakdown of the EMB Component Between Traditional Index Funds and Other EMB

MIMS D Portfolio Analysis

	Number of Funds	Percent of Portfolio
Active	17	49.90%
EMB	15	50.10%

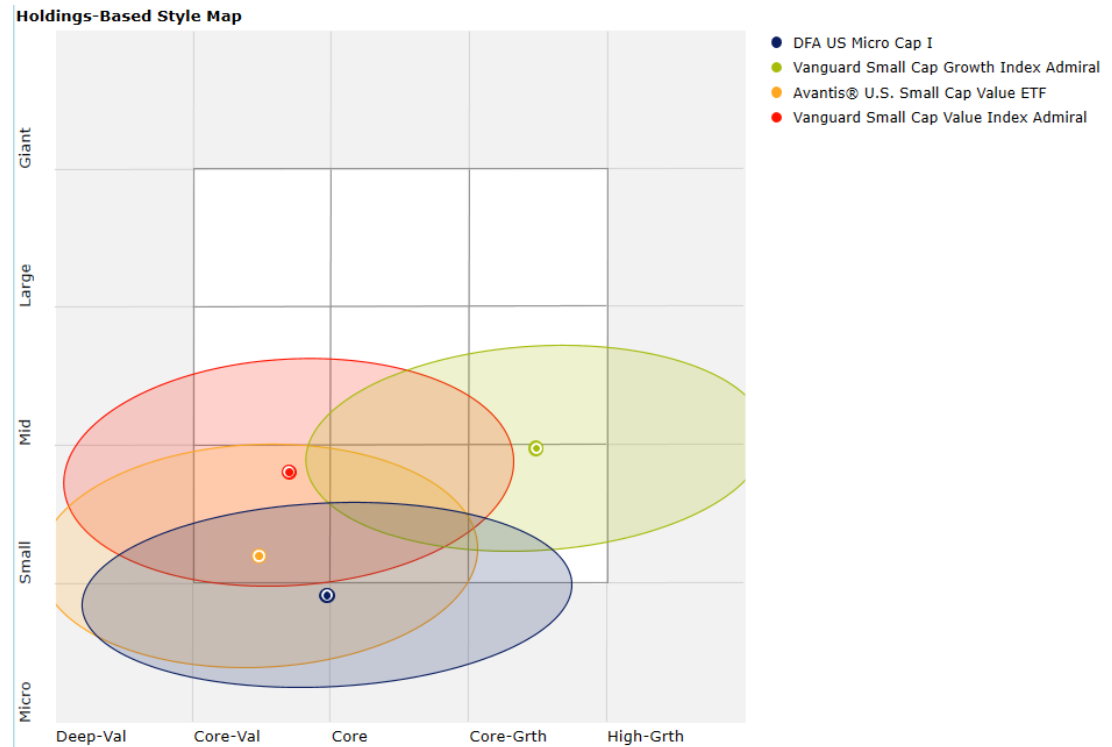


EMB Breakdown	Percent of EMB	Percent of Portfolio
Index Funds	59.48%	29.80%
Other EMB	40.52%	20.30%



INDIVIDUAL MANAGER SELECTION

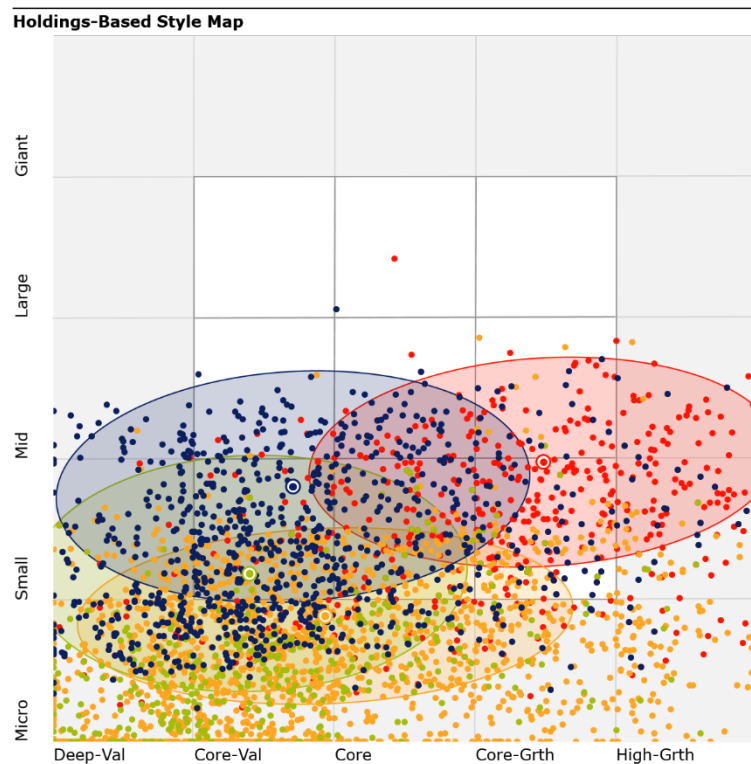
- Vanguard is a Superior EMB Fund Family
- Holdings Analysis Guides EMB and Active Manager Fund Selection
- Vanguard does not provide best access to smallest companies so other funds provide this exposure
- Smallest Companies Have Provided Superior Returns



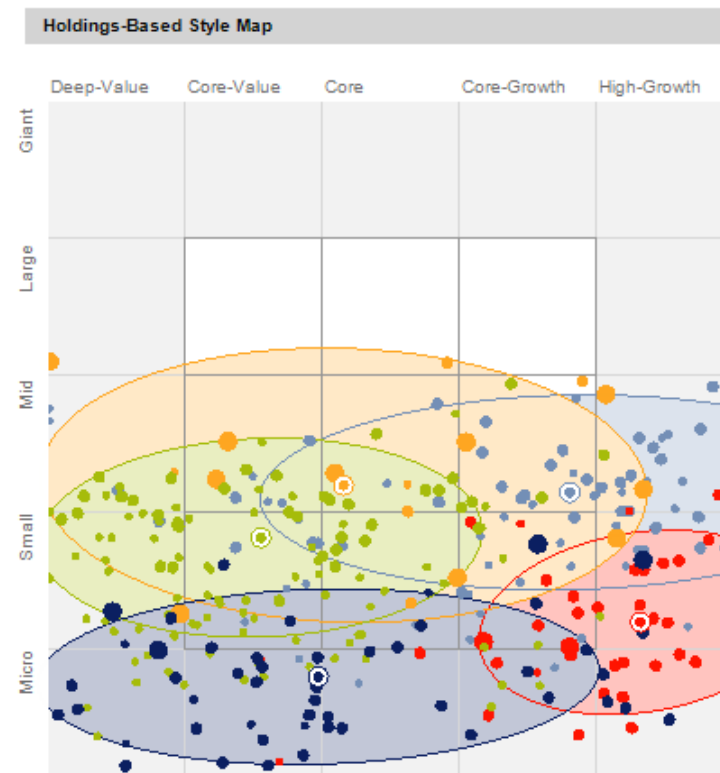
INDIVIDUAL MANAGER SELECTION

- Charts plot each manager's holdings
- EMB = more targeted and diversified exposure

4 EMB Managers



5 Active Managers



ATTRIBUTES OF BEST ACTIVE FUND FAMILIES

- Strong Corporate Culture
- Focus on Long Term Fundamentals
- Appropriate Analytical Talent*
- Minimal Termination/Merger of Funds
- Competitive Fee Structure
- Other Intangibles

*For example, the next slide shows T. Rowe Price equity analyst team

As of 31 March 2022

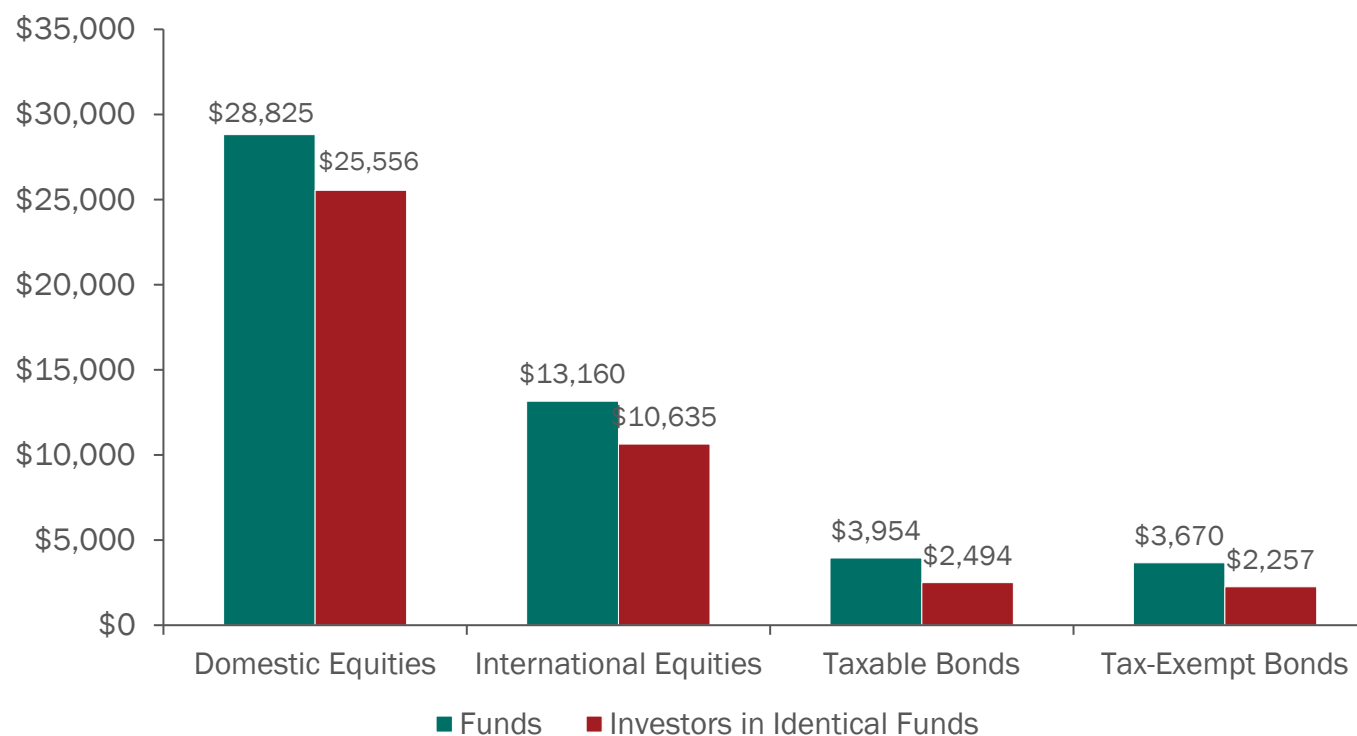
BAL Baltimore DC Washington DC HKG Hong Kong LON London SFO San Francisco SHA Shanghai SGP Singapore SYD Sydney TOK Tokyo

HEALTH CARE		INDUSTRIALS		FINANCIAL SERVICES		CONSUMER/RETAIL		NATURAL RESOURCES		TECHNOLOGY		Vishnu Gopal India & ASEAN Small-Cap		LON
Ziad Bakri, M.D., CFA ^{1,3}	DC	Jason Adams ^{1,2}	BAL	Matt Snowling, CFA ^{1,2}	BAL	Vivian Si ^{1,2}	BAL	Shinwoo Kim ^{1,2}	BAL	Ken Allen ^{1,2}	BAL	Joseph Hughes	India & ASEAN Small-Cap	LON
Sector Team Leader		U.S. Aerospace and Defense		Capital Markets		Retail		Majors/U.S. E&P		U.S. Hardware/Software		Jacob Kann, CFA	Europe Small-Cap	BAL
Zach Baca, CFA	BAL	Dinesh Aravindhan	BAL	Elias Chrysostomou, CFA	LON	Paulina Amieva	BAL	Sheena Barbosa, CFA	HKG	Alan Tu, CFA ^{1,2}	SFO		Global	
Biotech		Flow, Distr., HVAC & Waste		European Banks		Latin America Generalist		Asia Ex-Japan Utilities/Infra.		U.S. Software				
Anne Daub	BAL	Andrew Chang	SGP	Nina Gupta, CFA	SFO	Jon Casper	BAL	Jon Hussey, CFA	BAL	Stephanie Beebe	BAL	Johannes Loeffstrand ¹	Europe Small-Cap	LON
Biotech		Japanese Industrials		Financials		U.S. Consumer		U.S. Agriculture		Technology		EMEA		
Melissa Gallagher, Ph.D.	LON	Joel Grant, CFA	DC	Takanori Kobayashi	TOK	Li Geng	SGP	Vineet Khanna	BAL	Sam Johnson, CFA	BAL	Ryan Martyn	Australia Consumer, Industrials	SYD
OUS Pharma		European Industrials		Japan Financials		Asia Ex-Japan		Utilities		SMID Tech				
John Hall, Ph.D.	BAL	Gianluca Guicciardi, CFA	LON	Karim Laib, CFA	BAL	Michael Jacobs	TOK	Priyal Maniar, CFA	BAL	Ross MacMillan	BAL	Aaron Mazur	& Materials	SYD
U.S. SMID Biotech		Capital Goods		Capital Markets		SMID Japan/Consumer		E&P, Coatings, & Midstream		Software				
Amanda Ho	BAL	Dennis Hou	HKG	Gregory Locraft ¹	DC	& Services		John Qian ¹	BAL	Dom Rizzo	LON	Sebastian Murphy	Australia Media/Consumer	
U.S. SMID Healthcare Services		Greater China Auto Parts		U.S. P&C Insurance		Tony Ji	SGP	Metals & Mining		Europe Semi./Software		Discretionary		
Kate Jackson Hobbs, CFA	SFO	Jason Leblang	BAL	Jihong Min ¹	SGP	China Consumer Staples		Thomas Sheldermine	SYD	Frank Shi	HKG	Frontier Generalist		LON
Life Sciences		U.S. Aerospace and Defense		Asia Ex-Japan Financials		Josepha Kaufman	BAL	Australian Energy, Metals & Mining		Asia Ex-Japan Technology,				
Jeffrey Holford, Ph.D., ACA	BAL	Simon Pawson, CFA	LON	Teddy Oaks	BAL	Retail		John Sherman	BAL	Industrial and Infrastructure		Seun Oyegunle, CFA ¹	Europe Small-Cap	LON
Pharma		European Transport and		U.S. Banks		Jodi Love	BAL	European Chemicals/Indus.		Tony Wang	DC	EMEA		
Rachel Jonas	BAL	Logistics		Nicholas Vidale	SYD	Branded Apparel		Forest Shultz	SGP	U.S. Semiconductor		Djalma Rezende	Latin America	
U.S. Med Tech		Melanie Rizzo, CFA	BAL	Australia Financials		Sebastian Schrott ¹	LON	Asia Materials and Resources		Chris Wu	SYD			
Jill Jortner	BAL	U.S. Trucking/Machinery	BAL	Zenon Voyiatzis	LON	European Luxury/Retail		Cyprian Yonge	LON	IT, Telcos & Serv. & Gaming		Andy Peters	U.S. Value	BAL
Healthcare Services		Dhiren Shah, CFA	BAL	Europe Insur./Financials		Steven Strycula	BAL	European Chemicals						
Bin Shen, CFA	LON	Transports & Parcel				U.S. Large-Cap Consumer				MEDIA/TELECOM		Todd Reese, CFA	OUS	BAL
Euro. Healthcare Services & Medtech		Rupinder Vig	LON			Staples				Jim Stillwagon ^{1,2}	BAL			
Kim Tracey	SYD	Capital Goods								U.S. Advising/Media		Philip Richards, CFA	Global	LON
Australia Healthcare/REITs		Yiqiang Zhao	HKG							Bill Bai	HKG			
		China Industrials		Sector Team Leader		Charlene Wong, CFA	BAL	Jon Friar ^{1,2}	BAL	Asia Ex-Japan Internet		Johnny Rowles	OUS	LON
				Jai Kapadia ^{1,2}	HKG	Lodging, Gaming, Cruise Lines		Shaun Currie, CFA	BAL	Veselin Dimitrov, CFA	LON			
				Asia Ex-Japan Real Estate		Antonio Zanella, CFA	LON	U.S. Business Services		Europe Media Advertising & Investment Companies		Sin Dee Tan, CFA	Europe Small-Cap	LON
				Gregory Korondi, CFA	BAL	Beverages and Infrastructure		Maria Muller, CA	LON	Chris Graff	SFO	Chris Vost, CFA	Global Impact	LON
				Industrial, Retail & Data Centers				Dante Pearson	BAL	Aden Lau	SGP	Verena Wachnitz, CFA ¹	Latin America	LON
				Preeta Ragavan, CFA	BAL			Exchanges/Data Services		Asia Ex-Japan Telecom/Fin.		Dai Wang	Global	SHA
				U.S. Real Estate				Alison Tien	BAL	Media/Telcom				
				Pavel Vedrov	LON			U.S. Business Services		Verena Wachnitz, CFA ¹	LON			
				Europe Real Estate				Ari Weisband, CFA	BAL	Daniel Shear, CFA	BAL	Hiroshi Watanabe, CFA ¹	Japan SMID	TOK
								U.S. Business Services		Media/Telcom		Marta Yago	Global Value	LON

T. Rowe Price Associates, Inc. and its investment advisory affiliates, excluding T. Rowe Price Investment Management, Inc., a separate U.S. investment advisor.

TEN YEARS ENDED 12/31/2021

DETRIMENTS OF MARKET TIMING



Ten Year Return on \$10K Investment Through 12/31/21	Domestic Equities	International Equities	Taxable Bonds	Tax-Exempt Bonds
Funds	\$28,825.46	\$13,159.55	\$3,954.43	\$3,669.77
Investors in Identical Funds	\$25,556.06	\$10,635.35	\$2,494.01	\$2,256.77
Difference (Net Detriment of Timing)	-\$3,269.39	-\$2,524.20	-\$1,460.42	-\$1,413.00

CONCLUSION

- **Avoid Timing Strategies (Hedge Funds/Tactical Tilts)**
- **Harness the Market to Achieve Your Goals**
- **Implement Appropriate Long-Term Strategy**
- **Utilize Superior EMB Funds**
- **Utilize Superior Active Funds**



WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

AGENDA

- **Market Size and Opportunity Set**
- **Global Diversification at Work**
- **Recent Performance**
- **Current Valuations**
- **Previous Valuations and Subsequent Performance**

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

WHAT CONSTITUTES “THE STOCK MARKET”?

- Many indices we see quoted online or in news coverage represent only a fraction of the opportunity set available to investors.
- Notable large companies outside the US: Nestle, Toyota, Shell, Novartis, Tencent, Samsung, Alibaba
- D Portfolio has international equity exposure of 21.40%

Index	Number of Holdings	Market Capitalization (Millions)
Dow Jones Industrial Average	30	\$11,347,624.63
NASDAQ Composite	3,648	\$24,391,020.65
S&P 500 Index	505	\$39,843,094.50
Russell 3000 Index	3,068	\$47,474,904.22
MSCI World IMI (US + Developed)	6,096	\$70,823,983.94
MSCI ACWI IMI (US + Developed + Emerging Markets)	9,306	\$82,809,205.02

Source: Avantis Investors, data from Bloomberg. Market Capitalization and International Equity Exposure data as of December 31, 2021

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

TOP 20 HOLDINGS - MSCI WORLD EX-US INDEX

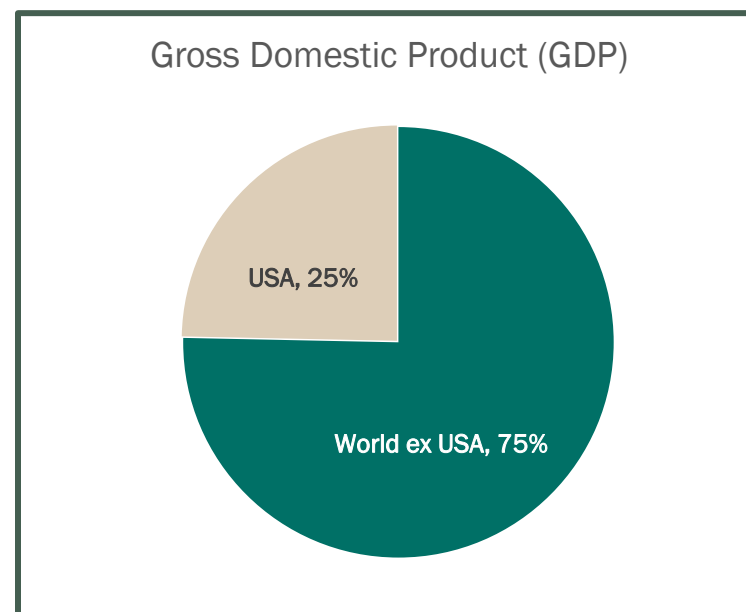
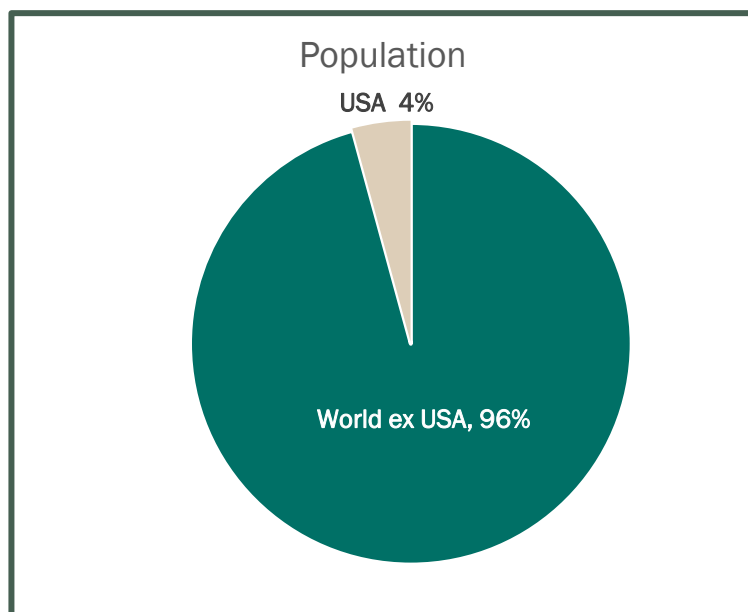
Name	MSCI Market Cap (Billion)	MSCI World Ex US Index Weight (%)	HQ Country
Nestle SA	348.19	1.99	Switzerland
Roche Holding AG	267.02	1.50	Switzerland
ASML Holding NV	263.05	1.49	Netherlands
Shell PLC	191.94	1.11	United Kingdom
AstraZeneca PLC	191.03	1.08	United Kingdom
LVMH Moet Hennessy Louis Vuitton SE	191.94	1.08	France
Novartis AG	184.86	1.05	Switzerland
Novo Nordisk A/S	176.81	1.02	Denmark
Toyota Motor Corp	178.19	1.01	Japan
BHP Group Ltd	165.88	0.95	Australia
Royal Bank of Canada	157.54	0.89	Canada
Toronto-Dominion Bank/The	144.63	0.82	Canada
HSBC Holdings PLC	131.73	0.75	United Kingdom
Commonwealth Bank of Australia	129.65	0.74	Australia
Sony Group Corp	125.79	0.73	Japan
TotalEnergies SE	125.58	0.71	France
AIA Group Ltd	116.01	0.69	Hong Kong (SAR)
SAP SE	118.06	0.67	Germany
Sanofi	117.60	0.67	France
Unilever PLC	114.74	0.65	United Kingdom

Constituent data as of 3/17/2022

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

U.S. AND THE REST OF THE WORLD

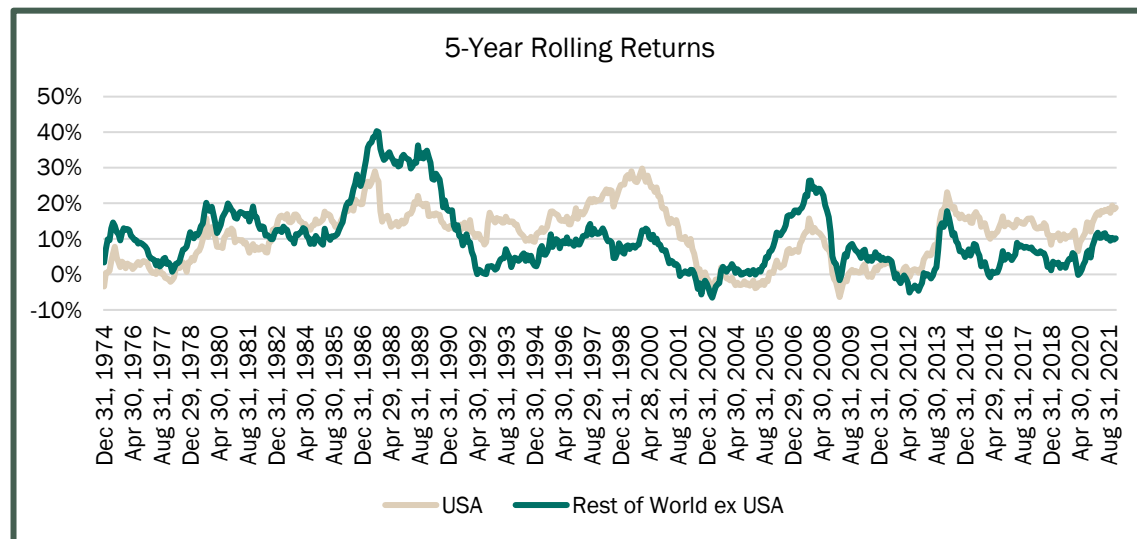
- Countries outside the US make up 82% of listed companies and 43% of listed market capitalization. Beyond that, 96% of the world's population sits outside the U.S., and 75% of GDP.



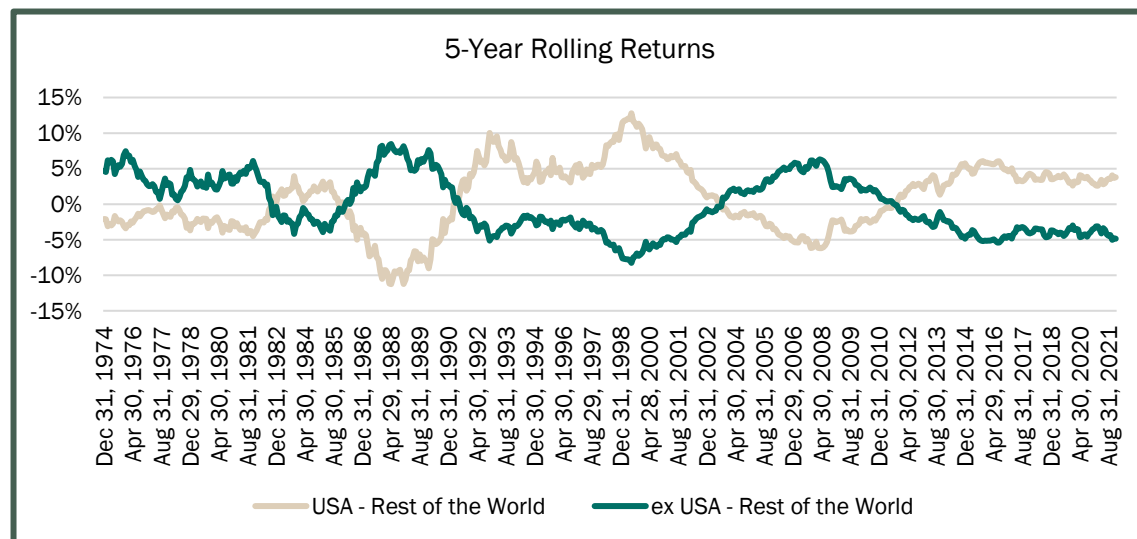
Sources: Avantis Investors, data from World Bank for population and GDP (2020), and MSCI for share of listed companies and market cap (December 31, 2021).

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

GLOBAL DIVERSIFICATION AT WORK



- The top chart shows absolute rolling 5-year returns, while the bottom chart shows the difference in rolling 5-year returns (US – Rest of World) vs (Rest of World – US).



- In the bottom chart, you can observe long periods of times where U.S. beats the rest of the world, and vice versa.

Source: Avantis Investors, returns in USD from MSCI. USA is MSCI USA Index. World ex USA is MSCI World ex USA Index. Five-year periods ending December 31, 1974 – December 31, 2021.

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

U.S. PERFORMANCE HAS BEEN STRONG RECENTLY

- Over the last 10 calendar years, U.S. stocks have significantly outpaced non-U.S. markets.



Source: Avantis Investors, returns in USD from MSCI. USA is MSCI USA Index. World ex USA is MSCI ACWI ex USA Index. December 31, 2011 – December 31, 2021.

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

PERFORMANCE OF U.S. VS. WORLD EX U.S.

- Over the last 10 years, the U.S. outperformed international dramatically, affecting the overall history. If we roll the clock back 10 years, international was outperforming the U.S.

USA	World ex USA	Difference
Current: Jan 1970 – Dec 2021		
10.81%	9.38%	1.43%

As of 5 Years Ago: Jan 1970 - Dec 2016		
10.00%	9.30%	0.70%

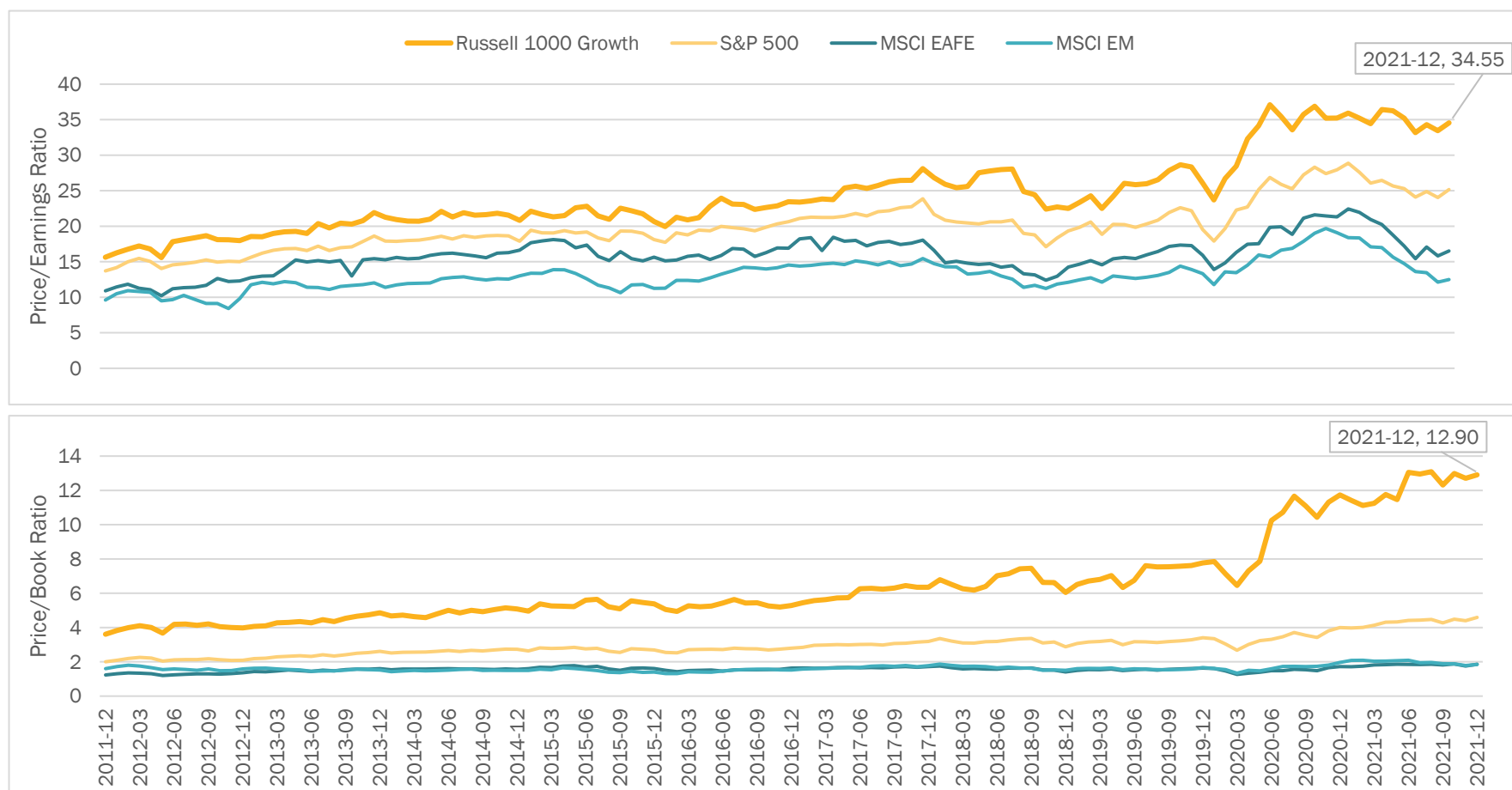
As of 10 Years Ago: Jan 1970 - Dec 2011		
9.46%	9.62%	-0.16%

Source: Avantis Investors, returns in USD from MSCI. USA is MSCI USA Index. World ex USA is MSCI World ex USA Index

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

CURRENT VALUATIONS ACROSS REGIONS

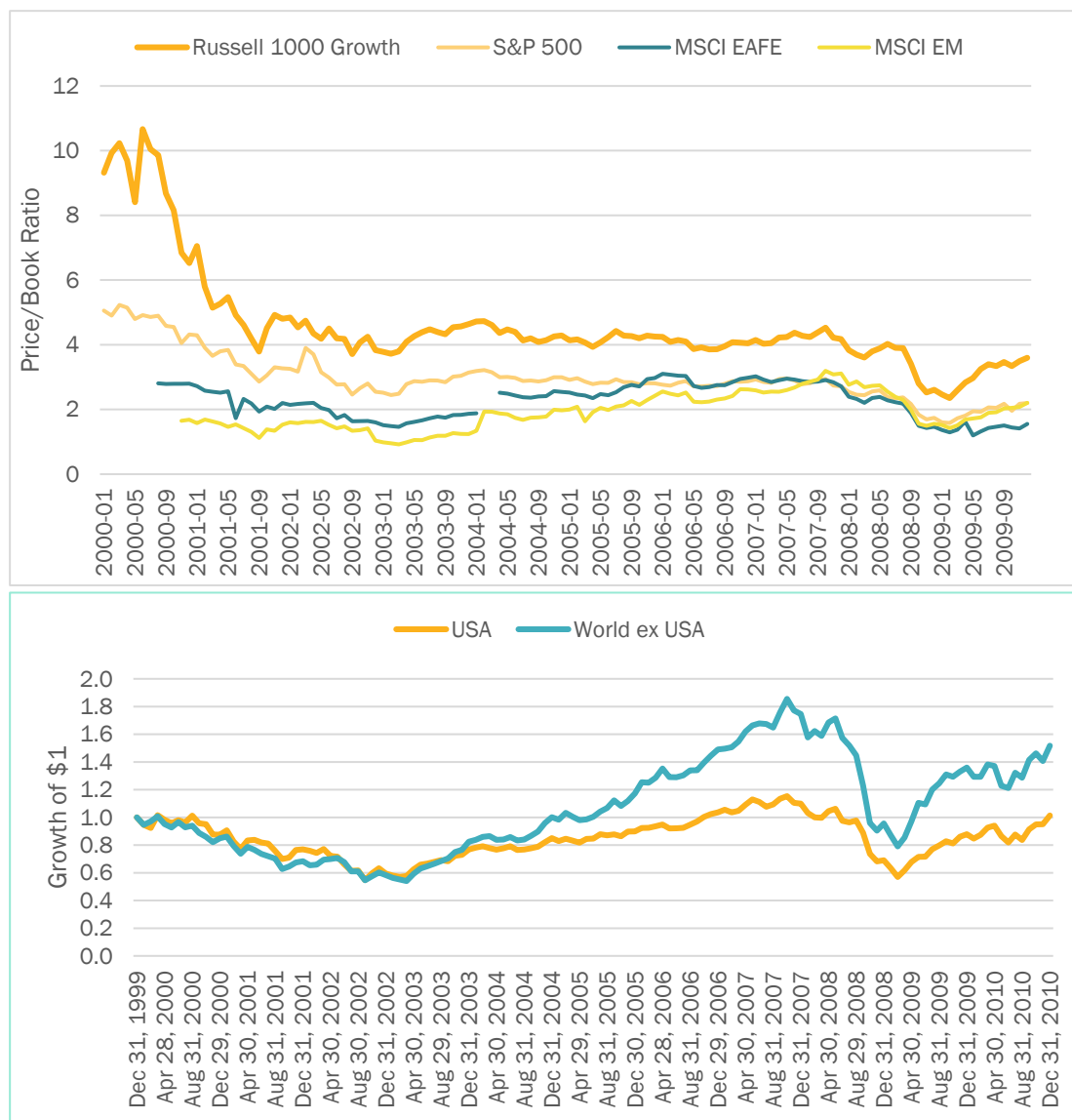
- Valuations are an indication of long-term future expected returns. Higher prices to fundamentals imply lower expected returns. Valuation spreads are considerably higher for U.S. large cap stocks, in particular large growth stocks.



Source: Avantis Investors, data from Morningstar. December 31, 2011 – December 31, 2021.

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

EARLIER VALUATIONS AND PERFORMANCE

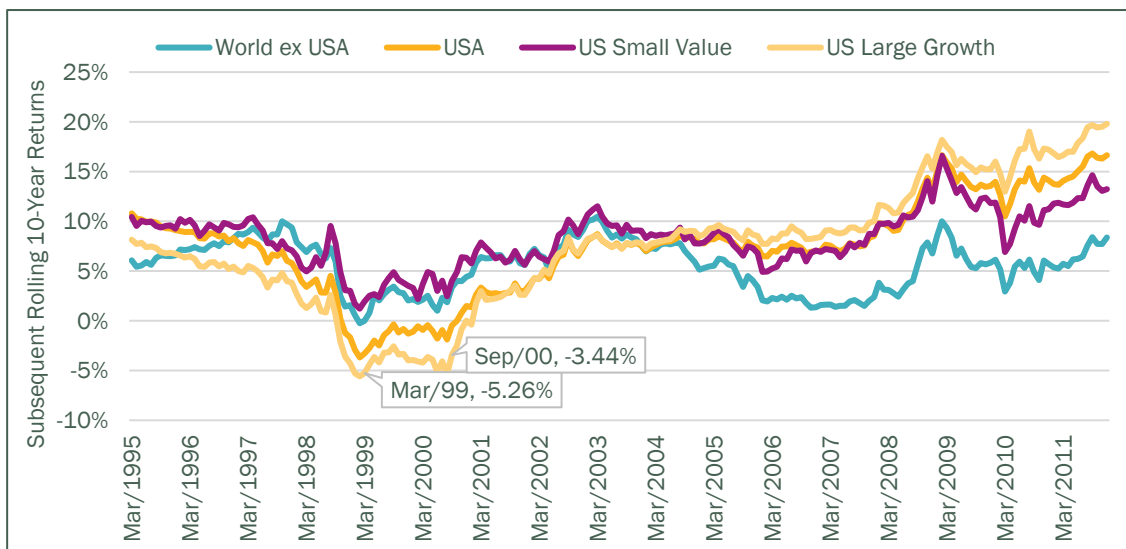
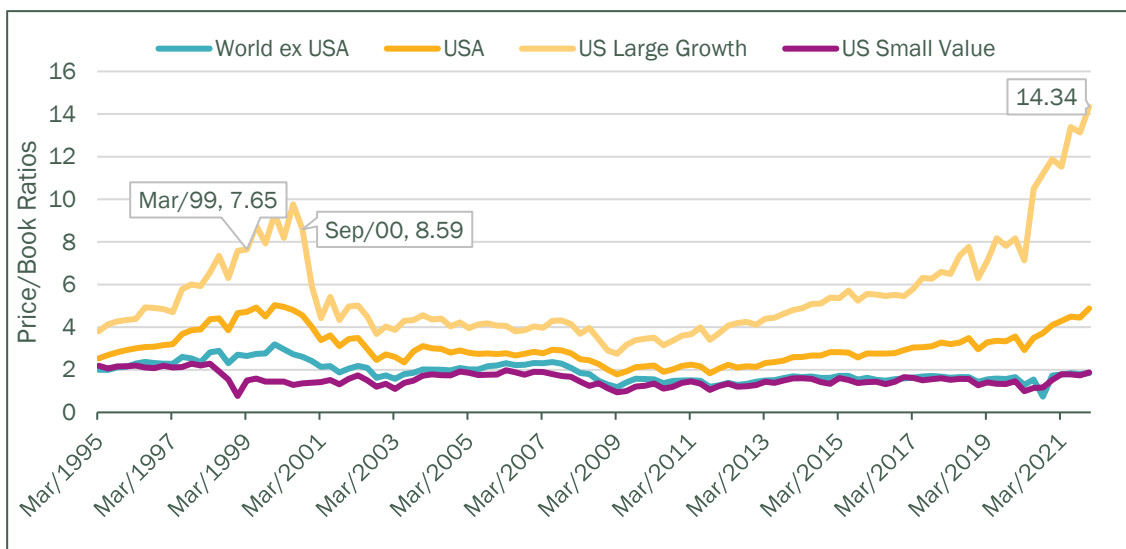


- In the top chart we plot price-to-book ratios for U.S. large cap growth stocks, U.S. large cap stocks, non-U.S. developed and emerging market stocks. U.S. stocks had extremely high valuations relative to the rest of the world.
- In the bottom chart we plot the growth of \$1 in U.S. stocks and International stocks starting in January 2000 through the end of 2010. As you can see, International stocks significantly outperformed over this period as U.S. large cap returns were basically flat over this period (often referred to as “the lost decade”).
- This period serves as a good reminder why having an allocation to international stocks can help investors relative to just being concentrated in U.S. stocks.

Source: Avantis Investors, data from Morningstar and returns in USD from MSCI. USA is MSCI USA Index. World ex USA is MSCI World ex USA Index.

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

VALUATIONS AND SUBSEQUENT RETURNS



- These two charts allow the comparison of valuation levels (measured by P/B in the top chart) and subsequent returns (using rolling 10-year returns starting at each date listed on the x-axis in the bottom chart) for each equity market segment.
- For example, U.S. Large Growth stocks had a P/B ratio of 7.65 in March of 1999. Subsequent 10-year annualized returns were -5.26%.
- By way of context, P/B ratios for U.S. Large Growth Stocks as of the end of 2021 were greater than 14.

Price/Book ratio is price per share divided by book value (net assets) per share. Past performance is no guarantee of future results.

Source: Avantis Investors, data from Morningstar and returns in USD from MSCI and Russell. USA is MSCI USA Index. World ex USA is MSCI World ex USA Index. US Large Growth is the Russell 1000 Growth Index and US Small Value is Russell 2000 Value Index.

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

PERFORMANCE OF U.S. VS. WORLD EX U.S.

- If we look at performance the last time, we saw valuations this high in the U.S., international markets fared much better than the U.S., so much so that International markets were leading over the full period by the end of 2011.

USA	World ex USA Jan 1970 – Dec 2001	Difference
11.56%	10.91%	0.66%

Next 10 Years: Jan 2002 – Dec 2011		
2.98%	5.56%	-2.58%

Full Period 10 Years Later: Jan 1970 – Dec 2011		
9.46%	9.62%	-0.16%

Source: Avantis Investors, returns in USD from MSCI. USA is MSCI USA Index. World ex USA is MSCI World ex USA Index

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

SUMMARY

- The U.S. is a large fraction of the world, but there are benefits in considering the rest of the world
- Over the last 10 years the U.S. has outperformed the world, but the valuations of US companies have increased significantly
- In 2011, investors may have been wondering why they allocated to the U.S. at all based on the performance over the previous 10 years



DISCLOSURES

PRESENTATION DISCLOSURES

SUSTAINABLE WITHDRAWAL DISCLOSURES

The attached analysis provides results computed from a proprietary model designed by employees of Mason Investment Advisory Services, Inc. The model assumes historical investments in one or more of the ten hypothetical portfolios discussed below. The returns of these portfolios are computed based on actual historic index returns as outlined below. These returns come from data sources we believe to be reliable, but we have not verified the accuracy of these historic returns.

The model computes outcomes based on an analysis of one, five, ten, fifteen, twenty, twenty five, thirty five, and fifty year rolling periods from December 31, 1925 to December 31, 2021. A total of 3,532 separate and comprehensive calculations are made in order to calculate the summary conclusions. For example, there are 1,093 separate 5 year rolling periods from December 31, 1925 to December 31, 2021. The model is designed to assist investors with determining how a portfolio would have performed in various environments to assist with making informed decisions regarding investment allocation and withdrawal rates.

For each of the 3,532 rolling periods, the analysis assumes an initial investment of \$1 million unless otherwise indicated. It is assumed that this amount is invested in the indicated portfolio and that it earns returns of the indicated set of indexes assuming monthly rebalancing. It is assumed that withdrawals are taken as a stated percent of the portfolio under one of two calculation methods which incorporate a calculation based on rolling quarterly ending values and/or by inflation adjusting an initial distribution rate as indicated. It is assumed spending is computed on an annual basis based on one of the following two methods and that distributions are taken out based on this computed rate on a monthly basis:

Rolling Quarters: In all cases during the initial year distributions are taken as a percent of the beginning value. During subsequent years distributions are calculated based on quarterly ending values as of the end of the third quarter of the preceding year (through September 30 of the preceding year in the case of calendar years). For example, the 1927 distributions are based on the average quarter ending balances from March, June and September of 1926. These would be the same regardless of the 1, 3, or 5 year period selected. In 1928, distributions are based on the average ending values for the seven quarters ending 9-30-1927. This calculation would be the same whether the 3 or 5 year rolling average payout was selected.

Banded Approach: Here the program runs three distinct calculations during for each yearly spending calculation. First it adjusts the initial distribution amount each year based on cumulative inflation through the third quarter of the previous year (September 30 in the case of a calendar year). For example, the 1927 distribution is based on the initial distribution reduced by 2.2% due to deflation over the December 31, 1925 to September 30, 1926 period. The 1928 distribution is calculated based on deflation of 3.4% from December 31, 1925 to September 30, 1927. The 1975 distribution of \$11,778 is based on the initial distribution adjusted by cumulative inflation of 182.7% from December 31, 1925 to September 30, 1974. This column essentially computes a constant payout in real dollar terms. The other two calculations establish maximum and minimum distribution amounts based on the portfolio's value.

PRESENTATION DISCLOSURES

SUSTAINABLE WITHDRAWAL DISCLOSURES

Maximum and minimum monthly distributions are calculated based on previous rolling quarter ending balances through September 30 of the previous year. Where this method is used these maximum and minimum constraints are identified as the “Lower Band” and “Upper Band”. The methodology is similar to that discussed above except the distribution amount depends on the min and max constraints and the computations are based on quarter ending balances which incorporate actual distributions taken each month (which may be the inflation adjusted amounts discussed in the previous paragraph).

The program computes the amount to be distributed if the banded approach is being utilized based on the following rules. It will be the inflation adjusted amount discussed in the first paragraph if that amount is higher than the minimum established and lower than the maximum established in the second paragraph. If it is less than the minimum, the minimum will be used as the distribution for that year. If it is greater than the maximum, the maximum will be used for that year.

The banded approach essentially blends two methods of calculating distributions (inflation adjusted and rolling quarters). It seeks to maintain a constant distribution in terms of real dollars but has built in brakes during bad times for the portfolio and allows for additional spending, to a point during good times. This method would be appropriate where a goal is to maintain an initial budget (in real dollars) where possible but to adjust this amount so that future generations are not harmed because of lean time (potentially depleting the portfolio) or given excess benefit (at the expense of current beneficiaries during good times).

There are two additional variables which may be incorporated into the analysis.

1. **Deferral Period:** Unless otherwise indicated it is assumed that distributions are withdrawn during each month beginning with the first month. If a number appears in this field then it is assumed that fees are taken out in each month but that no “spending” distributions are taken out until the stated month. For example, if 60 is entered in this field then it is assumed that spending does not commence until the 61st month (and that there is no spending for the first five years).
2. **Acceptable Termination Value (as percent of beginning value).** Unless otherwise indicated it is assumed the ending target value is equal to the beginning portfolio value. If a percent is entered here, that target is adjusted based on the percent entered. For example if 70% was entered here it would be assumed that an ending value of \$700K would be deemed a success for purposes of reaching the ending portfolio target goal. Where the ending portfolio target goal is an inflation adjusted target then success in this case would be defined as a portfolio with an ending target value of \$700K adjusted for inflation (or deflation).

The model was designed to produce a variety of output based on various “what if” scenarios. In all cases, historical returns are assumed as indicated above.

PRESENTATION DISCLOSURES

SUSTAINABLE WITHDRAWAL DISCLOSURES

Below we describe the output provided. Unless otherwise indicated, an annual fee of 2.0% (0.16667% per month) is assumed. This is meant to incorporate total consulting and investment manager fees of 1% per year plus administrative fees of the foundation or other entity totaling 1% per year.

Your handout may not include all output indicated below. Please ask your Mason advisor if you would like to see additional scenarios not provided with this handout. It is assumed that these withdrawals are taken out monthly.

At the end of each rolling period, three primary observations are made:

1. Whether the portfolio was able to fully fund the inflation adjusted monthly distribution, without fully depleting the portfolio. This is considered a success in that the investor would have been able to fund all distributions over the stated time horizon.
2. Ending Value in nominal dollar terms. Here it is generally considered a success if the portfolio funds all distributions on an inflation adjusted basis, and the portfolio ends up with at least \$1 million (or the stated beginning portfolio value).
3. Growth or decline of portfolio in real terms. To determine this amount we adjust the ending portfolio value for inflation (or deflation). Here it is generally considered a success if the portfolio funds all distributions on an inflation adjusted basis and the portfolio ends up with at least \$1 million in today's dollars (or the stated beginning portfolio value in today's dollars).

Your output may provide the percent of times that these goals would have been met. For example, there are 1,033 rolling ten year calculations. A success rate of 90% would indicate that the stated goal would have been reached in about 930 of these historic periods.

The average ending balance is calculated by taking the ending portfolio value at the end of each rolling period and dividing it by the total number of rolling periods. To calculate the average ending balance for the ten year time horizon, we add the ending balance from each of the 1,033 scenarios and divide this total by 1,033. This may be shown as a nominal or inflation adjusted dollar amount as indicated.

Percentiles: A percentile is the value of a variable below which a certain percent of observations fall. So the 20th percentile is the value below which 20% of the observations may be found. Put differently, the 20th percentile indicates the value at which the portfolio would have ended with that value or higher 80% of the time. In order to calculate the percentiles for the ten year scenario, we rank the returns at the end of each separate 10 year period (1,033 in all). The first percentile indicates approximately the 9th worst outcome (In 1,023 of 1,033 periods, you would have ended with a greater value). The 10th percentile indicates the value which would have been exceeded in 930 of 1,033 rolling ten year periods. Percentile analysis is very important in understanding the range of historical outcomes to allow for a more informed decision regarding the appropriate portfolio allocation and distribution policy.

PRESENTATION DISCLOSURES

SUSTAINABLE WITHDRAWAL DISCLOSURES

Historical Back test of current Five Risk Profile Portfolios

In order to provide a long term perspective of how these allocations might have performed over various historical environments we've created model portfolios of the indices discussed below going back to December 31, 1925. One or more of these five model portfolios are included in some of the charts contained in this document. Where index data is not available for earlier periods, we allocated those categories to similar categories for which index data is available. The following pages show the assumptions we've made for each of the five portfolios. For example, since a hedged foreign bond index was not available prior to 1985, we assumed the entire foreign bond allocation was invested in unhedged foreign bonds from 1978 to 1984.

1. 37% Equity/63% Bond
2. 51.5% Equity/48.5% Bond
3. 65% Equity/35% Bond
4. 77% Equity/23% Bond
5. 87% Equity/13% Bond

In each case, these blends represent a hypothetical investment in a blend of the S&P Composite Index and the Ibbotson Associates US IT Government Bond Index. Monthly rebalancing is assumed in all hypothetical portfolio back tests. Also, where we indicate a portfolio is a "custom portfolio", this portfolio represents a blend, as indicated, between any two of the 13 portfolios or indices. Additionally, in some cases, we may test an all bond, all cash, or all S&P Composite portfolio. The all bond portfolio represents a 100% allocation to the Ibbotson Associates Intermediate Government Bond Index. The all cash portfolio represents a 100% allocation to US 30 day T bills.

S&P Composite Index: The S&P Composite Index is a readily available, carefully constructed, market-value-weighted index of large company stock performance.

Ibbotson Associates Intermediate Government Bond Index: This is an index designed to be representative of returns on intermediate (5 year) US Government bonds from 1926 to present.

Inflation: The rate of change in consumer prices. The Consumer Price Index for All Urban Consumers (CPI-U), not seasonally adjusted, is used to measure inflation. Prior to January 1978, the CPI (as compared to the CPI-U) was used.

PRESENTATION DISCLOSURES

PROXY DISCLOSURES

Category	Index	From	To
Cash	Ibbotson US 30 Day TBill TR	Jan-26	Present
Short Term Bond	Bloomberg US Government/Credit 1-5 Year TR	Jan-76	Present
	Ibbotson US Historical Government Bond (1-4.99 Year) Index	Jan-26	Dec-75
Intermediate Term Bond	Bloomberg US Govt/Credit 5-10 Year TR	Jan-76	Present
	Ibbotson US Intermediate-Term Government Bond Index	Jan-26	Dec-75
Inflation Protected Bonds	ICE BofA US Inflation-Linked Treasury TR	Mar-97	Present
International Bond Hedged	FTSE World Government Bond Index (WGBI) NonUSD Hdg TR	Jan-85	Present
International Bond Non-Hedged	FTSE World Government Bond Index (WGBI) NonUSD TR	Jan-85	Present
Equity- US Large Value	MSCI US Prime Market Value GR	Jun-92	Present
	Fama-French Large Value	Jul-27	May-92
Equity- US Large Growth	MSCI US Prime Market Growth GR	Jun-92	Present
	Fama-French Large Growth	Jul-27	May-92
Equity- Non-US Large Value	MSCI ACWI ex USA Value GR	Jan-97	Present
	MSCI World ex USA Value GR	Jan-75	Dec-96
Equity- Non-US Large Growth	MSCI ACWI ex USA Growth GR	Jan-97	Present
	MSCI World ex USA Growth GR	Jan-75	Dec-96
Equity- REITS	70% FTSE NAREIT Equity REIT TR/30% S&P Global ex US REIT TR	Jan-95	Present
	FTSE NAREIT Equity REIT TR	Jan-72	Dec-94
Equity- US Small Value	MSCI US Small Cap Value GR	Jun-92	Present
	Fama-French Small Value	Jul-27	May-92
Equity- US Small Growth	MSCI US Small Cap Growth GR	Jun-92	Present
	Fama-French Small Growth	Jul-27	May-92
Equity- Non-US Small Cap	MSCI ACWI ex USA Small GR	Jun-94	Present
	S&P Developed ex US Small TR	Jul-89	May-94
	IIA International Small Cap	Jan-75	Jun-89
Energy/Natural Resources	32% MSCI ACWI Energy GR, 32% MSCI USA IMI Energy GR, 25% MSCI USA IMI Materials GR, 11% S&P Global 1200 Materials TR	Jan-98	Present
	Lipper Energy & Natural Resources – (Historical Monthly Constituents)	Oct-90	Dec-97
	Morningstar Specialty - Natural Resources Open End Fund Category Average	Feb-69	Sep-90

PRESENTATION DISCLOSURES

INDEX DEFINITIONS

Bloomberg US Government/Credit 1-5 Year TR: This index tracks the performance of intermediate term U.S. government and corporate bonds with maturities of 1-5 Years.

Bloomberg US Government/Credit 5-10 Year TR: This index tracks the performance of intermediate term U.S. government and corporate bonds with maturities of 5-10 Years.

Ibbotson US 30 Day TBill TR: For this index, each month a one-bill portfolio containing the shortest-term bill having not less than one month to maturity is constructed. To measure holding period returns for this portfolio, the bill is priced as of the last trading day of the previous month-end and as of the last trading day of the current month.

Ibbotson US Historical Government Bond (1-4.99 Year) Index: This is a market value-weighted index which measures the performance of U.S. Treasury issues with maturities greater than one year and less than five years. Each month a portfolio containing all bonds meeting the maturity criteria is constructed. To measure holding period returns for the portfolio, the portfolio is priced (with accrued coupons) at the beginning of the month and the end of the month and total returns are calculated there from. The index includes reinvestment of income.

Ibbotson US Intermediate-Term Government Bond Index: This is an unweighted index which measures the performance of five-year maturity U.S. Treasury Bonds. Each year a one-bond portfolio containing the shortest noncallable bond having a maturity of not less than five years is constructed. Bonds with impaired negotiability or special redemption privileges are omitted, as are partially or fully tax-exempt bonds starting in 1943. To measure holding period returns for the one-bond portfolio, the bond is priced (with accrued coupons) over the holding period and total returns are calculated.

ICE BofA US Inflation-Linked Treasury TR: A rules-based index consisting of securities that meet the following criteria: Equal to or greater than one year remaining term to final maturity; at least \$1 billion face value outstanding; inflation-linked bonds issued by the U.S. Treasury.

Fama-French Large Growth: This index is a capitalization-weighted index which measure the performance of U.S. equities in the first and second quartiles of market capitalization and with low book-to-market ratios.

Fama-French Large Value: This index is a capitalization-weighted index which measures the performance of U.S. equities in the first and second quartiles of market capitalization and with high book-to-market ratios.

Fama-French Small Growth: This index is a capitalization-weighted index which measures the performance of U.S. equities in the third and fourth quartiles of market capitalization and with low book-to-market ratios.

Fama-French Small Value: This index is a capitalization-weighted index which measures the performance of U.S. equities in the third and fourth quartiles of market capitalization and with high book-to-market ratios.

FTSE NAREIT Equity REIT TR: An unmanaged, market-capitalization-weighted index of all tax-qualified equity REITs listed on the NYSE, AMEX, and the Nasdaq that have 75% or more of their gross invested book assets invested directly or indirectly in the equity ownership of real estate.

FTSE World Government Bond Index (WGBI) NonUSD Hdg TR: A hedged, market-capitalization weighted benchmark that tracks the performance of fixed-rate sovereign debt issued in the domestic market in the local currency with at least one year maturity.

FTSE World Government Bond Index (WGBI) NonUSD TR: A market-capitalization weighted benchmark that tracks the performance of fixed-rate sovereign debt issued in the domestic market in the local currency with at least one year maturity.

IIA Methodology: IIA starts with the MSCI® indices and breaks down each country or region into eight market cap weighted indices: Growth, Value, Large, Small, Small Growth, Small Value, Large Growth and Large Value. There are three fundamental differences between the IIA indices and the MSCI® indices: reinvestment of dividends, inclusion criteria, and rebalancing frequency. The reinvestment of dividends differs between the two vendors in that MSCI® reinvests dividends at the overall index level, while IIA reinvests dividends in each country. Secondly, MSCI® aims for roughly 60% of the market capitalization coverage of a particular country, while IIA aims for a higher market capitalization coverage, approximately 80%, by including every security that MSCI® covers. Lastly, MSCI® rebalances quarterly while IIA rebalances twice a year in January and July.

Lipper Energy & Natural Resources® (Historical Monthly Constituents): This data series includes historical returns for all funds which Lipper categorizes into the Energy & Natural Resources Category.

MSCI ACWI Energy: This index includes large and mid cap securities across 23 Developed Markets (DM) and 27 Emerging Markets (EM) countries*. All securities in the index are classified in the Energy as per the Global Industry Classification Standard (GICS®).

MSCI ACWI ex USA Growth: This index captures large and mid cap securities exhibiting overall growth style characteristics across 22 Developed Markets (DM) countries and 26 Emerging Markets (EM) countries*. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long-term historical sales per share growth trend.

MSCI ACWI ex USA Small: This index captures small cap representation across 22 of 23 Developed Markets (DM) countries (excluding the US) and 27 Emerging Markets (EM) countries*. With 4,398 constituents, the index covers approximately 14% of the global equity opportunity set outside the US.

MSCI ACWI ex USA Value: This index captures large and mid cap securities exhibiting overall value style characteristics across 22 Developed and 27 Emerging Markets countries*. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield.

MSCI USA IMI Energy Sector: This index is designed to capture the large, mid and small cap segments of the US equity universe. All securities in the index are classified in the Energy sector as per the Global Industry Classification Standard (GICS®).

MSCI USA IMI Materials Sector: This index is designed to capture the large, mid and small cap segments of the US equity universe. All securities in the index are classified in the Materials sector as per the Global Industry Classification Standard (GICS®).

MSCI US Prime Market Growth: This index represents the growth companies of the MSCI US Prime Market 750 Index. (The MSCI US Prime Market 750 Index represents the universe of large and medium capitalization companies in the US equity market. This index targets for inclusion 750 companies. The MSCI US Prime Market Growth Index is a subset of the MSCI US Prime Market 750 Index.

MSCI US Prime Market Value: The MSCI US Prime Market 750 Index is comprised of the largest 750 companies in terms of market capitalization of the US equity market and designed to measure the performance of the large and mid cap segment. The index represents approximately 87.5% of the free float-adjusted market capitalization of the US equity market. The MSCI US Prime Market Value Index is a subset of the MSCI US Prime Market 750 Index.

MSCI US Small Cap Growth: This index captures small cap securities exhibiting overall growth style characteristics in the US. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long-term historical sales per share growth trend.

MSCI US Small Cap Value: This index captures small cap US securities exhibiting overall value style characteristics. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield.

S&P Developed ex US Small TR: This index is a subset of the S&P Global BMI, the S&P Developed Ex-U.S. SmallCap seeks to measure the stocks representing the lowest 15% of float-adjusted market cap in each developed country, excluding the U.S.

S&P Global 1200 Materials TR: This index consists of all members of the S&P Global 1200 that are classified within the GICS® materials sector.

S&P Global ex US REIT TR: An unmanaged market-weighted total return index that is designed to provide an accurate measure of the broad global property market. It covers companies domiciled in 50 developed and emerging market countries and includes companies with floats larger than \$100 million and that derive more than half of their revenue from property-related activities.

PRESENTATION DISCLOSURES

RISK LEVEL PORTFOLIO DISCLOSURES

Risk Level 3 Series Name	Jan 1926 - Jun 1927	Jul 1927 - Dec 1969	Jan 1970 - Dec 1971	Jan 1972 - Dec 1974	Jan 1975 - Dec 1984	Jan 1985 - Feb 1997	Mar 1997 - Present
U.S. 30 Day Tbill TR	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Short Term Bond Proxy	12.63%	12.63%	12.63%	12.63%	12.63%	10.13%	7.25%
Intermediate Term Bond Proxy	20.38%	20.38%	20.38%	20.38%	20.38%	17.88%	15.00%
Inflation Protected Bonds	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.75%
FTSE WGBI U.S. \$ Hdgd Non U.S.	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	2.50%
FTSE WGBI NonUSD USD TR	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	2.50%
Ibbotson Associates U.S. IT Gov't TR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
U.S. Large Value Proxy	0.00%	31.79%	27.00%	22.38%	13.50%	13.50%	13.50%
U.S. Large Growth Proxy	0.00%	18.30%	15.81%	12.73%	8.00%	8.00%	8.00%
Foreign Large Value Proxy	0.00%	0.00%	0.00%	0.00%	7.00%	7.00%	7.00%
Foreign Large Growth Proxy	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	5.00%
Real Estate Proxy	0.00%	0.00%	0.00%	11.00%	11.00%	11.00%	11.00%
U.S. Small Value Proxy	0.00%	9.33%	8.58%	6.60%	5.00%	5.00%	5.00%
U.S. Small Growth Proxy	0.00%	5.58%	5.12%	3.80%	3.00%	3.00%	3.00%
Foreign Small Cap Proxy	0.00%	0.00%	0.00%	0.00%	4.00%	4.00%	4.00%
Energy & Natural Resources Proxy	0.00%	0.00%	8.50%	8.50%	8.50%	8.50%	8.50%
S&P Composite Index	65.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

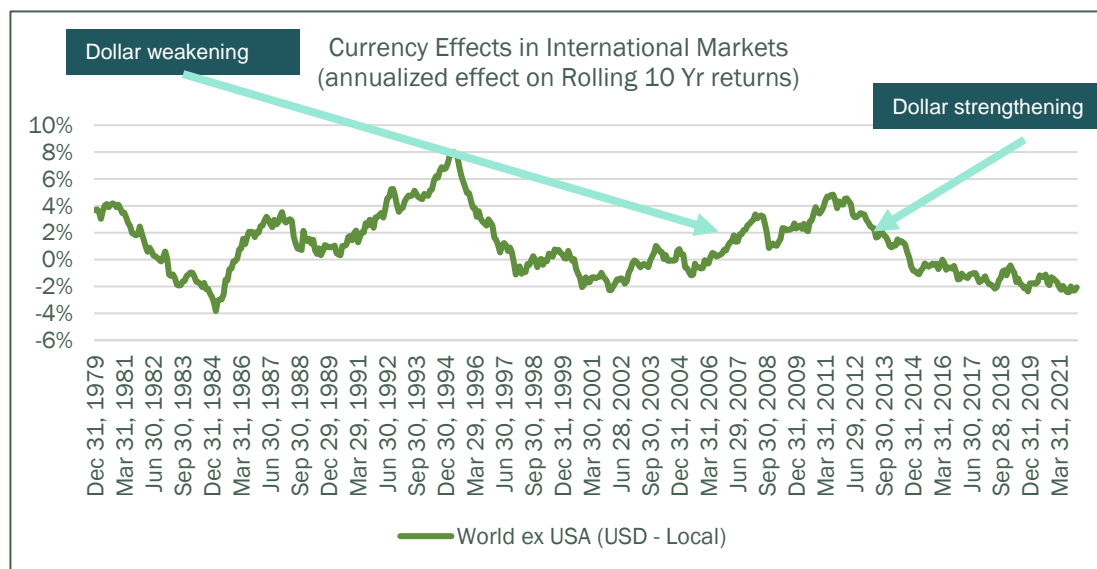
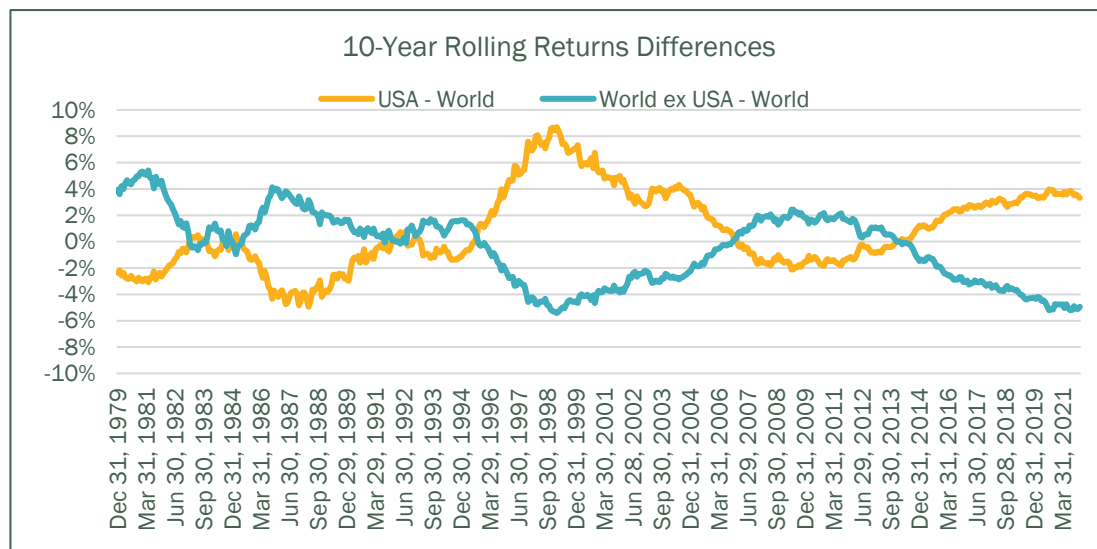
Risk Level 4 Series Name	Jan 1926 - Jun 1927	Jul 1927 - Dec 1969	Jan 1970 - Dec 1971	Jan 1972 - Dec 1974	Jan 1975 - Dec 1984	Jan 1985 - Feb 1997	Mar 1997 - Present
U.S. 30 Day Tbill TR	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Short Term Bond Proxy	8.75%	8.75%	8.75%	8.75%	8.75%	6.00%	4.00%
Intermediate Term Bond Proxy	13.25%	13.25%	13.25%	13.25%	13.25%	10.50%	8.50%
Inflation Protected Bonds	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.00%
FTSE WGBI U.S. \$ Hdgd Non U.S.	0.00%	0.00%	0.00%	0.00%	0.00%	2.75%	2.75%
FTSE WGBI NonUSD USD TR	0.00%	0.00%	0.00%	0.00%	0.00%	2.75%	2.75%
Ibbotson Associates U.S. IT Gov't TR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
U.S. Large Value Proxy	0.00%	34.13%	29.62%	26.68%	17.00%	17.00%	17.00%
U.S. Large Growth Proxy	0.00%	20.04%	17.69%	15.73%	11.00%	11.00%	11.00%
Foreign Large Value Proxy	0.00%	0.00%	0.00%	0.00%	7.00%	7.00%	7.00%
Foreign Large Growth Proxy	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	5.00%
Real Estate Proxy	0.00%	0.00%	0.00%	7.00%	7.00%	7.00%	7.00%
U.S. Small Value Proxy	0.00%	15.36%	14.66%	13.40%	11.00%	11.00%	11.00%
U.S. Small Growth Proxy	0.00%	7.47%	7.04%	6.20%	5.00%	5.00%	5.00%
Foreign Small Cap Proxy	0.00%	0.00%	0.00%	0.00%	6.00%	6.00%	6.00%
Energy & Natural Resources Proxy	0.00%	0.00%	8.00%	8.00%	8.00%	8.00%	8.00%
S&P Composite Index	77.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%



APPENDIX

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

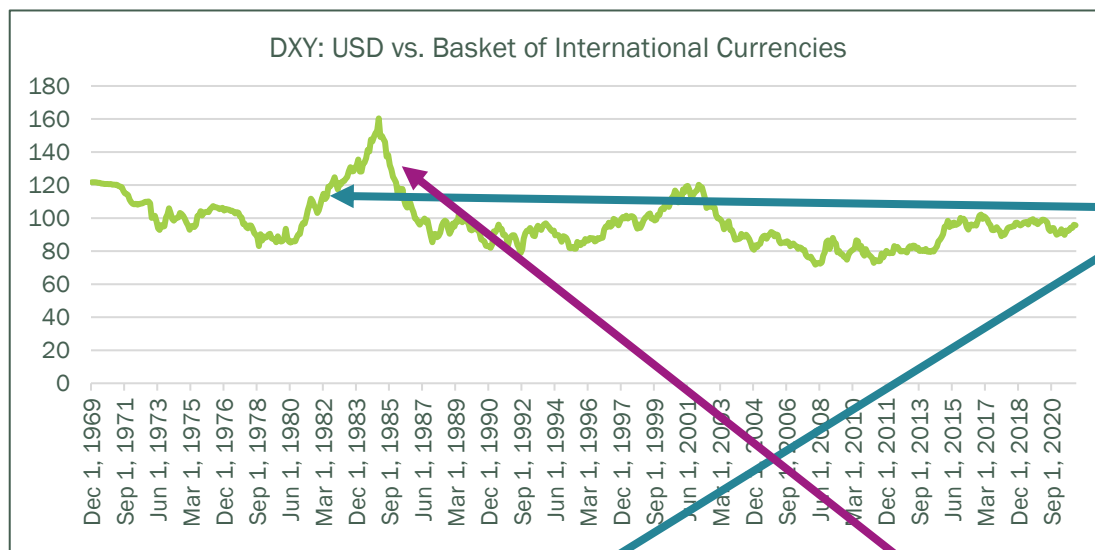
EFFECT OF CURRENCIES IN INTERNATIONAL RETURNS



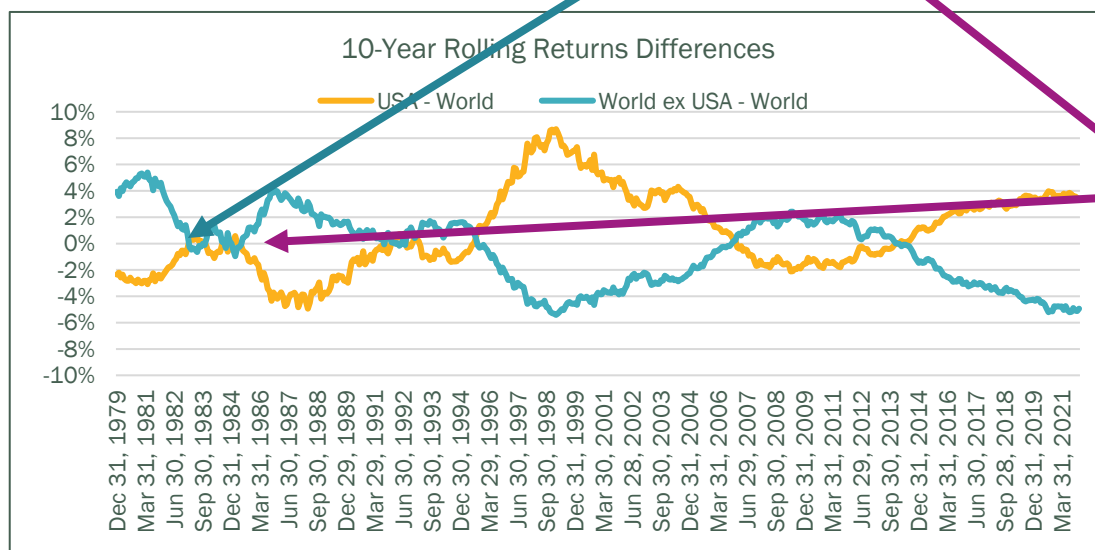
- These charts show the effect of currencies in the performance of International markets.
- The top chart shows the difference in 10-year rolling returns between U.S. and International stocks.
- The bottom chart shows returns of international stocks in USD minus the returns of international stocks in their local currency.
- Over the last 10 years the strengthening of the USD vs. other currencies detracted from international returns when computed in USD (7.72%) vs. local currency (10.44%).

Source: Avantis Investors, data from Morningstar and returns in USD and local currency from MSCI. USA is MSCI USA Index. World ex USA is MSCI World ex USA Index. Rolling 10-year periods ending December 1979 through December 2021.

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?



All else equal, periods of dollar strengthening contribute to relative outperformance of US vs. international Markets.

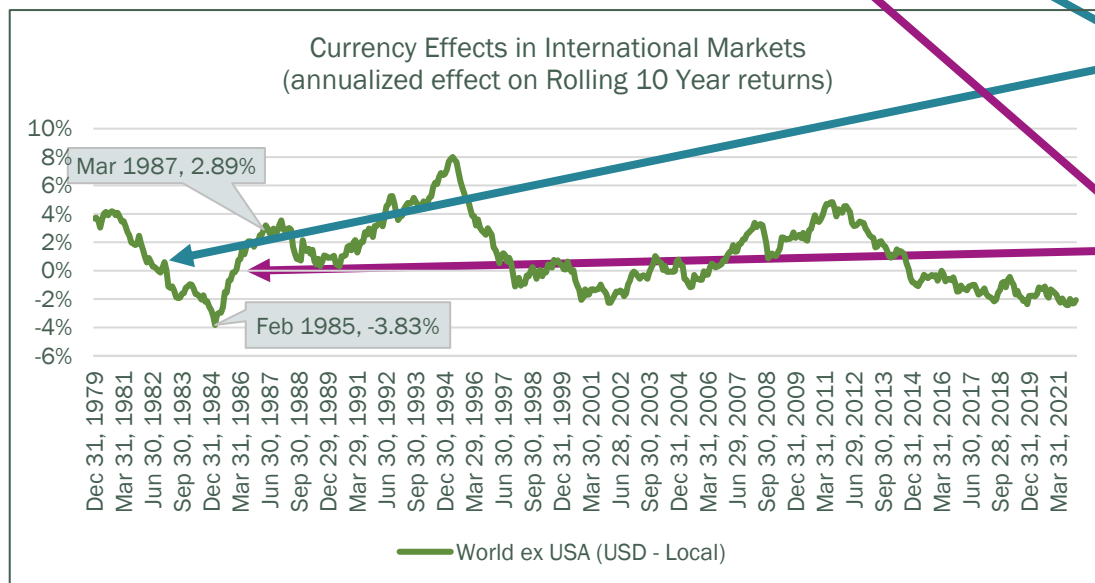
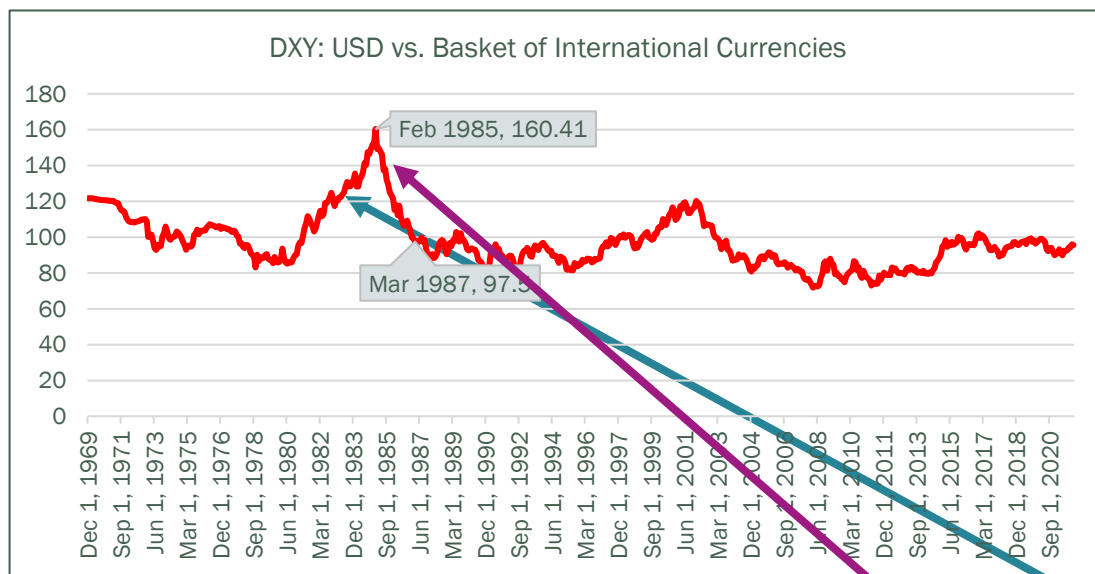


Conversely, all else equal, a weaker dollar contributes to relative outperformance of international markets vs. the US.

Source: Avantis Investors, data from Bloomberg and returns from MSCI. USA is MSCI USA Index. World ex USA is MSCI World ex USA Index. Rolling 10-year periods ending December 1979 through December 2021. DXY compares U.S. Dollars to a basket of non-US currencies. It currently includes Euros, Japanese Yen, British Pounds, Canadian Dollars, Swedish Krona and Swiss Francs.

WHY SHOULD WE CONSIDER ALLOCATING TO INTERNATIONAL STOCKS?

EFFECT OF CURRENCIES IN INTERNATIONAL RETURNS



These charts show the effect of currencies in the performance of International Markets. Over the last 10 years the strengthening of the USD vs. other currencies detracted from international returns when computed in USD (7.72%) vs. local currency (10.44%).

Periods of dollar strengthening will mean lower USD returns for investors' non-US allocations.

Conversely, a weaker dollar will add to USD returns for investors' non-US allocations.

Source: Avantis Investors, data from Bloomberg and returns from MSCI. USA is MSCI USA Index. World ex USA is MSCI World ex USA Index. Rolling 10-year periods ending December 1979 through December 2021. DXY compares U.S. Dollars to a basket of non-US currencies. It currently includes Euros, Japanese Yen, British Pounds, Canadian Dollars, Swedish Krona and Swiss Francs.

GLOSSARY

Expected Returns: Valuation theory shows that the expected return of a stock is a function of its current price, its book equity (assets minus liabilities) and expected future profits, and that the expected return of a bond is a function of its current yield and its expected capital appreciation (depreciation). We use information in current market prices and company financials to identify differences in expected returns among securities, seeking to overweight securities with higher expected returns based on this current market information. Actual returns may be different than expected returns, and there is no guarantee that the strategy will be successful.

Market Capitalization: The market value of all the equity of a company's common and preferred shares. It is usually estimated by multiplying the stock price by the number of shares for each share class and summing the results.

MSCI Emerging Markets Index: Captures large- and mid-cap securities across 27 emerging markets countries.

NASDAQ Composite (Price Return) Index: A market value-weighted index of all domestic and international common stocks listed on the NASDAQ stock market.

Dow Jones Industrial Average: An average made up of 30 blue chip stocks that trade daily on the New York Stock Exchange.

Gross domestic product: Gross domestic product (or GDP) is a measure of the total economic output in goods and services for an economy.

MSCI EAFE Index: Captures large- and mid-cap representation across 21 developed markets countries around the world, excluding the US and Canada.

Russell 1000® Growth Index: Measures the performance of those Russell 1000 Index companies (the 1,000 largest publicly traded U.S. companies, based on total market capitalization) with higher price-to-book ratios and higher forecasted growth values.

Russell 2000® Value Index: Measures the performance of those Russell

2000 Index companies (the 2,000 smallest of the 3,000 largest publicly traded U.S. companies, based on total market capitalization) with lower price-to-book ratios and lower forecasted growth values.

Russell 3000® Index: Measures the performance of the largest 3,000 U.S. companies representing approximately 98% of the investable U.S. equity market.

S&P 500® Index: A market-capitalization-weighted index of the 500 largest U.S. publicly traded companies. The index is widely regarded as the best gauge of large-cap U.S. equities.

MSCI World ex USA Index: Captures large- and mid-cap representation across 22 of 23 developed markets countries, excluding the U.S. With 1,013 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

MSCI World ex USA IMI Index: Captures large-, mid- and small-cap representation across 22 of 23 developed markets countries, excluding the U.S. With 3,565 constituents, the index covers approximately 99% of the free float-adjusted market capitalization in each country.

MSCI ACWI (All Country World Index) Index: A free float-adjusted market capitalization-weighted index that is designed to measure the equity market performance of developed and emerging markets.

MSCI ACWI (All Country World Index) IMI: A free float-adjusted market capitalization-weighted index that is designed to measure the equity market performance of developed and emerging markets including large-, mid- and small-cap companies.

MSCI EAFE Index: Captures large- and mid-cap representation across 21 developed markets countries around the world, excluding the US and Canada.

DISCLOSURES

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