

Managing Portfolio Risk Using Asset Allocation Strategies

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Bob Pugh, CFA, CFP® Brief Biography

- President, Insight Wealth Management, Inc., a Registered Investment Adviser in Gainesville, VA, providing independent, fee-only wealth and investment management, and comprehensive financial planning services to individuals, families and charitable organizations. Member of the Schwab Institutional network of select independent advisors. IWM licenses Morningstar Office to provide portfolio analytics and wealth forecasting for clients, and to enhance access to investment research resources.
- Named one of the Best Financial Advisors for Doctors by “Medical Economics” in 2012 and 2013, and a NAPFA-Registered Financial Advisor.
- President of the CFA Society of Washington, DC, 2005 to 2007, and Eastern Region Presidents Council Representative, CFA Institute, 2009 to 2011.
- Over twenty years of experience as a financial educator and analyst, and portfolio manager in the private and public sectors, including working as an economic analyst with the Central Intelligence Agency, director of investment research, and senior financial analyst in municipal government.
- Graduate degrees in global political economy from The Johns Hopkins University, School of Advanced International Studies, and in financial economics from the University of North Carolina at Greensboro.
- Faculty member; Johns Hopkins University’s Carey School of Business and School of Medicine teaching graduate-level courses in investment analysis, portfolio management, and corporate finance, and continuing education in the Business of Medicine program, 2001 to 2009.
- Community Volunteer, including serving as President of the Prince William Symphony Orchestra for four years, Lay Speaking Minister in the Virginia United Methodist Conference, over ten years of service with the Virginia Cooperative Extension’s Personal Finance Program in Prince William County. Member of the CFA Institute, NAPFA, the National Association for Business Economics, the Financial Planning Association, and Mensa. Currently, volunteering as testing coordinator for Mensa in the Washington, DC area.
- Contact information available at www.insightwealth.com

Why Focus on Risk?



- Return should be the residual in the investment decision-making process
- First, establish risk tolerance, both ability and willingness
- Invest for as much return as possible without crossing the risk tolerance threshold

Some Types of Risk Individual Investors Face



- **Market-Related Risk**
 - Interest rate
 - Exchange rate
 - Equity price
 - Commodity price
 - Credit risk
 - Liquidity risk
- **Inflation (purchasing power)**
- **Political**
- **Life Expectancy**
 - Longevity (hedged with annuity exposure, or addressed through long-term portfolio strategies)
 - Mortality (usually hedged with life insurance)

Approaches to Defining Portfolio Risk



- **Traditional Finance Theory**
 - Volatility as measured by variance and standard deviation
 - Assumes:
 - ✦ Rational, efficient markets
 - ✦ Rational, efficient market participants
 - ✦ Optimizing behavior
 - ✦ Perfect Information
 - ✦ No impediments to instant reaction to new information

- **Non-traditional**
 - “Black Swans” - Taleb’s concept of low probability, high-impact events
 - Focus on risk of loss rather than on volatility; other behavioral finance concepts

Risk Management Strategies



- **Ignore risk and focus on return only** – not recommended
- **Active portfolio management** (security selection) – wide disagreement as to the effectiveness of active management; high degree of risk
- **Market timing** - wide disagreement as to the effectiveness of market timing; high degree of risk
- **Derivatives** – Derivative strategies can be used to eliminate most risk from portfolios, but these strategies are expensive and complex, typically lower expected returns significantly, and should be used only by those with extensive training and experience
- **Asset allocation** – our focus in today's presentation

Diversification



- Diversify not only security holdings, but asset class exposure
- Diversification eliminates risk exposure to individual securities, and leaves only risk exposure to the market or sectors
- Either hold an adequate number of individual securities or invest in index funds
- For those who think security selection adds value, do it within the framework of asset class exposure
- Diversified exposure to asset classes allows investors to benefit from the interaction of those classes in a portfolio to affect its risk and return patterns

Risk Reduction from Allocating Between Equity and Fixed-Income

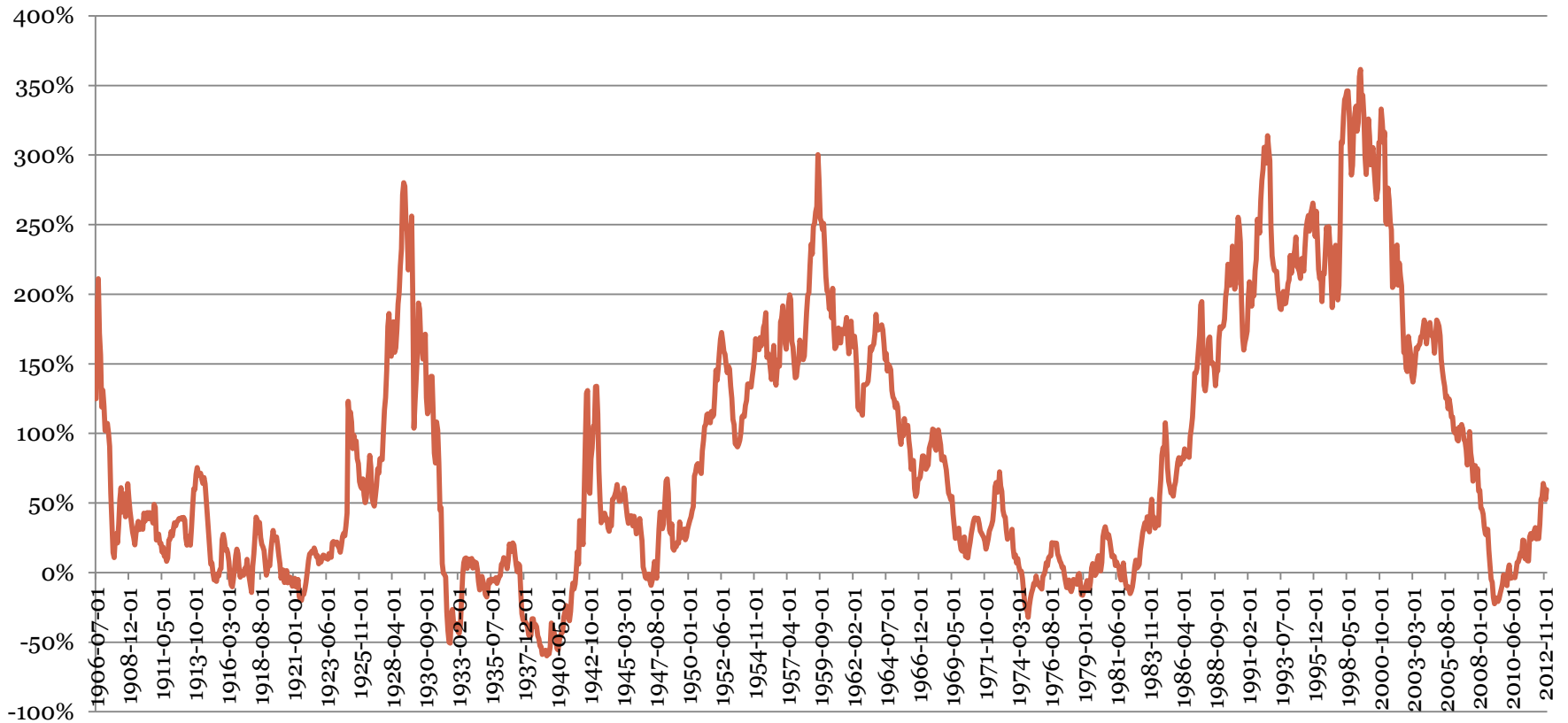


Ten-Year Returns and Risk, 1930 to 2013			
(measured monthly, excludes dividends)			
	Average		Standard
	Return		Deviation
100% DJIA	95%		96.0%
50% DJIA/50% AAA	51%		48.4%
40% DJIA/60% AAA	42%		38.9%

Equity and Fixed-Income Allocations



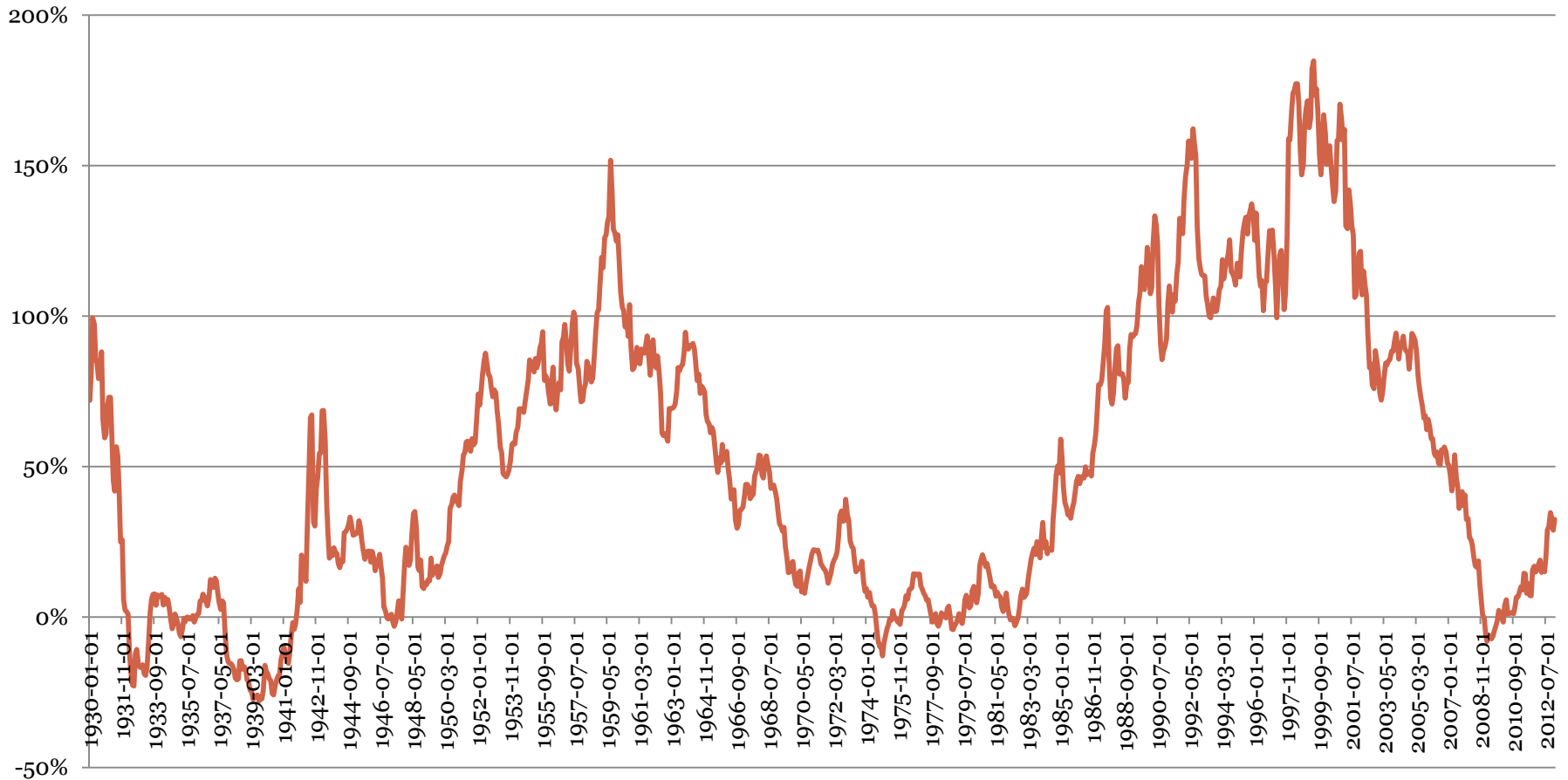
100% DJIA Allocation (does not include dividends)



Equity and Fixed-Income Allocations



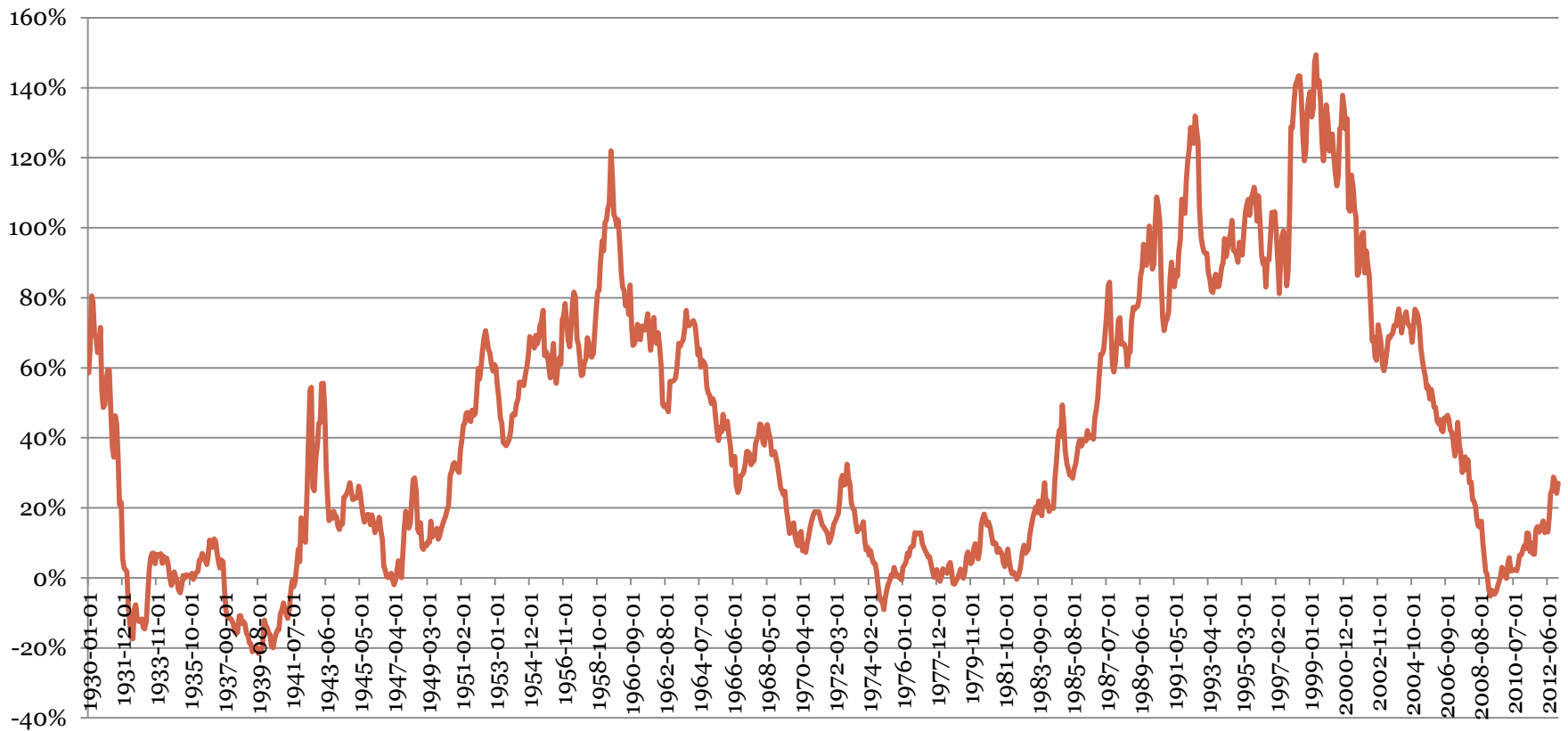
50% DJIA 50% AAA Bonds Allocation (does not include dividends)



Equity and Fixed-Income Allocations



40% DJIA 60% AAA Bond Allocation (does not include dividends)



Asset Class Impacts on the Portfolio



Benefits of Adding Asset Classes to a Core Portfolio of U.S. Large Capitalization Stocks

	Portfolio Diversification	Expected Return Enhancement	Inflation Protection	Currency Protection
US Large Cap	NA	NA	NA	NA
US Mid Cap	No	Yes	Yes	No
US Small Cap	No	Yes	Yes	No
Non-US Dev Stk	Yes*	Sometimes	Yes	Yes
Non-US Emrg Stk	Yes*	Yes	Yes	Yes
US Txbi Long Term Bonds	Yes	No	No	No
US Txbi Int Term Bonds	Yes	No	No	No
US Txbi Short Term Bonds	Yes	No	No	No
US Infl Protected Bonds	Yes	No	Yes	No
US Tax-Exempt Bonds	Yes	No	No	No
US High Yield Bonds	Yes	Sometimes	No	No
Non-US Dev Bonds	Yes	Sometimes	No	Yes
Non-US Emrg Bonds	Yes	Sometimes	No	Yes
Real Estate	Yes*	Sometimes	Yes	No
Commodities	Yes*	No	Yes	No
Cash	Yes	No	No	No
*Usually provides some diversification benefits but correlations increase during weak, declining or highly volatile markets.				

Quantitative Analytical Models



- Quantitative models, such as efficient frontiers, are useful but investors should use their own judgment also
- For example, the Morningstar/Ibbotson Associates model is including allocations to long-term fixed-income in their efficient frontier portfolios, even with the risk of rising interest rates in the next few years
- Inputs to optimization models, however carefully done, are forecasts of returns, standard deviations, and correlations and are subject to forecast error

Asset Class Allocation Examples



	Risk Level					Morningstar/Ibbotson Associates Market Expectations	
	Moderately Conservative	Expected Return	Aggressive		Expected Return	Return	Std. Dev.
US Large Cap Growth	5.00	0.49		10.00	0.99	9.89	22.78
US Large Cap Value	6.00	0.64		15.00	1.60	10.66	18.07
US Mid Cap Growth	2.00	0.21		5.00	0.54	10.71	26.28
US Mid Cap Value	2.00	0.26		5.00	0.64	12.77	21.61
US Small Cap Growth	2.00	0.25		5.00	0.62	12.37	31.67
US Small Cap Value	3.00	0.49		5.00	0.82	16.38	25.67
Non-US Dev Stk	5.00	0.58		15.00	1.75	11.68	23.45
Non-US Emrg Stk	5.00	0.78		10.00	1.56	15.57	32.60
US Txb1 Long Term Bonds	-	-		-	-	4.85	10.60
US Txb1 Int Term Bonds	30.00	1.14		-	-	3.79	5.27
US Txb1 Short Term Bonds	16.00	0.52		-	-	3.22	4.22
US Infl Protected Bonds	-	-		-	-	3.94	7.10
US Tax-Exempt Bonds	-	-		-	-	4.29	7.47
US High Yield Bonds	5.00	0.40		5.00	0.40	7.95	15.05
Non-US Dev Bonds	4.50	0.17		-	-	3.86	10.73
Non-US Emrg Bonds	4.50	0.34		5.00	0.38	7.57	15.67
Cash	-	-		-	-	2.44	3.10
Real Estate	5.00	0.63		10.00	1.26	12.63	22.49
Commodities	5.00	0.37		10.00	0.74	7.36	19.88
Allocation Totals	100	7.27%		100	11.28%		
Cash	-			-			
Fixed-Income	60.00			10.00			
Equity	30.00			70.00			
Alternate Investments	10.00			20.00			
Total	100.00			100.00			

Morningstar/Ibbotson Associates Capital Market Expectations Data as of February 14, 2013



Asset Class	Expected Return %	Standard Deviation
Inflation	2.52	4.13
US Large Cap Growth	8.64	21.95
US Large Cap Value	10.02	17.48
US Mid Cap Growth	10.82	23.42
US Mid Cap Value	12.94	19.35
US Small Cap Growth	10.26	27.82
US Small Cap Value	13.81	22.78
Non-US Dev Stk	10.85	21.05
Non-US Emrg Stk	15.44	31.52
US Txbl Long Term Bonds	4.79	10.67
US Txbl Int Term Bonds	3.33	5.22
US Txbl Short Term Bonds	2.70	4.27
US Infl Protected Bonds	3.57	7.03
US Tax-Exempt Bonds	4.06	7.99
US High Yield Bonds	8.34	14.89
Non-US Dev Bonds	3.80	10.56
Non-US Emrg Bonds	7.94	15.17
Cash	1.98	3.51
Real Estate	9.07	23.14
Commodities	6.80	19.75

Morningstar/Ibbotson Associates Capital Market Expectations Data as of February 14, 2013



Asset Class	US Large Cap Growth	US Large Cap Value	US Mid Cap Growth
US Large Cap Growth	1.0000	0.8310	0.9128
US Large Cap Value	0.8310	1.0000	0.8055
US Mid Cap Growth	0.9128	0.8055	1.0000
US Mid Cap Value	0.7458	0.9336	0.7946
US Small Cap Growth	0.8543	0.8051	0.9501
US Small Cap Value	0.6719	0.8549	0.7595
Non-US Dev Stk	0.6937	0.7321	0.7002
Non-US Emrg Stk	0.5762	0.5523	0.6190
US Txbt Long Term Bonds	0.1084	0.1894	0.0698
US Txbt Int Term Bonds	0.0763	0.1736	0.0311
US Txbt Short Term Bonds	0.0473	0.1378	0.0047
US Infl Protected Bonds	0.1315	0.1691	0.1167
US Tax-Exempt Bonds	0.1354	0.2470	0.1074
US High Yield Bonds	0.5685	0.6346	0.5740
Non-US Dev Bonds	0.0459	0.0470	0.0139
Non-US Emrg Bonds	0.4500	0.4812	0.4540
Cash	0.0402	0.0672	-0.0042
Real Estate	0.4895	0.7096	0.5659
Commodities	-0.0262	-0.0024	0.0020

Morningstar/Ibbotson Associates Capital Market Expectations Data as of February 14, 2013



Asset Class	US Mid Cap Value	US Small Cap Growth	US Small Cap Value
US Large Cap Growth	0.7458	0.8543	0.6719
US Large Cap Value	0.9336	0.8051	0.8549
US Mid Cap Growth	0.7946	0.9501	0.7595
US Mid Cap Value	1.0000	0.8312	0.9365
US Small Cap Growth	0.8312	1.0000	0.8687
US Small Cap Value	0.9365	0.8687	1.0000
Non-US Dev Stk	0.7232	0.6804	0.6369
Non-US Emrg Stk	0.5781	0.6217	0.5460
US Txbl Long Term Bonds	0.2052	0.0555	0.1074
US Txbl Int Term Bonds	0.1808	0.0141	0.0793
US Txbl Short Term Bonds	0.1387	-0.0032	0.0621
US Infl Protected Bonds	0.2104	0.0993	0.1318
US Tax-Exempt Bonds	0.2923	0.0835	0.1672
US High Yield Bonds	0.7130	0.5837	0.6285
Non-US Dev Bonds	0.0277	-0.0190	-0.0365
Non-US Emrg Bonds	0.5245	0.4709	0.4824
Cash	0.0164	-0.0154	0.0098
Real Estate	0.7955	0.6302	0.8109
Commodities	0.0332	-0.0170	0.0021

Morningstar/Ibbotson Associates Capital Market Expectations Data as of February 14, 2013



Asset Class	Non-US Dev Stk	Non-US Emrg Stk	US Txbi Long Term Bonds
US Large Cap Growth	0.6937	0.5762	0.1084
US Large Cap Value	0.7321	0.5523	0.1894
US Mid Cap Growth	0.7002	0.6190	0.0698
US Mid Cap Value	0.7232	0.5781	0.2052
US Small Cap Growth	0.6804	0.6217	0.0555
US Small Cap Value	0.6369	0.5460	0.1074
Non-US Dev Stk	1.0000	0.6500	0.1138
Non-US Emrg Stk	0.6500	1.0000	-0.1653
US Txbi Long Term Bonds	0.1138	-0.1653	1.0000
US Txbi Int Term Bonds	0.0993	-0.1804	0.9008
US Txbi Short Term Bonds	0.0437	-0.2047	0.7428
US Infl Protected Bonds	0.1095	-0.0436	0.7633
US Tax-Exempt Bonds	0.1821	-0.0103	0.7776
US High Yield Bonds	0.5514	0.4519	0.3730
Non-US Dev Bonds	0.3787	-0.0586	0.4484
Non-US Emrg Bonds	0.3460	0.4082	0.4340
Cash	-0.0008	-0.1146	-0.0061
Real Estate	0.5782	0.4167	0.1801
Commodities	0.1228	0.1753	-0.2356

Morningstar/Ibbotson Associates Capital Market Expectations Data as of February 14, 2013



Asset Class	US Txbi Int Term Bonds	US Txbi Short Term Bonds	US Infl Protected Bonds
US Large Cap Growth	0.0763	0.0473	0.1315
US Large Cap Value	0.1736	0.1378	0.1691
US Mid Cap Growth	0.0311	0.0047	0.1167
US Mid Cap Value	0.1808	0.1387	0.2104
US Small Cap Growth	0.0141	-0.0032	0.0993
US Small Cap Value	0.0793	0.0621	0.1318
Non-US Dev Stk	0.0993	0.0437	0.1095
Non-US Emrg Stk	-0.1804	-0.2047	-0.0436
US Txbi Long Term Bonds	0.9008	0.7428	0.7633
US Txbi Int Term Bonds	1.0000	0.9177	0.8041
US Txbi Short Term Bonds	0.9177	1.0000	0.7125
US Infl Protected Bonds	0.8041	0.7125	1.0000
US Tax-Exempt Bonds	0.7376	0.6164	0.6673
US High Yield Bonds	0.3935	0.2929	0.4668
Non-US Dev Bonds	0.4692	0.3817	0.3732
Non-US Emrg Bonds	0.4816	0.4606	0.4507
Cash	0.1936	0.4132	-0.0216
Real Estate	0.1532	0.0727	0.2094
Commodities	-0.1437	-0.1153	-0.0066

Morningstar/Ibbotson Associates Capital Market Expectations Data as of February 14, 2013



Asset Class	US Tax-Exempt Bonds	US High Yield Bonds	Non-US Dev Bonds
US Large Cap Growth	0.1354	0.5685	0.0459
US Large Cap Value	0.2470	0.6346	0.0470
US Mid Cap Growth	0.1074	0.5740	0.0139
US Mid Cap Value	0.2923	0.7130	0.0277
US Small Cap Growth	0.0835	0.5837	-0.0190
US Small Cap Value	0.1672	0.6285	-0.0365
Non-US Dev Stk	0.1821	0.5514	0.3787
Non-US Emrg Stk	-0.0103	0.4519	-0.0586
US Txbt Long Term Bonds	0.7776	0.3730	0.4484
US Txbt Int Term Bonds	0.7376	0.3935	0.4692
US Txbt Short Term Bonds	0.6164	0.2929	0.3817
US Infl Protected Bonds	0.6673	0.4668	0.3732
US Tax-Exempt Bonds	1.0000	0.4660	0.3112
US High Yield Bonds	0.4660	1.0000	0.1371
Non-US Dev Bonds	0.3112	0.1371	1.0000
Non-US Emrg Bonds	0.4474	0.6580	-0.0097
Cash	-0.0014	-0.0468	-0.0737
Real Estate	0.2041	0.6309	0.0895
Commodities	-0.0290	0.0734	0.0605

Morningstar/Ibbotson Associates Capital Market Expectations Data as of February 14, 2013



Asset Class	Non-US Emrg Bonds	Cash	Real Estate	Commodities
US Large Cap Growth	0.4500	0.0402	0.4895	-0.0262
US Large Cap Value	0.4812	0.0672	0.7096	-0.0024
US Mid Cap Growth	0.4540	-0.0042	0.5659	0.0020
US Mid Cap Value	0.5245	0.0164	0.7955	0.0332
US Small Cap Growth	0.4709	-0.0154	0.6302	-0.0170
US Small Cap Value	0.4824	0.0098	0.8109	0.0021
Non-US Dev Stk	0.3460	-0.0008	0.5782	0.1228
Non-US Emrg Stk	0.4082	-0.1146	0.4167	0.1753
US Txbl Long Term Bonds	0.4340	-0.0061	0.1801	-0.2356
US Txbl Int Term Bonds	0.4816	0.1936	0.1532	-0.1437
US Txbl Short Term Bonds	0.4606	0.4132	0.0727	-0.1153
US Infl Protected Bonds	0.4507	-0.0216	0.2094	-0.0066
US Tax-Exempt Bonds	0.4474	-0.0014	0.2041	-0.0290
US High Yield Bonds	0.6580	-0.0468	0.6309	0.0734
Non-US Dev Bonds	-0.0097	-0.0737	0.0895	0.0605
Non-US Emrg Bonds	1.0000	0.1903	0.3877	-0.0336
Cash	0.1903	1.0000	-0.0422	0.0284
Real Estate	0.3877	-0.0422	1.0000	0.1145
Commodities	-0.0336	0.0284	0.1145	1.0000

Conclusions



- First and foremost, determine the level of risk you can tolerate in your portfolio
- Incorporate consideration of “Black Swan” risk events into your planning as well as traditional measures of financial risk
- Determine a strategic (long-term) asset allocation based on historical performance of asset classes and expectations consistent with your risk tolerance
- Attempt active management, if at all, including tactical asset allocation and security selection only after determining and implementing the strategic asset allocation, and not exceeding your risk tolerance
- Rebalance to reflect changes in the market and your risk tolerance, and changes in asset prices

Questions?



Bob is available for a free, no-obligation initial consultation and portfolio review, or just to answer your specific questions about this presentation and help you with the available resources.

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