Asset Allocation: Diversification Primer

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STRATEGIC ASSET ALLIANCE

THE INSURANCE INVESTMENT SPECIALIST

Diversification Overview

- Diversification is an investment strategy meant to mitigate various risks by utilizing various asset classes within a portfolio.

- The goal of utilizing various asset is to achieve higher long-term returns (on average), while reducing the risk of exposure to an individual holding or security.

- By design, most insurance company and risk pooling portfolios are never fully diversified:
  - A majority of the portfolio is allocated towards investment-grade fixed income to account for policy holder obligations, reserves and sufficient risk capital.

  - Thus, most diversification is conducted through 'Risk Assets,' such as High-Yield Bonds, Equities and certain long-term Schedule Ba investments, such as Bank Loans.

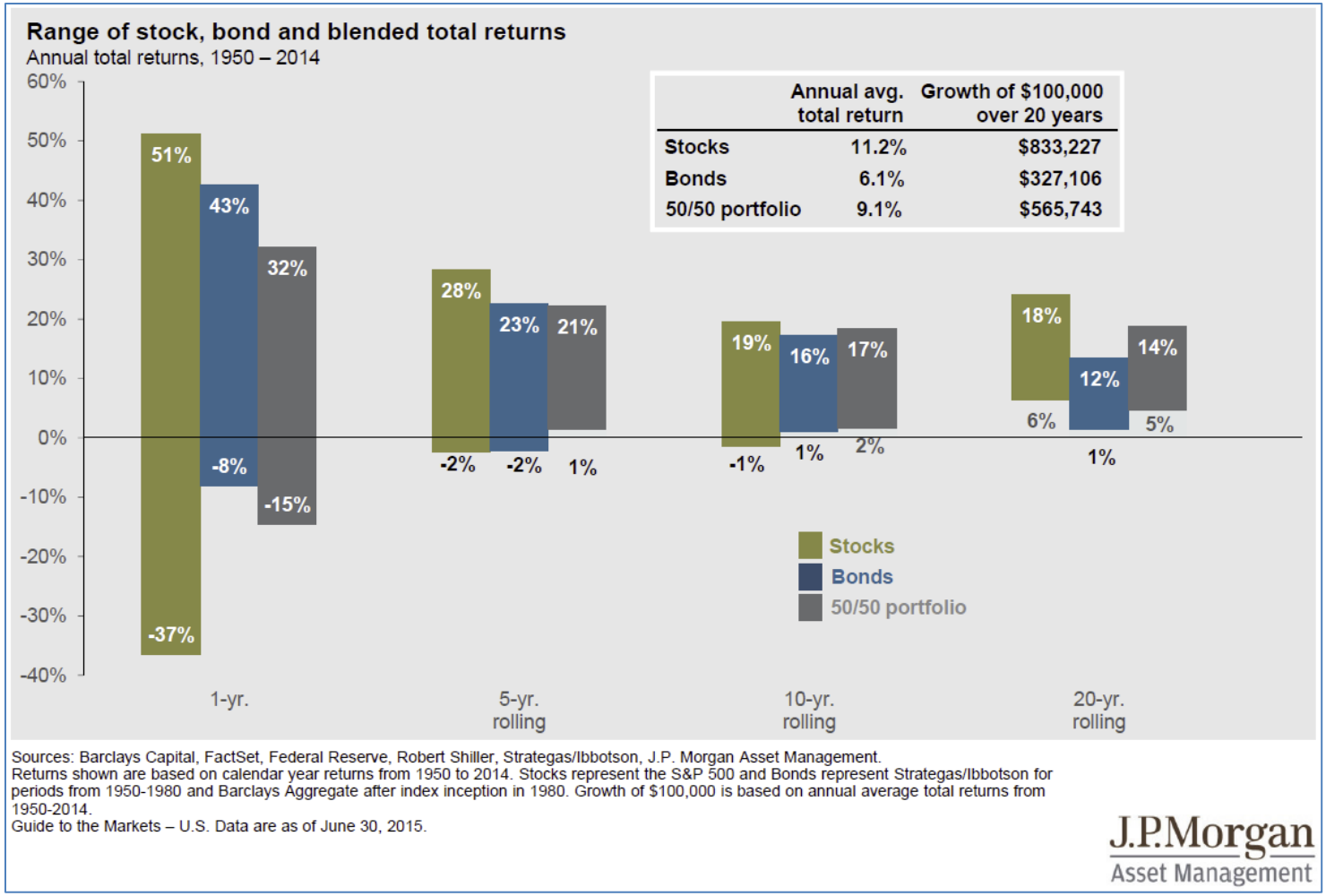
Potential Advantages and Disadvantages

- Primary Advantages:
  - Higher expected portfolio returns over the long-term.
  - Typically reduces overall portfolio volatility.

- Primary Disadvantages:
  - Historically, the volatility of equity returns is approximately 5x higher than core fixed income
    - *Which, by definition, may increase the volatility of financial statements.*

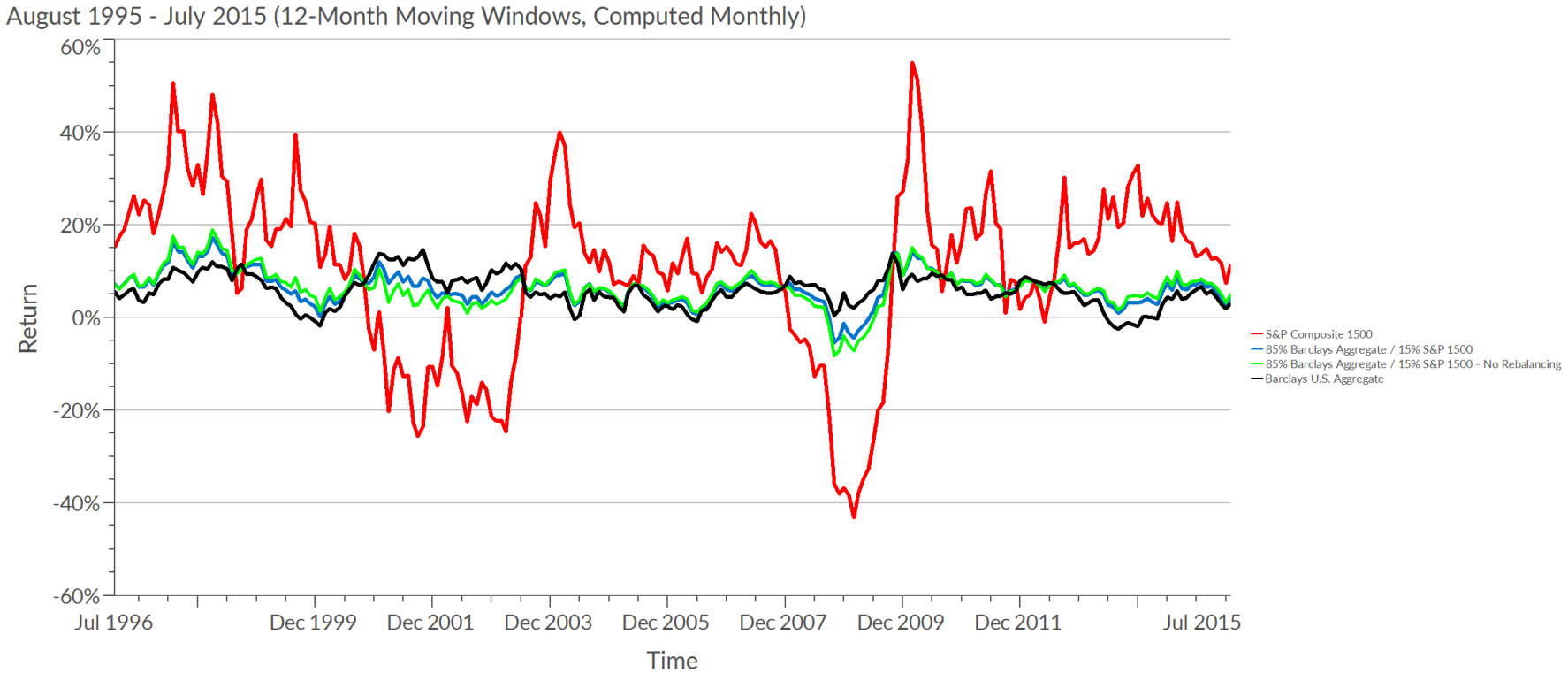
ADVANTAGES

Risk, Return & Time



Generally, the diversification benefits of riskier, higher return asset classes accrue over time and the investment horizon (along with risk appetite) is critical when considering a potential allocation away from high quality fixed income.

Risk vs. Reward – 20 Years (Equity vs. Fixed Income)

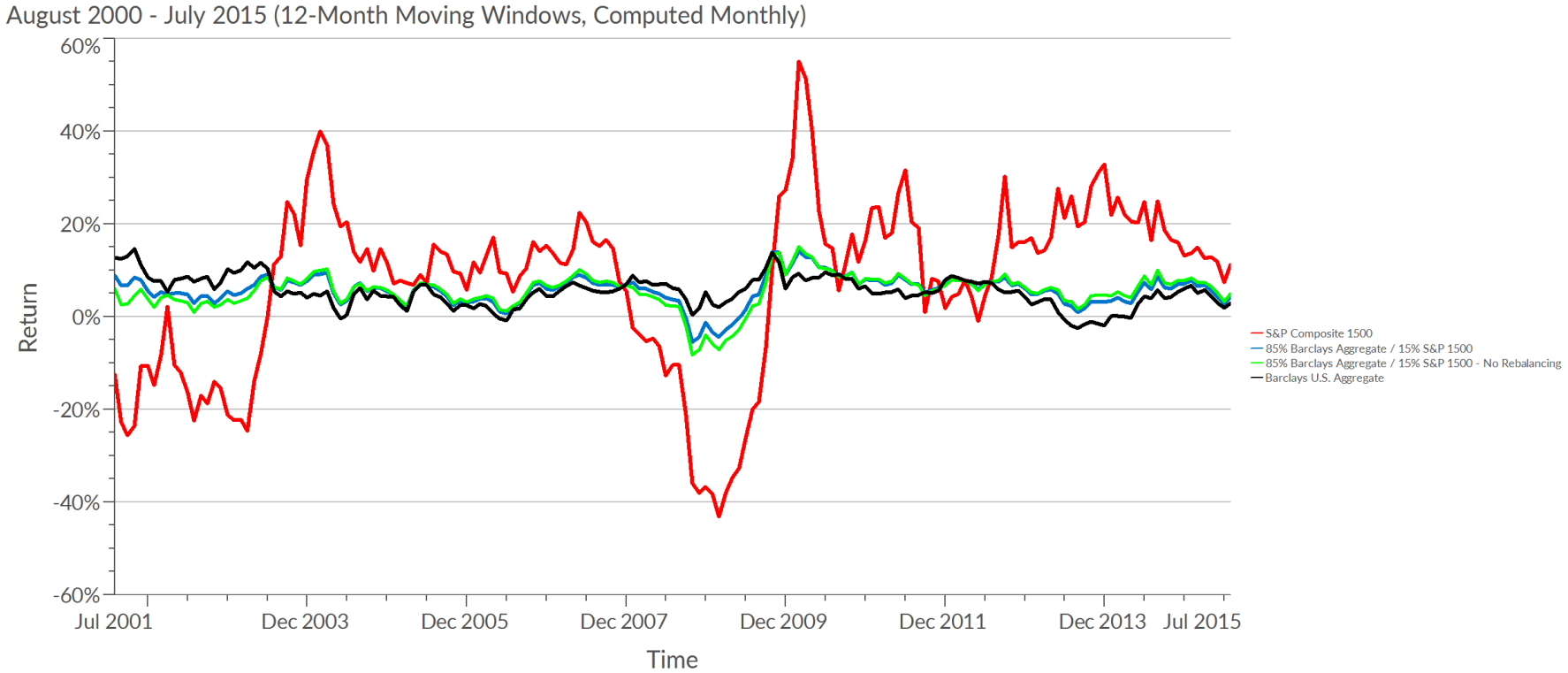


Custom Table
August 1995 - July 2015: Summary Statistics

	Return	Standard Deviation	Sharpe Ratio	Maximum Drawdown
S&P Composite 1500	9.08%	15.28%	0.43	-50.84%
85% Barclays Aggregate / 15% S&P 1500	6.40%	3.63%	1.06	-7.43%
85% Barclays Aggregate / 15% S&P 1500 - No Rebalancing	6.36%	4.10%	0.93	-9.03%
Barclays U.S. Aggregate	5.67%	3.49%	0.90	-3.83%

In thinking of disadvantages and to gauge risk appetite, this analysis looks to highlight the rolling annual return for fixed income, equity and an 85/15 blend over time with the shape of the line highlighting relative volatility.

Risk vs. Reward – 15 Years (Equity vs. Fixed Income)



Custom Table
August 2000 - July 2015: Summary Statistics

	Return	Standard Deviation	Sharpe Ratio	Maximum Drawdown
S&P Composite 1500	5.12%	15.24%	0.23	-50.84%
85% Barclays Aggregate / 15% S&P 1500	5.60%	3.44%	1.14	-7.43%
85% Barclays Aggregate / 15% S&P 1500 - No Rebalancing	5.33%	3.81%	0.96	-9.03%
Barclays U.S. Aggregate	5.40%	3.52%	1.06	-3.83%

In thinking of disadvantages and to gauge risk appetite, this analysis looks to highlight the rolling annual return for fixed income, equity and an 85/15 blend over time with the shape of the line highlighting relative volatility.

Example: Fixed Income Only Portfolio vs Diversified Portfolio

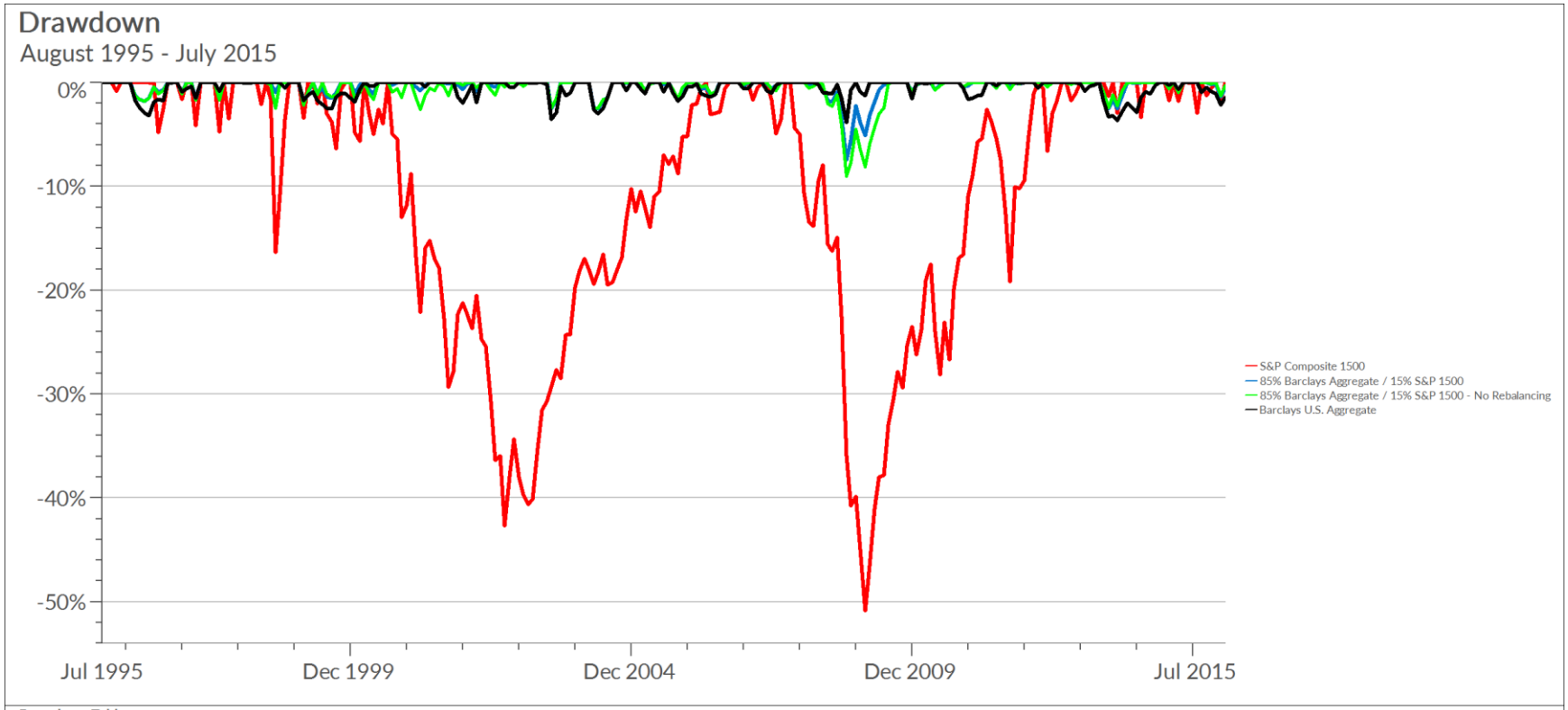
$ 46,114,834 Starting Portfolio	Prospective 3 Years	Prospective 5 Years	Prospective 10 Years
Fixed Income Only Portfolio	5.67%	5.67%	5.67%
Diversified Portfolio - 85% Fixed Income / 15% Equity*	6.40%	6.40%	6.40%
Difference Fixed Only vs. Diversified (%)	-0.73%	-0.73%	-0.73%
Portfolio Value - Fixed Income Only ($)	$ 54,412,136	$ 60,757,401	$ 80,049,334
Portfolio Value - Diversified Portfolio ($)	$ 55,547,630	$ 62,885,250	$ 85,754,502
Difference Fixed Income Only vs. Diversified ($)	$ (1,135,494)	$ (2,127,849)	$ (5,705,168)

- Using historical returns from 1985 to 2015 (and assuming the same prospective), the table above compares expected annual returns of two sample portfolios over the prospective 3, 5, and 10 periods to show the potential dollar impact.

*Using annualized returns for the 20-year period ending in 2015

DISADVANTAGES

Drawdown – 20 Years (Equity vs. Fixed Income)

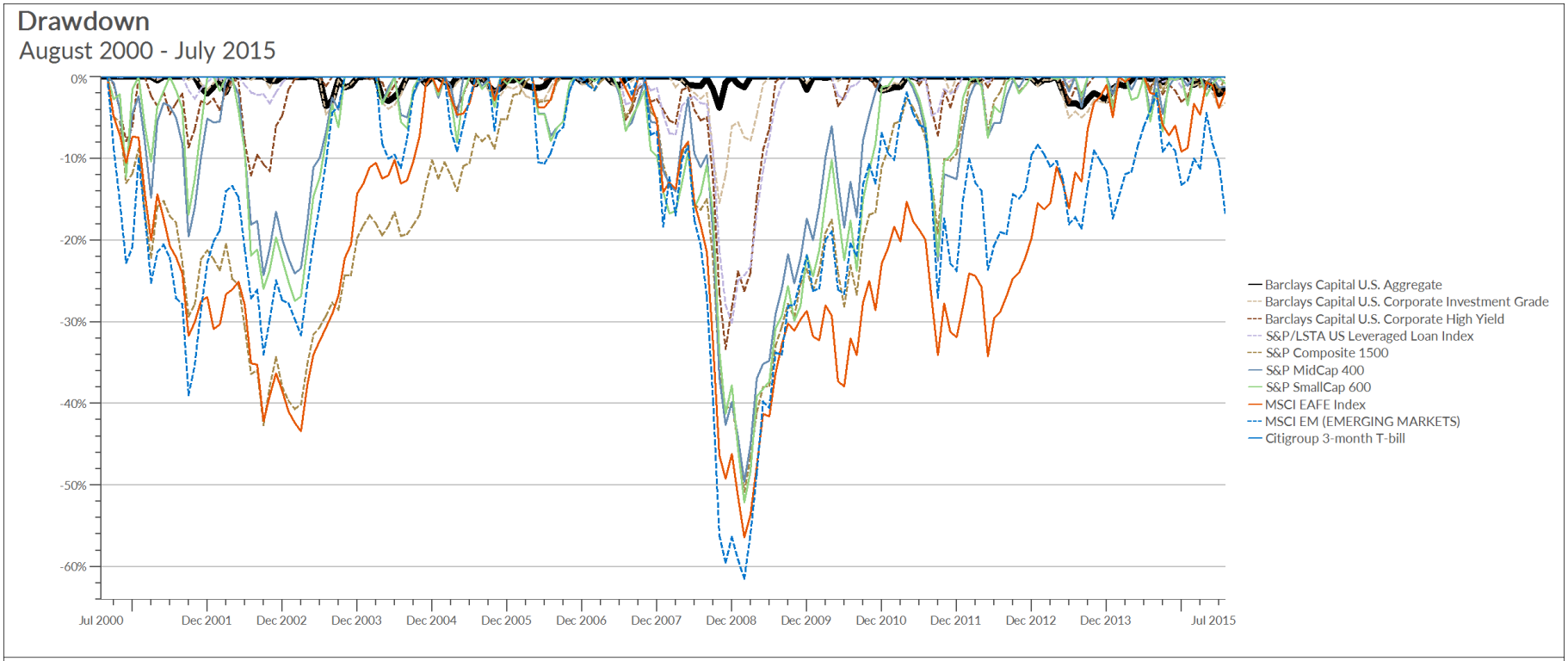


Drawdown Table
August 1995 - July 2015: Summary Statistics

	Return	Standard Deviation	Sharpe Ratio	# of Up Periods	# of Down Periods	Average Up Return	Average Down Return	Max Drawdown	Gain to Loss Ratio	Max Uninterrupted Loss	Max Uninterrupted Loss Length
S&P Composite 1500	9.08%	15.28%	0.43	152	88	3.44%	-3.69%	-50.84%	0.93	-30.39%	3
85% Barclays Aggregate / 15% S&P 1500	6.40%	3.63%	1.06	174	66	1.00%	-0.73%	-7.43%	1.37	-6.61%	2
85% Barclays Aggregate / 15% S&P 1500 - No Rebalancing	6.36%	4.10%	0.93	175	65	1.06%	-0.93%	-9.03%	1.14	-7.90%	2
Barclays U.S. Aggregate	5.67%	3.49%	0.90	165	75	0.99%	-0.68%	-3.83%	1.45	-3.67%	2

- In thinking of disadvantages and to gauge risk appetite, the drawdown analysis looks to highlight periods of negative returns. Although equities outperformed fixed income by 3.41% over twenty years, it was a bumpy ride.
- However, an 85/15 diversified portfolio outperformed by 0.73% with volatility similar to 100% fixed income.

Asset Class Drawdown (15 Years)



Drawdown Table

August 2000 - July 2015: Summary Statistics

	Return	Standard Deviation	Sharpe Ratio	# of Up Periods	# of Down Periods	Average Up Return	Average Down Return	Max Drawdown	Max Drawdown Length	Longest Drawdown	Gain to Loss Ratio
Barclays Capital U.S. Aggregate	5.40%	3.52%	1.06	125	55	0.96%	-0.72%	-3.83%	7	-3.83%	1.33
Barclays Capital U.S. Corporate Investment Grade	6.26%	5.72%	0.80	124	56	1.30%	-1.20%	-15.42%	8	-2.85%	1.08
Barclays Capital U.S. Corporate High Yield	7.65%	10.01%	0.60	125	55	1.96%	-2.31%	-33.31%	18	-33.31%	0.85
S&P/LSTA US Leveraged Loan Index	4.96%	6.71%	0.49	144	36	0.95%	-1.68%	-30.08%	18	-30.08%	0.56
S&P Composite 1500	5.12%	15.24%	0.23	112	68	3.17%	-3.86%	-50.84%	16	-42.67%	0.82
S&P MidCap 400	9.22%	17.50%	0.43	110	70	3.95%	-3.98%	-49.62%	21	-49.62%	0.99
S&P SmallCap 600	9.81%	18.93%	0.43	112	68	4.24%	-4.51%	-52.15%	21	-52.15%	0.94
MSCI EAFE Index	4.08%	17.29%	0.14	104	76	3.72%	-4.00%	-56.40%	16	-43.43%	0.93
MSCI EM (EMERGING MARKETS)	8.06%	22.92%	0.28	104	76	5.21%	-5.06%	-61.44%	16	-61.44%	1.03
Citigroup 3-month T-bill	1.69%	0.54%	0.00	180	0	0.14%	0.00%	0.00%	0	0.00%	N/A