



Wyoming Association of Municipalities

October 28th , 2016

Current outlook

- World GDP growth remains subdued, currently in the 1.75% range. Forecasts and recent global data are projecting a slight upswing from depressed levels.
- US GDP growth remains stuck in the 2% range.
- Approximately 30% of total global developed debt is trading with negative yields.
- This causes global real yields to be lower than normal.
- Investors are reaching for yield. Spanish 50 year debt = 2.5%. Ireland and Belgium issued 100 year debt at 2.35%.
- US bonds traded at all-time low yields while S&P 500 traded at all-time highs. This has never happened before.
- US election is creating uncertainties as both candidates have differing agendas.
- The market is forecasting a 73% chance of a Fed rate hike by December.

Fixed Income Valuations and Forward-Looking Returns

Fixed Income:

Forward-Looking Return and Risk Assumptions

RVK Long-Term US Fixed Income (10-20 Years):

Arithmetic Return	Standard Deviation	Compound Return	Sharpe Ratio (0.90% risk-free rate)
3.50%	6.00%	3.33%	0.43

Vanguard Long-Term US Fixed Income (10 Years):

Arithmetic Return	Standard Deviation	Compound Return	Sharpe Ratio (0.90% risk-free rate)
2.30%	4.50%	2.20%	0.31

RVK assumption is for US Intermediate Duration Fixed Income.

Sharpe Ratios using RVK's assumed risk-free rate of 2.25% are 0.21 for RVK's assumption and 0.01 for Vanguard's assumption.

Fixed Income:

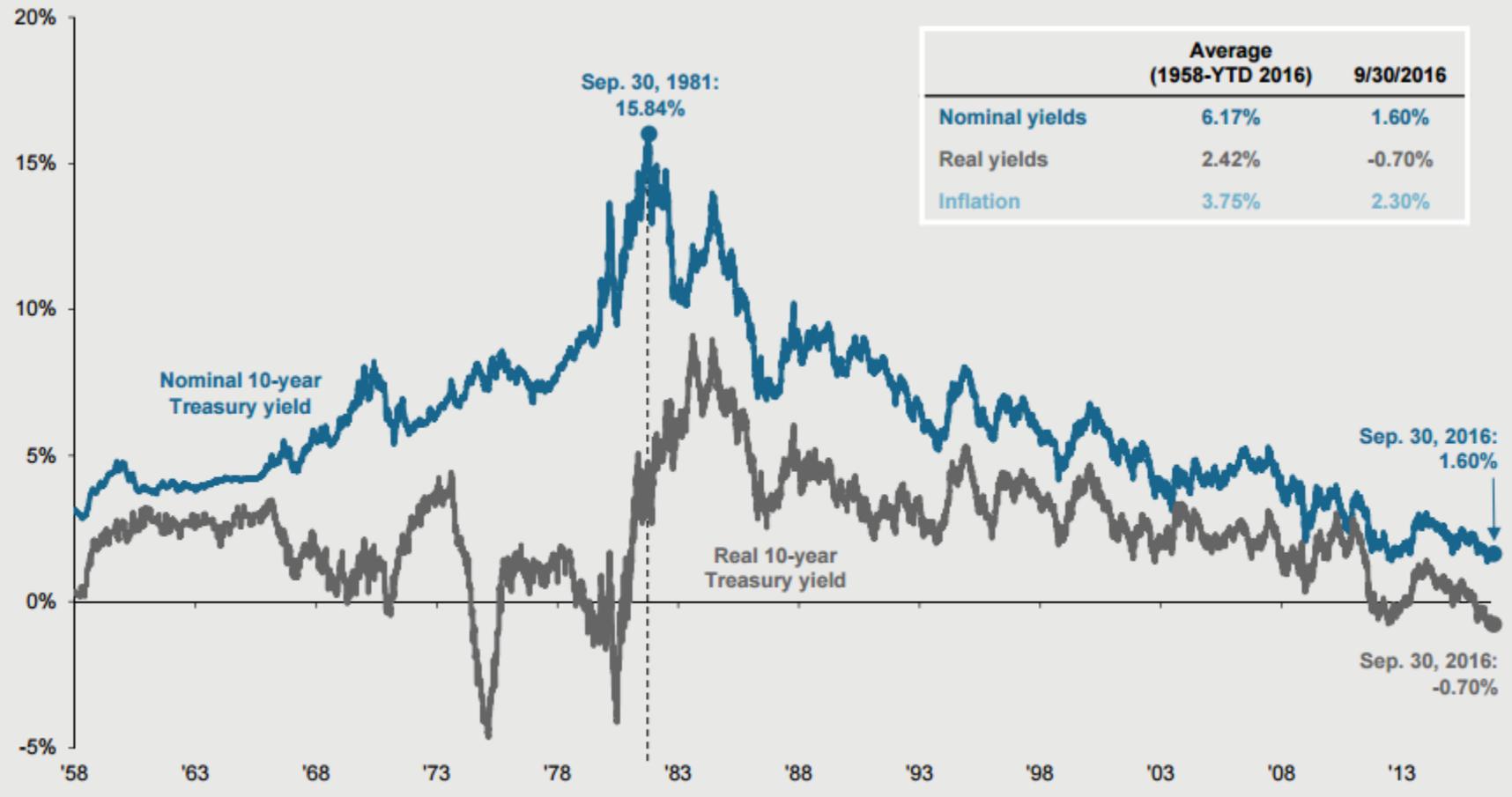
5 Year Treasury Yields: 1980 – Present

The average return for the Barclay Aggregate = 7.5%



“In order for bonds to replicate the 7.5% returns for the next 40 years, interest rates would need to go to -17%.” Bill Gross

Nominal and real 10-year Treasury yields



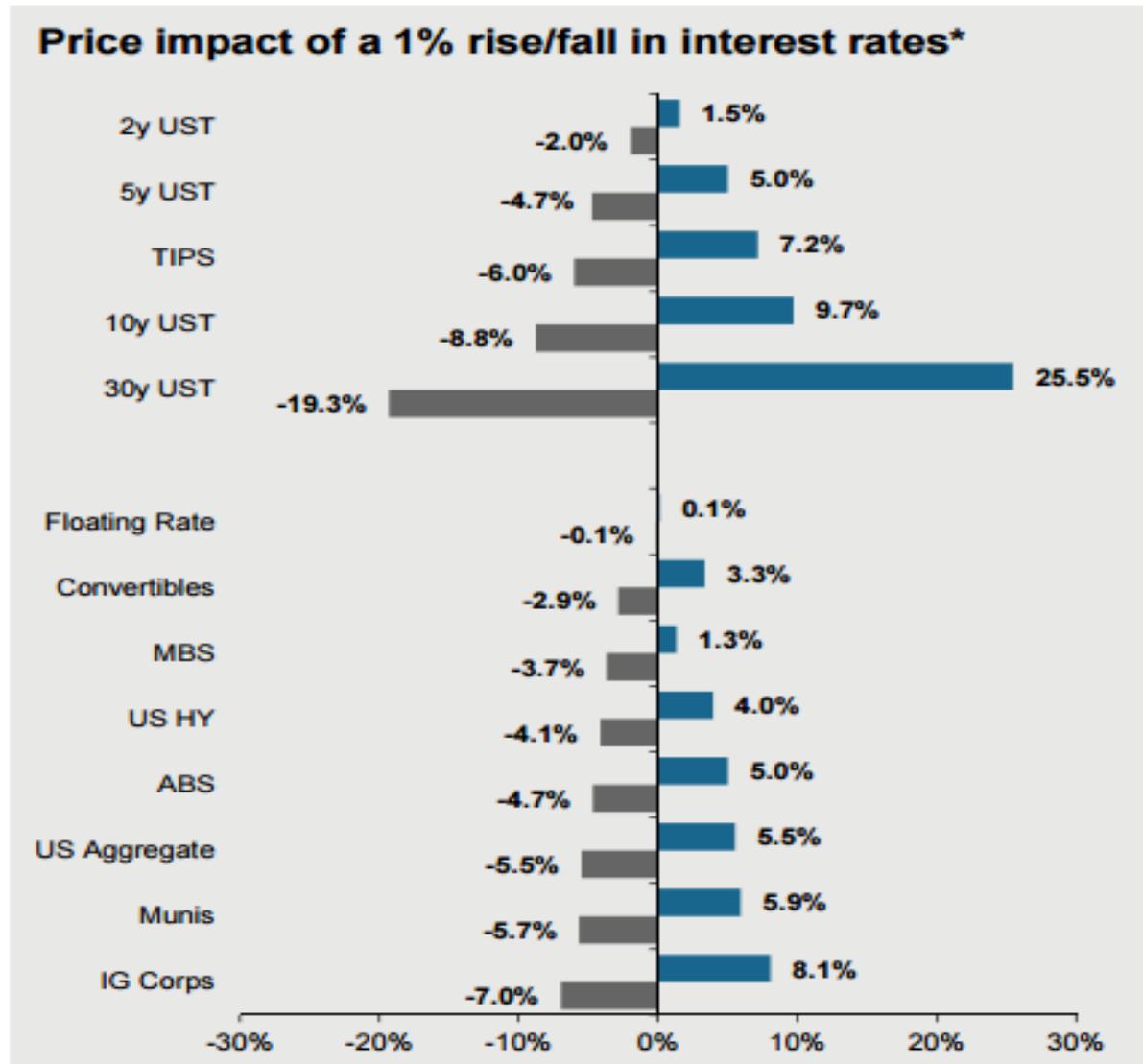
Source: BLS, Federal Reserve, J.P. Morgan Asset Management.

Real 10-year Treasury yields are calculated as the daily Treasury yield less year-over-year core CPI inflation for that month except for September 2016, where real yields are calculated by subtracting out August 2016 year-over-year core inflation.

Guide to the Markets – U.S. Data are as of September 30, 2016.

J.P.Morgan
Asset Management

As Interest rates approach zero, bonds are becoming increasingly risky.

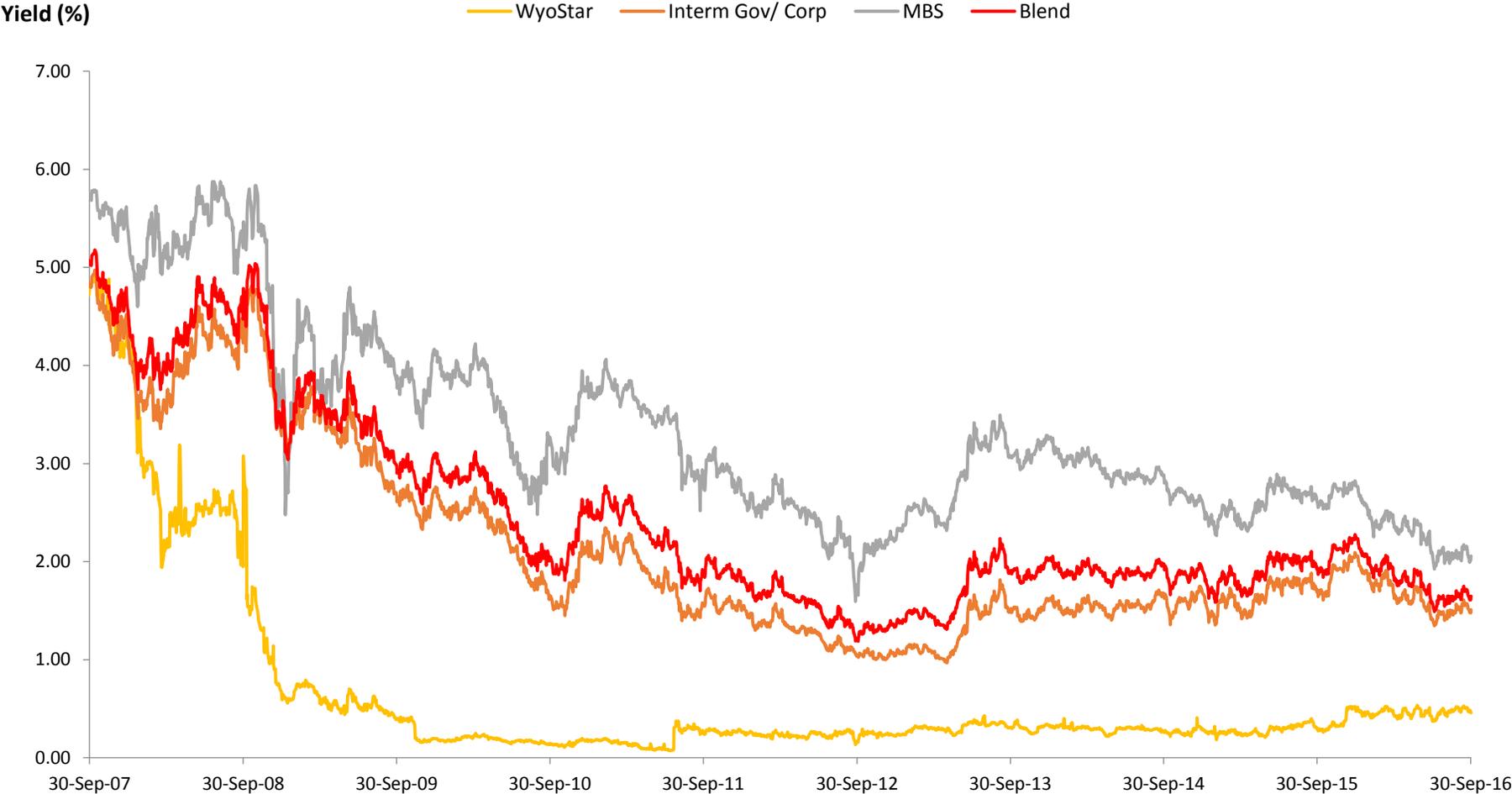


WyoStar II

Overview of Options

Strategy	Duration (years)	Yield	Returns			
			1 Year	3 Years	5 Years	10 Years
WyoStar	0.64	0.49%	0.54%	0.44%	0.38%	1.51%
Barclay's US Intermediate Govt/ Credit	4.09	1.51%	3.52%	2.80%	2.45%	4.17%
Barclay's US MBS Index	2.50	2.06%	3.61%	3.61%	2.65%	4.65%
Blend: 75% Intermediate Government/ Credit Index & 25% US MBS	3.69	1.65%	3.54%	3.00%	2.50%	4.29%

Historical Yields



Blend = 75% Intermediate Government/ Credit Index & 25% U.S. MBS

Source: Barclays LIVE; Data as of 9/30/16

Risk Return spectrum

All data as of 30 September 2016

WyoStar

Duration (years)	0.64
Yield (%)	0.49
Rating	AA
Total rate of return	
1 Year	0.54
3 Years	0.44
5 Years	0.38
10 Years	1.51
StDev*	0.60

Barclay's US Intermediate Govt/ Credit

Duration (years)	4.09
Yield (%)	1.51
Rating	AA
Total rate of return	
1 Year	3.52
3 Years	2.80
5 Years	2.45
10 Years	4.17
StDev*	2.80

Barclay's US MBS

Duration (years)	2.50
Yield (%)	2.06
Rating	AAA
Total rate of return	
1 Year	3.61
3 Years	3.61
5 Years	2.65
10 Years	4.65
StDev*	2.49

Blend: 75% Intermediate Government/ Credit Index & 25% US MBS

Duration (years)	3.69
Yield (%)	1.65
Rating	AA+
Total rate of return	
1 Year	3.54
3 Years	3.00
5 Years	2.50
10 Years	4.29
StDev*	2.72

Frequency of negative returns (rolling)	
1 Month	19.17%
3 Months	3.33%
1 Year	0.00%
Avg 1M Negative Return	(0.03)
Avg 3M Negative Return	(0.04)
Avg 1Y Negative Return	-

Frequency of negative returns (rolling)	
1 Month	34.17%
3 Months	20.00%
1 Year	6.67%
Avg 1M Negative Return	(0.48)
Avg 3M Negative Return	(0.82)
Avg 1Y Negative Return	(0.44)

Frequency of negative returns (rolling)	
1 Month	24.17%
3 Months	16.67%
1 Year	6.67%
Avg 1M Negative Return	(0.44)
Avg 3M Negative Return	(0.61)
Avg 1Y Negative Return	(1.16)

Frequency of negative returns (rolling)	
1 Month	31.67%
3 Months	19.17%
1 Year	6.67%
Avg 1M Negative Return	(0.47)
Avg 3M Negative Return	(0.77)
Avg 1Y Negative Return	(0.62)

Benchmark returns (rolling)			
Period	Worst	Average	Best
3 Months	-0.07	0.39	1.62
6 Months	-0.02	0.81	3.13
1 Year	0.08	1.73	5.86
2 Years	0.25	1.89	5.55
3 Years	0.28	1.98	4.86
5 Years	0.36	2.15	3.79
10 Years	1.51	2.94	4.32

Benchmark returns (rolling)			
Period	Worst	Average	Best
3 Months	-2.73	1.06	5.88
6 Months	-3.32	2.16	7.10
1 Year	1.06	4.29	12.03
2 Years	0.84	4.23	9.90
3 Years	1.10	4.21	7.63
5 Years	2.30	4.43	6.16
10 Years	3.94	4.88	6.11

Benchmark returns (rolling)			
Period	Worst	Average	Best
3 Months	-2.57	1.17	5.86
6 Months	-2.22	2.40	8.29
1 Year	-2.37	4.82	12.05
2 Years	0.57	4.78	8.98
3 Years	1.85	4.78	8.29
5 Years	2.63	4.95	6.98
10 Years	4.56	5.40	6.69

Benchmark returns (rolling)			
Period	Worst	Average	Best
3 Months	-2.69	1.09	5.88
6 Months	-3.04	2.22	7.40
1 Year	-1.39	4.42	12.03
2 Years	0.77	4.36	9.67
3 Years	1.29	4.35	7.79
5 Years	2.39	4.56	6.37
10 Years	4.09	5.01	6.26

Above data is based on 120 monthly observations. * Annualized standard deviation of monthly returns on a trailing 10-year basis.

WyoStar vs. Blended Option

Portfolio A = WyoStar

Portfolio B = Blend (75% Intermediate Govt/ Credit & 25% US MBS)

Risk and Return Analysis

Ten years ended Sep 30, 2016

Portfolio Statistics:	Portfolio A	Portfolio B
Duration (yrs)	0.64	3.69
Yield (%)	0.49	1.65
Credit Quality	AA	AA+

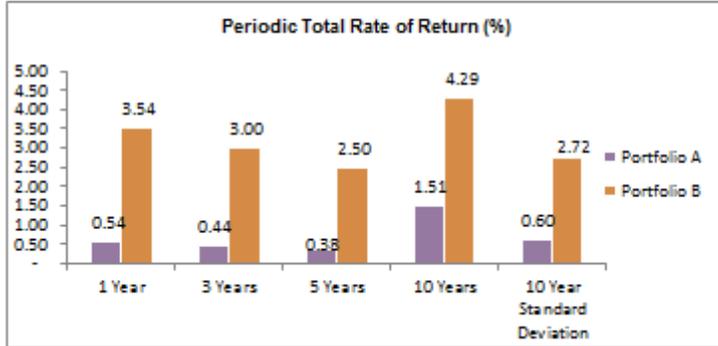
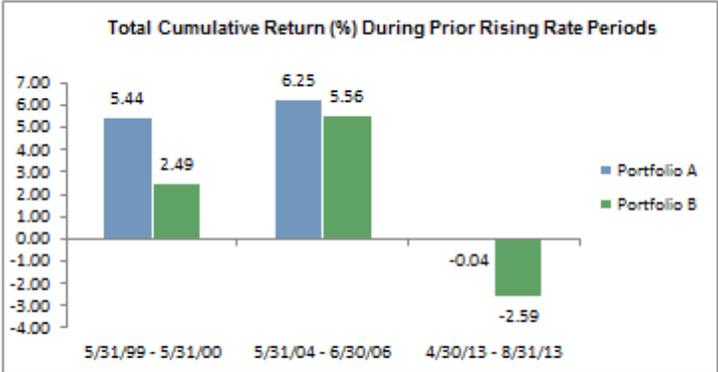
Total Cumulative Return (%) During Prior Rising Rate Periods:	Portfolio A	Portfolio B
5/31/99 - 5/31/00	5.44	2.49
5/31/04 - 6/30/06	6.25	5.56
4/30/13 - 8/31/13	-0.04	-2.59

Total Rate of Return (%)	Portfolio A	Portfolio B
1 Year	0.54	3.54
3 Years	0.44	3.00
5 Years	0.38	2.50
10 Years	1.51	4.29
10 Year Standard Deviation	0.60	2.72

Frequency of Negative Returns	Portfolio A	Portfolio B
(Rolling)		
1 Month	19.17%	31.67%
3 Months	3.33%	19.17%
1 Year	0.00%	6.67%
Avg 1M Negative Return	(0.03)	(0.47)
Avg 3M Negative Return	(0.04)	(0.77)
Avg 1Y Negative Return	-	(0.62)

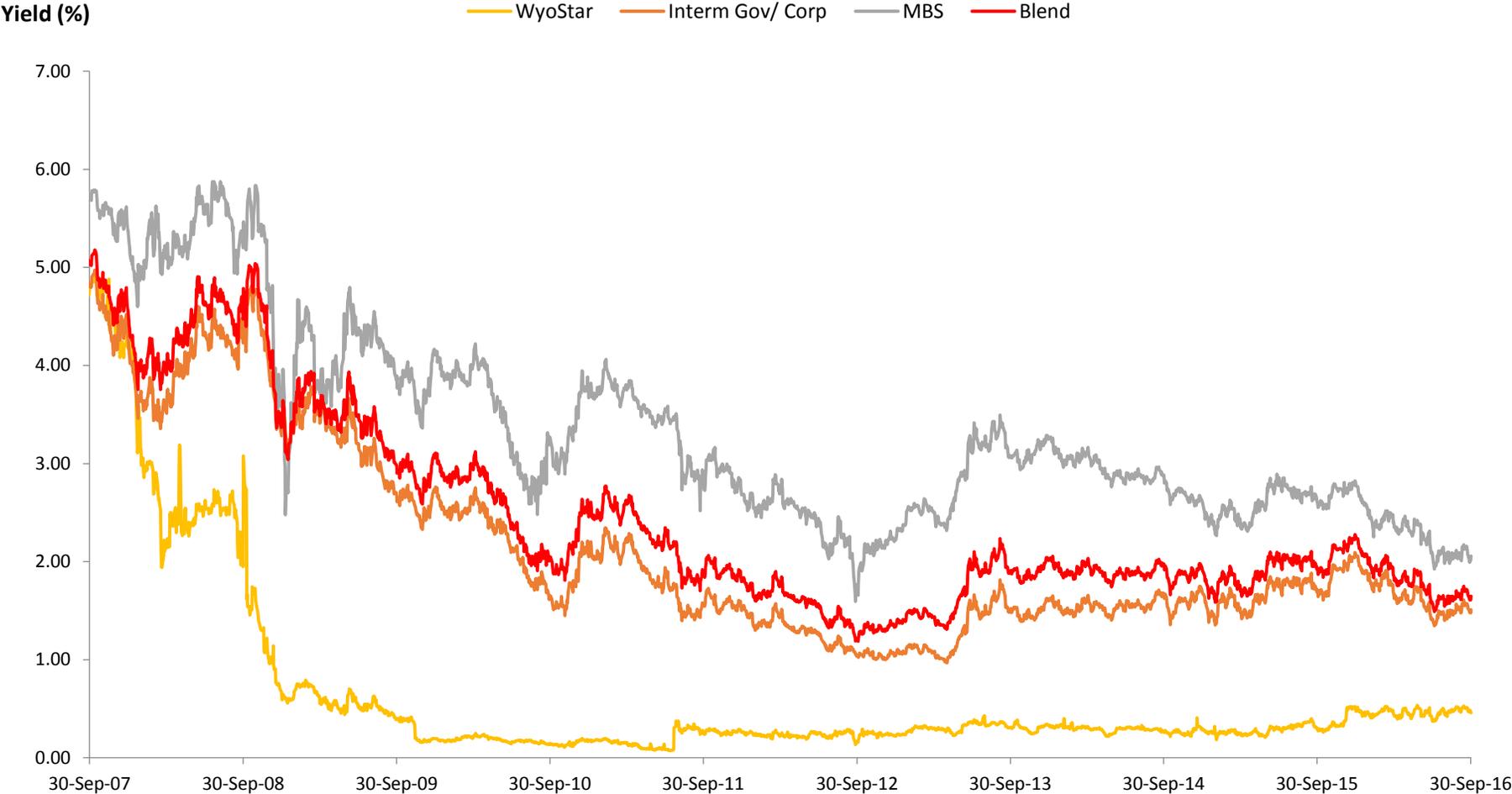
Index Returns - Portfolio A			
(Rolling)			
Period	Worst	Average	Best
3 Months	-0.07	0.39	1.62
6 Months	-0.02	0.81	3.13
1 Year	0.08	1.73	5.86
2 Years	0.25	1.89	5.55
3 Years	0.28	1.98	4.86
5 Years	0.36	2.15	3.79
10 Years	1.51	2.94	4.32

Index Returns - Portfolio B			
(Rolling)			
Period	Worst	Average	Best
3 Months	-2.69	1.09	5.88
6 Months	-3.04	2.22	7.40
1 Year	-1.39	4.42	12.03
2 Years	0.77	4.36	9.67
3 Years	1.29	4.35	7.79
5 Years	2.39	4.56	6.37
10 Years	4.09	5.01	6.26



Source: Barclays LIVE, JPMorgan Asset Management; Data as of 9/30/16

Historical Yields



Blend = 75% Intermediate Government/ Credit Index & 25% U.S. MBS

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