

Wisconsin Deferred Compensation Program

# Intermediate-Term Bond Search

August 30, 2018

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# Search Criteria



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# Investment Option Criteria

- From *Wisconsin Deferred Compensation Program Deferred Compensation Board Investment Policy Statement (dated June 8, 2017)*
- Minimum Criteria for Selecting and Evaluating Mutual Fund and Institutional Product Options
  - Minimum 5 year operating history – may be waived for index funds
  - Manager Tenure not less than 3 years
  - Expense ratio (internal expense charge plus any 12(b)1 fee) not greater than the mean for the appropriate peer group
  - 5-year rolling average performance must equal or exceed appropriate benchmark or index
  - Minimum total asset size of \$400 million – may be waived for certain categories of funds
  - Anticipated WDC assets not greater than 5% of total fund (determined by comparing current WDC asset levels in a comparable fund)
  - No loads of sales charges
  - Not a sector fund

# Initial Results



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## Initial Criteria – per IPS

- |    |                      |    |                        |
|----|----------------------|----|------------------------|
| 1. | Morningstar Category | =  | Intermediate-Term Bond |
| 2. | Inception Date       | <= | 6/30/2013              |
| 3. | Expense Ratio        | <= | Category Average       |
| 4. | 5 Year Total Return  | >= | Category Average       |
| 5. | Total Assets         | >= | \$400 million          |
| 6. | Manager Tenure       | >= | 3 years                |

**Results:** **94 Funds comprising 200 share classes**

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## Additional Criteria

1.	<i>Morningstar Category</i>	=	<i>Intermediate-Term Bond</i>
2.	<i>Inception Date</i>	<=	<i>6/30/2013</i>
3.	<i>Expense Ratio</i>	<=	<i>0.45</i>
4.	<i>5 Year Total Return</i>	>=	<i>30<sup>th</sup> percentile</i>
5.	<i>Total Assets</i>	>=	<i>\$800 million</i>
6.	Manager Tenure	>=	5 years
7.	Prospectus Benchmark	<=	BBgBarc Agg Bond
8.	3 Year Total Return	<=	30 <sup>th</sup> percentile
9.	10 Year Total Return	<=	30 <sup>th</sup> Percentile
10.	Average Credit Quality	>=	BBB
11.	5 Year Downside Capture	<=	90%

### Results:

**9 Funds comprising 11 share classes**

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# Initial Search Results

## Performance Summary: Intermediate-Term Bond Options

period ended 6/30/2018

Bond	Morningstar Category	Ticker Symbol	Fund Name	Overall Rating					Long-Term Rolling Analysis		
				Composite %'s			Overall Morningstar Rating		Consecutive Quarters Below	# of Quarters Below out of trailing 12	
				Overall	Return	Sharpe					
	Intermediate-Term Bond	WAPSX	Western Asset Core Plus Bond IS	96.1	97.7	94.5	5	Above	0	0 out of 12	Pass
	Intermediate-Term Bond	JHBSX	JHancock Bond R6	94.5	95.0	94.0	5	Above	0	0 out of 12	Pass
	Intermediate-Term Bond	WACSX	Western Asset Core Bond IS	91.8	93.7	90.0	5	Above	0	0 out of 12	Pass
	Intermediate-Term Bond	DODIX	Dodge & Cox Income	90.9	88.3	93.5	5	Above	0	0 out of 12	Pass
	Intermediate-Term Bond	TIBFX	TIAA-CREF Bond Plus Inst	88.3	85.7	91.0	5	Above	0	0 out of 12	Pass
	Intermediate-Term Bond	JCPUX	JPMorgan Core Plus Bond R6	87.2	86.3	88.0	5	Above	0	0 out of 12	Pass
	Intermediate-Term Bond	IICIX	Voya Intermediate Bond I	86.8	83.7	90.0	5	Above	0	0 out of 12	Pass
	Intermediate-Term Bond	FTBFX	Fidelity® Total Bond Fund	84.6	85.7	83.5	4	Above	0	0 out of 12	Pass
	Intermediate-Term Bond	BIBTX	Sterling Capital Total Return Bond I	82.5	80.0	85.0	4	Above	0	0 out of 12	Pass

Data Source: Morningstar® Direct<sup>SM</sup>

Please refer to the Appendix page for additional disclosures.



# Fund Statistics

Name	Ticker	Expense Ratio	Fixed Inc Style Box	Morningstar Analyst Rating	YTD Return %ile Rank	1 Year Return %ile Rank	3 Year Return %ile Rank	5 Year Return %ile Rank	10 Year Return %ile Rank	Fund Assets
Dodge & Cox Income	DODIX	0.43	Medium Limited	Gold	26	14	7	9	12	\$56,847,815,807
Fidelity® Total Bond Fund	FTBFX	0.45	Medium Moderate	Gold	32	20	8	13	16	\$31,949,295,501
JHancock Bond R6	JHBSX	0.43	Medium Moderate	Bronze	48	22	6	3	1	\$12,112,349,999
JPMorgan Core Plus Bond R6	JCPUX	0.40	Medium Moderate	Neutral	32	17	17	9	8	\$13,764,605,376
Sterling Capital Total Return Bond I	BIBTX	0.45	Medium Moderate	-	46	25	19	16	20	\$1,204,292,519
TIAA-CREF Bond Plus Inst	TIBFX	0.30	Low Moderate	Bronze	36	15	7	6	22	\$4,165,337,404
Voya Intermediate Bond I	IICIX	0.35	Medium Moderate	Silver	57	37	9	5	28	\$5,874,904,344
Western Asset Core Bond IS	WACSX	0.43	High Moderate	Gold	66	19	6	4	5	\$9,309,851,761
Western Asset Core Plus Bond IS	WAPSX	0.43	Medium Moderate	Gold	96	48	2	2	1	\$23,818,851,348

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# Fund Statistics

Name	Ticker	June 30, 2018 Average Credit Quality	Average Eff Duration	High Yield %	Fixed-Inc Country United States %	Fixed-Inc Country Non-US %	Fixed-Inc Emerging %
Dodge & Cox Income	DODIX	A	4.40	6.51	84.56	12.84	2.74
Fidelity® Total Bond Fund	FTBFX	BBB	5.63	12.77	71.56	9.67	3.15
JHancock Bond R6	JHBSX	BBB	5.89	16.89	85.77	9.39	1.59
JPMorgan Core Plus Bond R6	JCPUX	BBB	6.03	11.78	82.55	8.48	1.61
Sterling Capital Total Return Bond I	BIBTX	A	5.65	3.70	91.86	5.92	0.00
TIAA-CREF Bond Plus Inst	TIBFX	BB	5.67	22.00	83.64	10.82	4.55
Voya Intermediate Bond I	IICIX	A	5.85	10.78	78.62	9.78	5.62
Western Asset Core Bond IS	WACSX	AAA	6.46	0.54	85.10	15.23	6.21
Western Asset Core Plus Bond IS	WAPSX	BBB	7.06	13.93	81.99	16.62	8.47

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# Qualitative Review

- Western Asset Core Plus Bond Fund
  - One of the higher allocations to high yield among the finalists (14%)
  - One of the longer-tenured managers is retiring at the end of 2018
- John Hancock Bond Fund
  - Has one of the largest allocations to “Core Plus” in the category
  - Five year average allocation to high yield of 20%
  - Five year credit average of BB
- TIAA-CREF Bond Plus Fund
  - Targets 20-30% allocation to “Core Plus” assets
  - Five year credit average of BB
  - Five year average high yield allocation of 20%

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# Qualitative Review

- JP Morgan Core Plus Bond Fund
  - Fund manager turnover in 2013. Lead managers on fund less than 5 years.
  - Took on a more macro-driven process in 2013.
  
- Sterling Capital Total Return Bond Fund
  - Highest expense ratio of the finalist funds. (0.45%)
  - Smallest asset base of the finalist funds. (\$1.2 billion)
  
- Voya Intermediate Bond Fund
  - Lead manager left in 2017
  - Exposure to mortgage derivatives and non-U.S. dollar securities

# Final Search Results

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# Final Search Results

## Western Asset Core Bond Fund

- Highest five year credit quality of the finalists - A
- Top decile performance for 3, 5, and 10 year time periods
- Currently holds 15% in international bonds (6% emerging market)

## Dodge & Cox Income

- shortest duration of the finalists
- top quintile performance for 1 and 10 year periods, top decile 3 and 5 year time periods
- tenured management – management team averages 22 years on the fund
- Currently holds 13% in international bonds (3% emerging market)

## Fidelity Total Bond Fund

- Top decile performance for 3 year period, top quintile for 1, 5, and 10 year periods
- May hold up to 20% in high yield and emerging market bonds
- currently holds 10% in international bonds (3% emerging market)

# Final Search Results

## Performance Summary: Intermediate-Term Bond Options

*period ended 6/30/2018*

Bond	Morningstar Category	Ticker Symbol	Fund Name	Overall Rating					Long-Term Rolling Analysis		
				Composite %'s			Overall Morningstar Rating		Consecutive Quarters Below	# of Quarters Below out of trailing 12	
				Overall	Return	Sharpe					
	Intermediate-Term Bond	WACSX	Western Asset Core Bond IS	91.8	93.7	90.0	5	Above	0	0 out of 12	Pass
	Intermediate-Term Bond	DODIX	Dodge & Cox Income	90.9	88.3	93.5	5	Above	0	0 out of 12	Pass
	Intermediate-Term Bond	FTBFX	Fidelity® Total Bond Fund	84.6	85.7	83.5	4	Above	0	0 out of 12	Pass

Data Source: Morningstar® Direct<sup>SM</sup>

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# Final Search Results

## Return Analysis: Intermediate-Term Bond Options

period ended 6/30/2018

Fund Name	2nd Qtr	2nd Qtr	Performance vs. Benchmark (Annualized Returns and Return Percentiles %)										Incept. Date
	2018	2018	1 Year	1 Year	3 Year	3 Year	5 Year	5 Year	10 Year	10 Year	Return Since		
	Return	Percentile	Return	Percentile	Return	Percentile	Return	Percentile	Return	Percentile	Inception		
<b>Bond</b> Intermediate-Term Bond Peer Group	-0.25	50	-0.47	50	1.68	50	2.25	50	4.00	50			
Western Asset Core Bond IS	-0.33	37	0.19	82	2.74	92	3.38	94	5.34	95	5.61	8/29/2008	
Dodge & Cox Income	-0.33	37	0.37	86	2.64	90	3.09	88	4.86	87	6.64	1/3/1989	
Fidelity® Total Bond Fund	-0.19	59	0.13	80	2.55	89	2.98	85	4.71	83	4.71	10/15/2002	

A Percentile Ranking of 100% represents the highest performance whereas 0% represents the lowest.

Current performance may be lower or higher than performance data shown.

Performance data quoted represents past performance and is not a guarantee or prediction of future results. The investment return and principal value of an investment will fluctuate so that, when redeemed

shares/units may be worth more or less than their original cost. For performance data current to the most recent month-end, please visit [www.empower-retirement.com/participant](http://www.empower-retirement.com/participant). Total return performance shown above represents that of the underlying fund and does not include a deduction for any applicable annuity contract of administrative fees/expenses. Performance numbers shown above would be less after applicable fee/expenses are deducted.

Data Source: Morningstar® Direct™

Please refer to the Appendix page for additional disclosures



# Final Search Results

## Sharpe Ratio and Expense Analysis: Intermediate-Term Bond Options

*period ended 6/30/2018*

Bond	Fund Name	Sharpe Ratios and Percentiles %				Standard Deviation		Expense	Expense	Manager	Fund Size
		3 Yr Ratio	3 Yr %	5 Yr Ratio	5 Yr %	3 Yr	5 Yr	Ratio	Percentile %	Tenure (yrs)	\$MM
	Intermediate-Term Bond Peer Group	0.37	50	0.67	50	2.62	2.66	0.66	50		
	Western Asset Core Bond IS	0.69	90	1.01	90	2.86	2.86	0.43	83	24	9,200
	Dodge & Cox Income	0.74	93	1.08	94	2.51	2.39	0.43	83	30	56,253
	Fidelity® Total Bond Fund	0.64	86	0.90	81	2.79	2.79	0.45	81	14	31,967

Percentile Ranking of 100% represents the highest performance whereas 0% represents the lowest.

Expense refers to the Prospectus Net Expense Ratio

Data Source: Morningstar® Direct<sup>SM</sup>

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# Final Search Results

## Annual Returns and Statistics: Intermediate-Term Bond Options

period ended 6/30/2018

Fund Name	Calendar Year Returns					Modern Portfolio Theory Statistics (3 year)			Portfolio Construction		
	2017	2016	2015	2014	2013	Alpha	Beta	R2	Turnover Ratio	Number of Holdings	% in top 10 holdings
	<b>Bond</b>										
Intermediate-Term Bond Peer Group	3.76	2.98	0.10	5.58	-1.68						
Western Asset Core Bond IS	5.23	4.13	1.22	7.54	-1.81	0.28	0.81	94	102	1628	22%
Dodge & Cox Income	4.36	5.61	-0.59	5.48	0.64	0.47	0.67	84	19	1085	10%
Fidelity® Total Bond Fund	4.19	5.86	-0.42	5.54	-0.92	0.15	0.78	92	137	2560	26%

The Fund Performance Review is a proprietary high level analytical tool that is used to evaluate fund performance and is not intended as an offer or solicitation of securities, or as investment advice. Investment options available in the plan may be through mutual funds and/or a group fixed and variable annuity contract. *Current performance may be lower or higher than performance data shown. Performance data quoted represents past performance and is not a guarantee or prediction of future results. The investment return and principal value of an investment will fluctuate so that, when redeemed, shares/units may be worth more or less than their original cost.* Total return performance shown above represents that of the underlying fund and does not include a deduction for any applicable annuity contract of administrative fees/expenses. Performance numbers shown above would be less after applicable fee/expenses are deducted.

Data Source: Morningstar® Direct<sup>SM</sup>

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# Final Search Results

## Index Performance

period ending 6/30/2018

Index	Total Return	Total Return	Total Return	Total Return	Annual Return	Annual Return	Annual Return	Annual Return	Annual Return	
	1 Year	3 Year	5 Year	10 Year	2017	2016	2015	2014	2013	
<b>International</b>	MSCI EMF ID	5.81	3.23	2.61	-0.16	34.35	8.58	-16.96	-4.63	-4.98
	MSCI Eafe Ndr_D	6.84	4.90	6.44	2.84	25.03	1.00	-0.81	-4.90	22.78
	MSCI World Ndr_D	11.09	8.48	9.94	6.26	22.40	7.51	-0.87	4.94	26.68
<b>Small-Cap</b>	Russell 2000 Growth	21.86	10.60	13.65	11.24	22.17	11.32	-1.38	5.60	43.30
	Russell 2000	17.57	10.96	12.46	10.60	14.65	21.31	-4.41	4.89	38.82
	Russell 2000 Value	13.10	11.22	11.18	9.88	7.84	31.74	-7.47	4.22	34.52
<b>Mid-Cap</b>	Russell Midcap Growth	18.52	10.73	13.37	10.45	25.27	7.33	-0.20	11.90	35.74
	Standard & Poor's Midcap 400	13.50	10.89	12.69	10.78	16.24	20.74	-2.18	9.77	33.50
	Russell Midcap Value	7.60	8.80	11.27	10.06	13.34	20.00	-4.78	14.75	33.46
<b>Large-Cap</b>	Russell 1000 Growth	22.51	14.98	16.36	11.83	30.21	7.08	5.67	13.05	33.48
	Standard & Poor's 500 TR	14.37	11.93	13.42	10.17	21.83	11.96	1.38	13.69	32.39
	Russell 1000 Value	6.77	8.26	10.34	8.49	13.66	17.34	-3.83	13.45	32.53
<b>Bond</b>	BBgBarc US Aggregate Bond	-0.40	1.72	2.27	3.72	3.54	2.65	0.55	5.97	-2.02
	BBgBarc US Capital Credit	-0.65	2.86	3.37	5.15	6.18	5.63	-0.77	7.53	-2.01
	BBgBarc US Mortgage-Backed	0.15	1.46	2.25	3.54	2.47	1.67	1.51	6.08	-1.41
	BBgBarc US Government Bond	-0.63	1.02	1.48	2.91	2.30	1.05	0.86	4.92	-2.60
	BBgBarc US 1-3 Year Government	0.03	0.42	0.59	1.32	0.45	0.87	0.57	0.64	0.37

MSCI EMF ID A capitalization-weighted index of stocks from 26 emerging markets that only includes issues that may be traded by foreign investors. The reported returns reflect equities priced in US dollars and do not include the effects of reinvested dividends.

MSCI EAFE Ndr\_D Widely accepted as a benchmark for international stock performance, the EAFE Index is an aggregate of 21 individual country indexes that collectively represent many of the major markets of the world.

MSCI World Ndr\_D Includes all 23 MSCI developed market countries. Ndr\_D indexes are calculated daily and take into account actual dividends reinvested daily before withholding taxes, but exclude special tax credits declared by companies.

Russell 2000 Growth Market-weighted total return index that measures the performance of companies within the Russell 2000 Index having higher price-to-book ratios and higher forecasted growth values.

Russell 2000 Consists of the smallest 2000 companies in the Russell 3000 Index, representing approximately 7% of the Russell 3000 total market capitalization.

Russell 2000 Value Market-weighted total return index that measures the performance of companies within the Russell 2000 Index having lower price-to-book ratios and lower forecasted growth values.

Russell Mid Cap Growth Market-weighted total return index that measures the performance of companies within the Russell Midcap Index having higher price-to-book ratios and higher forecasted growth values.

Standard & Poor's Midcap 400 Includes approximately 10% of the capitalization of U.S. equity securities. These are comprised of stocks in the middle capitalization range.

Russell Mid Cap Value Market-weighted total return index that measures the performance of companies within the Russell Midcap Index having lower price-to-book ratios and lower forecasted growth values.

Russell 1000 Growth Market-weighted total return index that measures the performance of companies within the Russell 1000 Index having higher price-to-book ratios and higher forecasted growth values.

Standard & Poor's 500 A market capitalization-weighted index of 500 widely held stocks often used as a proxy for the stock market. It measures the movement of the largest issues.

Russell 1000 Value Market-weighted total return index that measures the performance of companies within the Russell 1000 Index having lower price-to-book ratios and lower forecasted growth values.

BBgBarc US Aggregate Bond Composed of the Bloomberg Barclays Govt/Credit Index, the Mortgage-Backed Securities Index, and the Asset-Backed Securities Index.

BBgBarc US Capital Credit Listed for corporate bond-general and high-quality funds. This index tracks the returns of all publicly issued, fixed-rate, nonconvertible, dollar-denominated, SEC-registered, investment-grade corporate debt.

BBgBarc US Mortgage-Backed Includes 15- and 30-year fixed-rate securities backed by mortgage pools of the Government National Mortgage Association (GNMA).

BBgBarc US Government Bond Listed for government-bond general and Treasury funds because it tracks the returns of U.S. Treasuries, agency bonds, and one- to three-year U.S. government obligations.

This index is effective for tracking portfolios holding non-mortgage government securities.

BBgBarc US 1-3 Year Government Composed of both the Treasury Bond index (all public obligations of the U.S. Treasury, excluding flower bonds and foreign-targeted issues) and the Agency Bond Index

(all publicly issued debt of U.S. Government agencies and quasi-federal corporations and corporate-debt guaranteed by the U.S. Government).

A benchmark index is not actively managed, does not have a defined investment objective and does not incur fees or expenses. Therefore, performance of a fund will generally be less than its benchmark index. You cannot invest directly in a benchmark index.

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# Fund Analytics

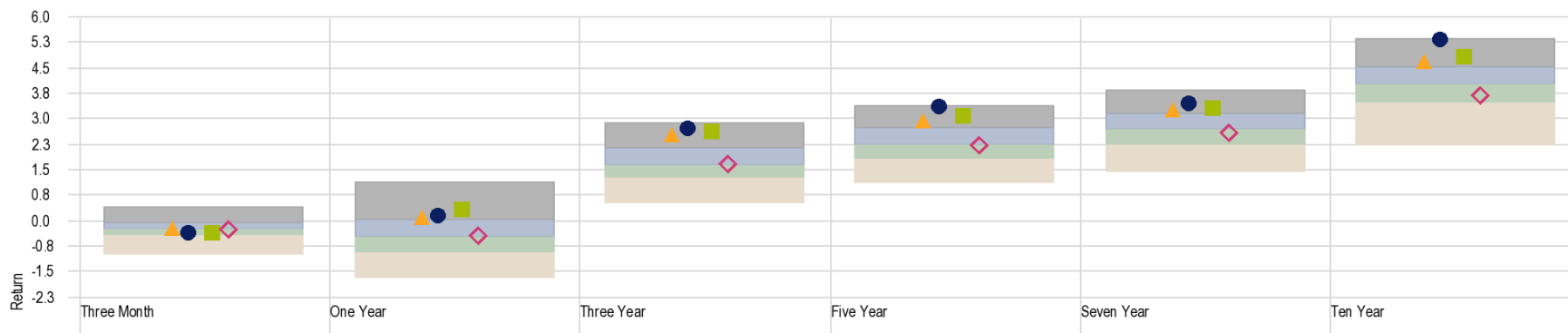


## Fund Analytics - Active Mutual Funds

### Trailing Returns

Peer Group (5-95%): Open End Funds - U.S. - Intermediate-Term Bond

■ Top Quartile ■ 2nd Quartile ■ 3rd Quartile ■ Bottom Quartile



● Western Asset Core Bond IS      ■ Dodge & Cox Income      ▲ Fidelity@ Total Bond Fund  
 ◆ US Fund Intermediate-Term Bond

### Trailing Returns

As of Date: 6/30/2018 Source Data: Monthly Return Peer Group: Open End Funds - U.S. - Large Value

	Three Month	% rank	One Year	% rank	Three Year	% rank	Five Year	% rank	Seven Year	% rank	Ten Year	% rank
Western Asset Core Bond IS	-0.33	90	0.19	99	2.74	98	3.38	99	3.49	99	5.34	97
Dodge & Cox Income	-0.33	90	0.37	99	2.64	98	3.09	99	3.35	99	4.86	99
Fidelity@ Total Bond Fund	-0.19	89	0.14	99	2.55	99	2.99	99	3.30	99	4.71	99
BBgBarc US Agg Bond TR USD	-0.16	88	-0.40	99	1.72	99	2.27	99	2.57	100	3.72	99
US Fund Intermediate-Term Bond	-0.25	89	-0.42	99	1.69	99	2.21	99	2.62	100	3.72	99
25th Percentile	2.19		10.40		9.36		10.78		11.39		9.16	
50th Percentile	1.43		8.41		8.16		9.94		10.48		8.28	
75th Percentile	0.50		6.38		6.92		9.03		9.66		7.30	

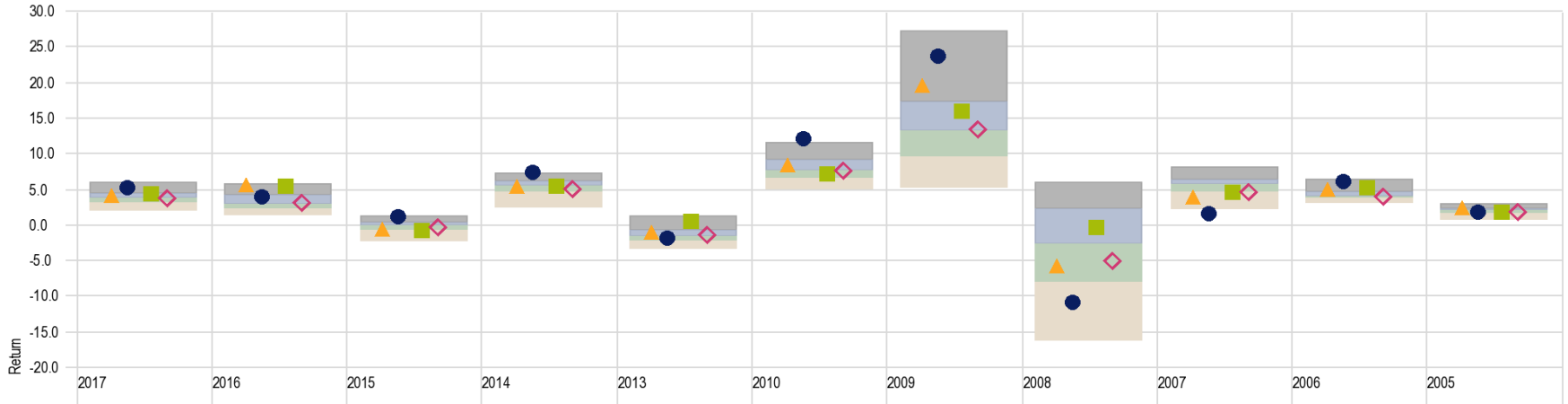
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# Fund Analytics - Active Mutual Funds

## Calendar Year Returns

Peer Group (5-95%): Open End Funds - U.S. - Intermediate-Term Bond

■ Top Quartile ■ 2nd Quartile ■ 3rd Quartile ■ Bottom Quartile



● Western Asset Core Bond IS

■ Dodge & Cox Income

▲ Fidelity Total Bond Fund

◇ US Fund Intermediate-Term Bond

## Calendar Year Returns

Peer Group: Open End Funds - U.S. - Intermediate-Term Bond

	2017	2016	2015	2014	2013	2010	2009	2008	2007	2006	2005
Western Asset Core Bond IS	5.23	4.13	1.22	7.54	-1.81	12.25	23.72	-10.78	1.74	6.24	1.91
Dodge & Cox Income	4.36	5.61	-0.59	5.48	0.64	7.17	16.05	-0.29	4.68	5.30	1.98
Fidelity Total Bond Fund	4.19	5.86	-0.42	5.54	-0.92	8.55	19.80	-5.56	4.13	5.15	2.46
BBgBarc US Agg Bond TR USD	3.54	2.65	0.55	5.97	-2.02	6.54	5.93	5.24	6.97	4.33	2.43
US Fund Intermediate-Term Bond	3.76	3.24	-0.27	5.13	-1.38	7.71	13.47	-5.07	4.62	4.11	1.79
25th Percentile	4.50	4.16	0.48	6.14	-0.72	9.22	17.41	2.29	6.49	4.58	2.37
50th Percentile	3.80	3.04	0.00	5.54	-1.56	7.68	13.23	-2.72	5.69	4.09	2.02
75th Percentile	3.11	2.34	-0.72	4.64	-2.29	6.58	9.53	-8.00	4.69	3.76	1.60

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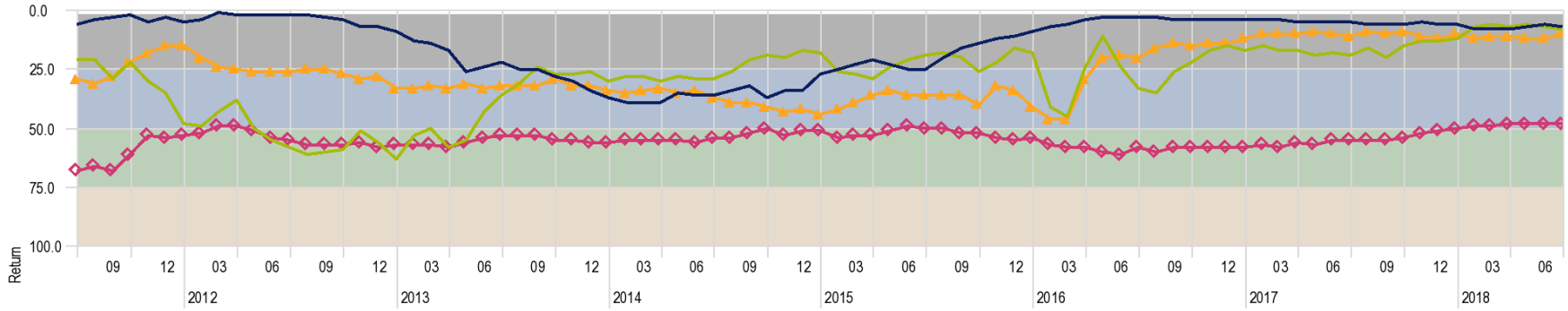
# Fund Analytics - Active Mutual Funds

## 3 Year Rolling Returns

Time Period: 7/1/2008 to 6/30/2018

Peer Group (5-95%): Open End Funds - U.S. - Intermediate-Term Bond Rolling Window: 3 Years 1 Month shift

1st to 25th Percentile 26th to Median 51st to 75th Percentile 76th to 100th Percentile



Western Asset Core Bond IS  
US Fund Intermediate-Term Bond

Dodge & Cox Income

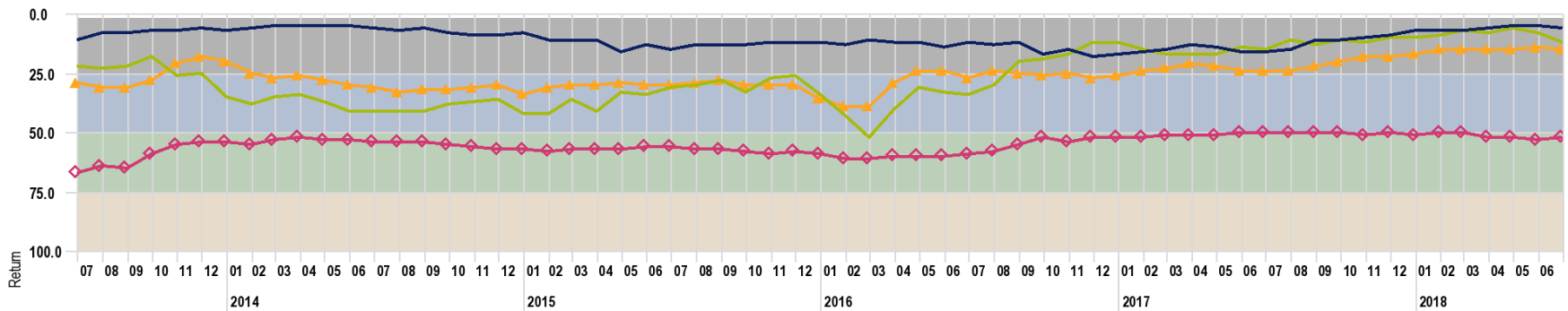
Fidelity Total Bond Fund

## 5 Year Rolling Returns

Time Period: 7/1/2008 to 6/30/2018

Peer Group (5-95%): Open End Funds - U.S. - Intermediate-Term Bond Rolling Window: 5 Years 1 Month shift

1st to 25th Percentile 26th to Median 51st to 75th Percentile 76th to 100th Percentile



Western Asset Core Bond IS  
US Fund Intermediate-Term Bond

Dodge & Cox Income

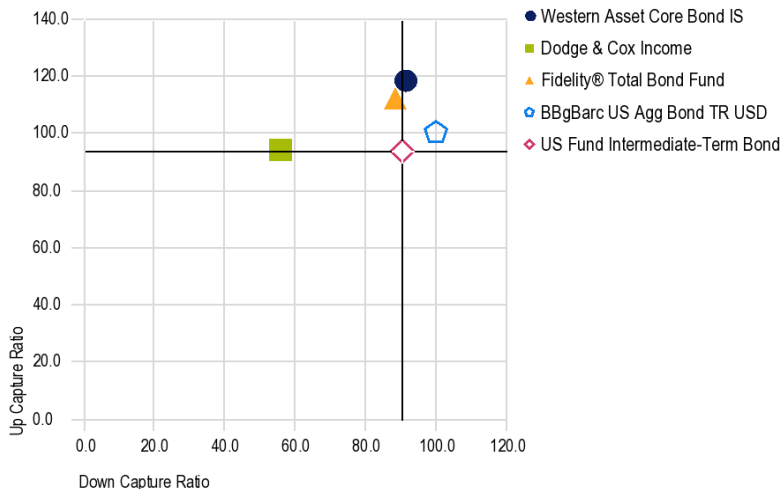
Fidelity Total Bond Fund

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# Fund Analytics - Active Mutual Funds

## 3 Year Upside-Downside Capture

Time Period: 7/1/2015 to 6/30/2018



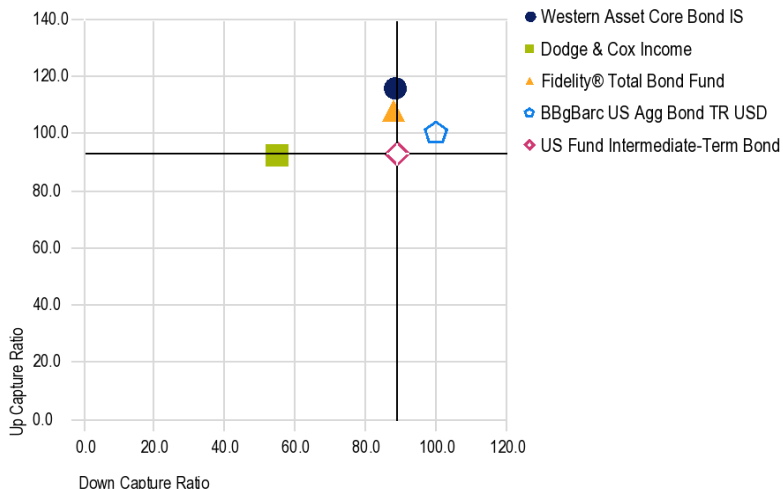
## 3 Year Upside-Downside Statistics

Time Period: 6/1/2015 to 6/30/2018 Calculation Benchmark: BBgBarc US Agg Bond TR USD

	Up Period Percent	Down Period Percent	Up Capture Ratio	Down Capture Ratio
Western Asset Core Bond IS	62.16	37.84	118.31	93.50
Dodge & Cox Income	62.16	37.84	94.19	60.00
Fidelity® Total Bond Fund	62.16	37.84	112.11	91.16
BBgBarc US Agg Bond TR USD	56.76	43.24	100.00	100.00
US Fund Intermediate-Term Bond	59.46	40.54	93.55	91.70
25th Percentile	56.76	48.65	256.84	230.74
50th Percentile	54.05	45.95	238.39	199.12
75th Percentile	51.35	43.24	212.09	165.46

## 5 Year Upside-Downside Capture

Time Period: 7/1/2013 to 6/30/2018



## 5 Year Upside-Downside Statistics

Time Period: 6/1/2013 to 6/30/2018 Calculation Benchmark: BBgBarc US Agg Bond TR USD

	Up Period Percent	Down Period Percent	Up Capture Ratio	Down Capture Ratio
Western Asset Core Bond IS	62.30	37.70	116.11	91.80
Dodge & Cox Income	63.93	36.07	92.21	61.00
Fidelity® Total Bond Fund	59.02	40.98	107.86	92.29
BBgBarc US Agg Bond TR USD	57.38	42.62	100.00	100.00
US Fund Intermediate-Term Bond	57.38	42.62	92.99	93.94
25th Percentile	57.38	45.90	197.06	214.52
50th Percentile	54.10	45.90	178.41	186.36
75th Percentile	54.10	42.62	159.88	160.65

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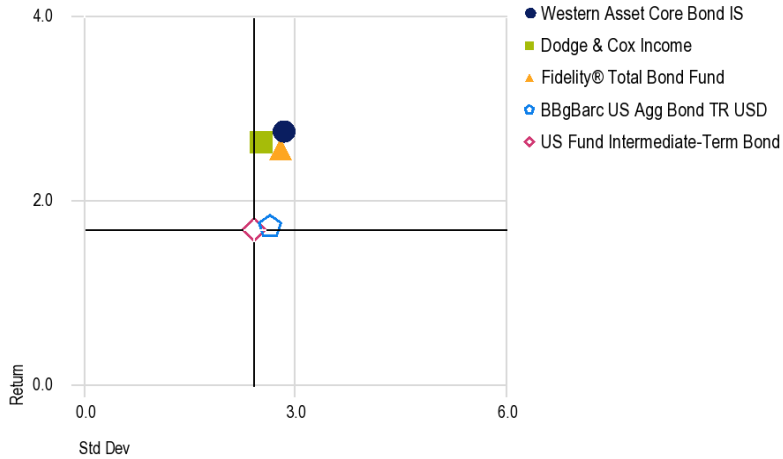


# Fund Analytics - Active Mutual Funds

## 3 Year Risk-Reward

Time Period: 7/1/2015 to 6/30/2018

Peer Group (5-95%): Open End Funds - U.S. - Intermediate-Term Bond



## 3 Year Risk Statistics

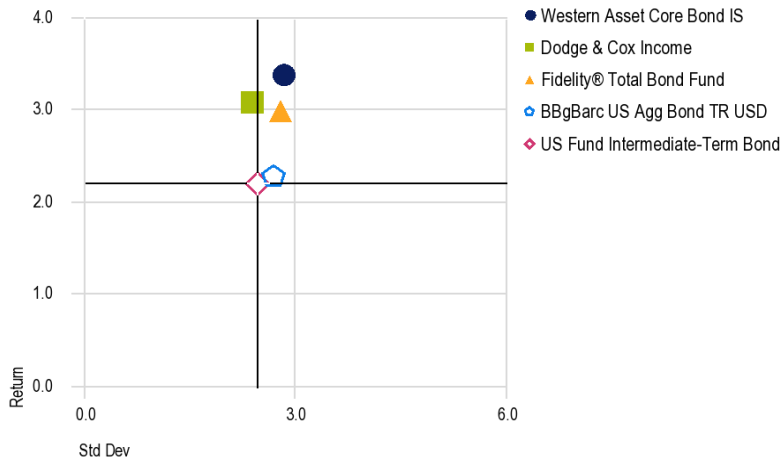
Time Period: 6/1/2015 to 6/30/2018 Peer Group: Open End Funds - U.S. - Intermediate-Term Bond

	Return	Std Dev	Alpha	Beta	Sharpe Ratio	Tracking Error
Western Asset Core Bond IS	2.28	2.92	0.94	1.04	0.53	0.85
Dodge & Cox Income	2.24	2.57	1.10	0.69	0.59	1.98
Fidelity Total Bond Fund	2.09	2.86	0.81	0.92	0.48	1.42
BBgBarc US Agg Bond TR USD	1.31	2.70	0.00	1.00	0.23	0.00
US Fund Intermediate-Term Bond	1.28	2.49	0.03	0.89	0.23	0.73
25th Percentile	1.72	2.79	0.46	0.97	0.37	1.31
50th Percentile	1.25	2.68	-0.01	0.92	0.21	0.95
75th Percentile	0.88	2.51	-0.36	0.85	0.07	0.60

## 5 Year Risk-Reward

Time Period: 7/1/2013 to 6/30/2018

Peer Group (5-95%): Open End Funds - U.S. - Intermediate-Term Bond



## 5 Year Risk Statistics

Time Period: 7/1/2013 to 6/30/2018 Peer Group: Open End Funds - U.S. - Intermediate-Term Bond

	Return	Std Dev	Alpha	Beta	Sharpe Ratio	Tracking Error
Western Asset Core Bond IS	3.38	2.86	1.05	1.02	1.01	0.79
Dodge & Cox Income	3.09	2.39	1.34	0.70	1.08	1.71
Fidelity Total Bond Fund	2.99	2.79	0.82	0.93	0.90	1.20
BBgBarc US Agg Bond TR USD	2.27	2.70	0.00	1.00	0.67	0.00
US Fund Intermediate-Term Bond	2.21	2.46	0.15	0.88	0.71	0.69
25th Percentile	2.72	2.78	0.65	0.98	0.85	1.27
50th Percentile	2.23	2.65	0.13	0.92	0.67	0.94
75th Percentile	1.84	2.49	-0.24	0.83	0.54	0.63

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# Appendix



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# Fund Performance Report Overview

ADVISED ASSETS  
GROUP

## FUND PERFORMANCE REVIEW

### IMPORTANT DISCLOSURES:

The Fund Performance Review is compiled at the request of the Plan Sponsor and/or broker. It is designed as a high level analytical tool to aide plan sponsors in carrying out their fiduciary responsibilities; it is not intended as investment advice. Plan Sponsors may wish to review the enclosed material with their investment adviser, consultant or broker, if necessary, prior to making final investment decisions.

Funds listed on the Fund Performance Review are designed to meet stated investment objectives and risk profiles. Risks associated with the investment options can vary significantly and the relative risks of investment categories may change under certain economic conditions. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be more or less than their original cost. Current performance may be lower or higher than performance data shown due to market activity. Past performance is not a guarantee of future results.

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# Fund Performance Report Overview

ADVISED ASSETS  
GROUP

## FUND PERFORMANCE REVIEW: OVERVIEW

- OBJECTIVE:**
- \* To quantify historical fund performance relative to peer group benchmarks.
  - \* To identify funds that have consistently underperformed over the long-term.
  - \* To assist in identifying style drift and discern gaps within the plan portfolio.

- FUNDAMENTALS:**
- \* An objective analysis based on set criteria.
  - \* Based on long-term and risk-adjusted performance.
  - \* Comparison against peer group of similar funds as determined by *Morningstar, Inc.*®

- SOURCE:**
- \* Statistics are derived from an independent third-party; primarily *Morningstar Direct*®

- SCOPE:**
- \* The Fund Performance Review is designed as a high level analytical tool to aide plan sponsors in carrying out their fiduciary responsibilities; it is not intended as investment advice.

The purpose of this document is to provide investment-related information only for the plan sponsor in its role as a fiduciary to the Plan, not as investment advice for plans or plan participants. Although the data contained in this report is from reliable sources, Advised Assets Group, LLC cannot guarantee its completeness or accuracy. Risks associated with investment options can vary significantly with each particular investment category and the relative risks of categories may change under certain economic conditions. The investment return and principal of an investment will fluctuate so that an investor's shares, when redeemed, may be more or less

Current performance may be lower or higher than performance data shown due to market volatility. Past performance is no guarantee of future returns.

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# Fund Performance Report Overview

ADVISED ASSETS  
GROUP

## FUND PERFORMANCE REVIEW: CRITERIA

**OVERALL RATING:** Based on performance, risk-adjusted performance and the Overall Morningstar Rating.

**Return Composite:** Determined by taking the equal-weighted average of the 3-, 5- and 10-year category return percentiles.

**Sharpe Composite:** Calculated by averaging the 3- and 5-year category sharpe percentiles.

**Overall Composite:** The equally-weighted average of the Return Composite and Sharpe Composite.

**Overall Morningstar Rating:** Represents a measure of an investment's risk-adjusted return, relative to similar investments.

The Overall Composite is the sole determinate for the Overall Rating for funds that do not have an Overall Morningstar Category Rating.

Overall Composite		Overall Morningstar Rating	Overall Rating
≥ 50.0%	AND	⑤, ④, or ③	Above
< 50.0%	OR	③, ④, or ⑤	Neutral
< 50.0%	AND	①, or ②	Below
≤ 25.0%			Below

**LONG-TERM ROLLING ANALYSIS:** Based on the accumulated trailing 12 quarter "Overall Ratings".

Consecutive number of Quarters Receiving a Below Rating		Total number of Quarters Below out of trailing 12 quarters	Long-Term Rolling Analysis
< 4 Quarters	AND	< 7 Quarters	Pass
≥ 4 Quarters	OR	≥ 7 Quarters	Fail
OR			
Overall Rating: ≤ 25.0%			Fail

For expanded definitions of the Composites, Sharpe Ratio and Ratings, please refer to the corresponding glossary. Information for this fund evaluation was received from what we believe to be reliable sources, but we cannot absolutely guarantee accuracy. The performance data quoted within represents past performance and is not a guarantee or indication of future investment results. For each fund with at least a three-year history, Morningstar calculates a Morningstar Rating based on a Morningstar Risk-Adjusted Return measure that accounts for variation in a fund's monthly performance (including the effects of sales charges, loads, and redemption fees), placing more emphasis on downward variations and rewarding consistent performance. The top 10% of the funds in each category receive 5 stars, the next 22.5% receive 4 stars, the next 35% receive 3 stars, the next 22.5% receive 2 stars and the bottom 10% receive 1 star. (Each share class is counted as a fraction of one fund within this scale and rated separately, which may cause slight variations in the distribution percentages). The Overall Morningstar Rating for a fund is derived from a weighted average of the performance figures with its three-, five-, and then-year (if applicable) Morningstar Rating metrics. Past Performance is no guarantee of future results.

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# Glossary

- **Alpha** - Risk-adjusted excess return of a fund over its benchmark. A positive alpha number means that the fund is generating excess return relative to its expected excess return.
- **Beta** - A measure of a fund's volatility compared to its benchmark. A beta of 1.1 indicates that the fund is 10% more volatile than its benchmark.
- **Duration** - A common gauge of the price sensitivity of a fixed income asset or portfolio to a change in interest rates.
- **Expense ratio** - A measure of a fund's overall expenses.
- **Investment policy** - A fund's stated investment objectives and operating policy.
- **R<sup>2</sup>** - The percentage of the variability in the returns of one investment that can be associated with the variability in the returns of its applicable benchmark.
- **Risk** - Refers to performance volatility, or the probability of not meeting the specified investment objectives.
- **Sharpe Ratio** - Measures return per unit of risk assumed. It is calculated by subtracting the risk free return from the total return of the fund and dividing it by the fund's risk level (standard deviation).
- **Standard Deviation** - A measure of dispersion which determines how much the values within it differ from the mean.
- **Trailing Period** - A snap shot of a specific period of time. A 1-year trailing return represents the previous 12-month period.

# Disclosures

*For more complete information about any of the mutual funds available within the retirement plan, please call 800-345-2345. Investors should carefully consider the investment objectives, risks, charges and expenses of the funds. Please carefully read the prospectus, which contains this and other important information, before you invest or send money.*

*An investment in a Money Market Fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although the fund seeks to preserve the value of your investment at \$1.00 per share, it is possible to lose money by investing in the Fund.*

*The performance data contained herein represents past performance and does not guarantee future results. Investment return and principal value of an investment will fluctuate so that shares or units when redeemed may be worth less than their original cost. Current performance may be lower or higher than the return data quoted herein. For more current fund performance, including the most recent completed calendar month, please call 800-345-2345.*

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Dollar cost averaging does not ensure a profit and does not protect against loss in declining markets.

Rebalancing does not ensure a profit and does not protect against loss in declining markets. Asset allocation does not ensure a profit and does not protect against loss in declining markets.

Diversification does not ensure a profit and does not protect against loss in declining markets.

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Compared to higher rated securities, high yield bond investment options are subject to greater risk, including the risk of default.

A bond fund's yield, share price and total return change daily and are based on changes in interest rates, market conditions, economic and political news, and the quality and maturity of its investments. In general, bond prices fall when interest rates rise and vice versa.

Certain underlying funds invest in inflation protected bonds ("TIPS"). Unlike conventional bonds, the principal or interest of TIPS is adjusted periodically to a specified rate of inflation (e.g., Consumer Price Index for all Urban Consumers [CPI-U]). There can be no assurance that the inflation index used will accurately measure the actual rate of inflation.

Separate accounts are not registered investment products but separate accounts created specifically for the Plan. Separate accounts are not required to file a prospectus or registration statement with the SEC and accordingly neither is available.

A collective fund is not a mutual fund and is exempt from SEC registration. Designed for and exclusively sold to qualified retirement plans and their participants, the funds are not available to individual retail investors.

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The net expense ratio is the expense ratio after the application of any waivers or reimbursement. Please note the expenses take into consideration a voluntary or contractual waiver that expires as disclosed by the fund prospectus.

Morningstar rankings are based on total return and do not reflect of sales charges, which, if reflected, would reduce returns.

The date in a target date fund's name represents an approximate date when an investor is expected to retire (which is assumed to be at age 65) and/or begins withdrawing money. The principal value of the funds is not guaranteed at any time, including the target date. For more information, please refer to the fund prospectus and/or disclosure document. A target date fund will gradually shift its emphasis from more aggressive investments to more conservative ones based on its target date (which is the assumed retirement date for an investor).

Asset allocation and balanced investment options and models are subject to the risks of the underlying funds, which can be a mix of stocks/stock funds and bonds/bond funds. For more information, see the prospectus and/or disclosure documents.

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There is no guarantee that companies that can issue dividends will declare, continue to pay, or increase dividends.

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The Trustee of the JPMCB SmartRetirement Funds agrees to reimburse the Fund for such fund operating expenses, and/or to waive a portion of the Trustee's management fee, to the extent that the fund's total annual operating expenses (excluding management fees, service fees, underlying fund fees attributable to dividend and interest expenses on short sales, interest, expenses related to litigation and potential litigation, and extraordinary expenses not incurred in the ordinary course of the Fund's business) exceeds 0.04% of the Fund's average daily new assets through the expense cap expiration date.

The price of equity securities may rise or fall because of changes in the broad market or changes in a company's financial condition, sometimes rapidly or unpredictably. These price movements may result from factors affecting individual companies, sectors or industries selected for the Fund's portfolio or the securities market as a whole, such as changes in economic or political conditions. Equity securities are subject to "stock market risk" meaning that stock prices in general (or in particular, the prices of the types of securities in which a fund invests) may decline over short or extended periods of time. When the value of a fund's securities goes down, an investment in a fund decreases in value.

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PT274707 07/19/2016

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