

**State of North Carolina**

NOVEMBER 14, 2018

# STATE OF NORTH CAROLINA

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## SECTION I

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# GALLIARD CAPITAL MANAGEMENT

## WHO WE ARE

**\$90.0 B**

TOTAL AUM

**\$77.2 B**

TOTAL STABLE VALUE AUM

**115+**

STABLE VALUE SEPARATE  
ACCOUNTS

**109**

EMPLOYEES ON STAFF

SENIOR PROFESSIONALS AVERAGE  
YEARS OF EXPERIENCE:

Stable value portfolio management team – **25**

Fixed income team – **21**

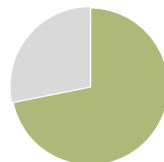
Contract management & negotiation team – **24**

Offer **separate account** and **collective fund**  
solutions for clients

**230+**

INSTITUTIONAL CLIENTS

CLIENT RELATIONSHIP TENURE



**~75%** of our clients have worked  
with Galliard for greater than **5 years**

**29** of those relationships exceed  
**15 years** with Galliard

CLIENT TYPES

- Corporate ● Public Entities ●
- Taft-Hartley ● Operating Funds ●
- Healthcare ● Insurance Reserves ●
- Foundations/ Endowments ●

FORTUNE 100 / 500

**21** Fortune 100 clients; **57** Fortune 500 clients

GALLIARD

## HIGHLIGHTS

Galliard is the **largest** stable value  
separate account manager<sup>1</sup> and  
advises the **largest** stable value  
collective fund<sup>2</sup> in the nation

<sup>1</sup>eVestment, Stable Value Fixed Income universe, as  
of December 31, 2017, Galliard ranked highest  
separate/segregated assets under management

<sup>2</sup>As ranked by the Hueler Analytics, Inc. © stable  
value universe; January 2018 monthly fund data

Galliard has been a signatory to the United  
Nations-supported **Principles for  
Responsible Investment** since 2017

2018 NEW BUSINESS YTD

**5** new clients; **\$420 M** new assets

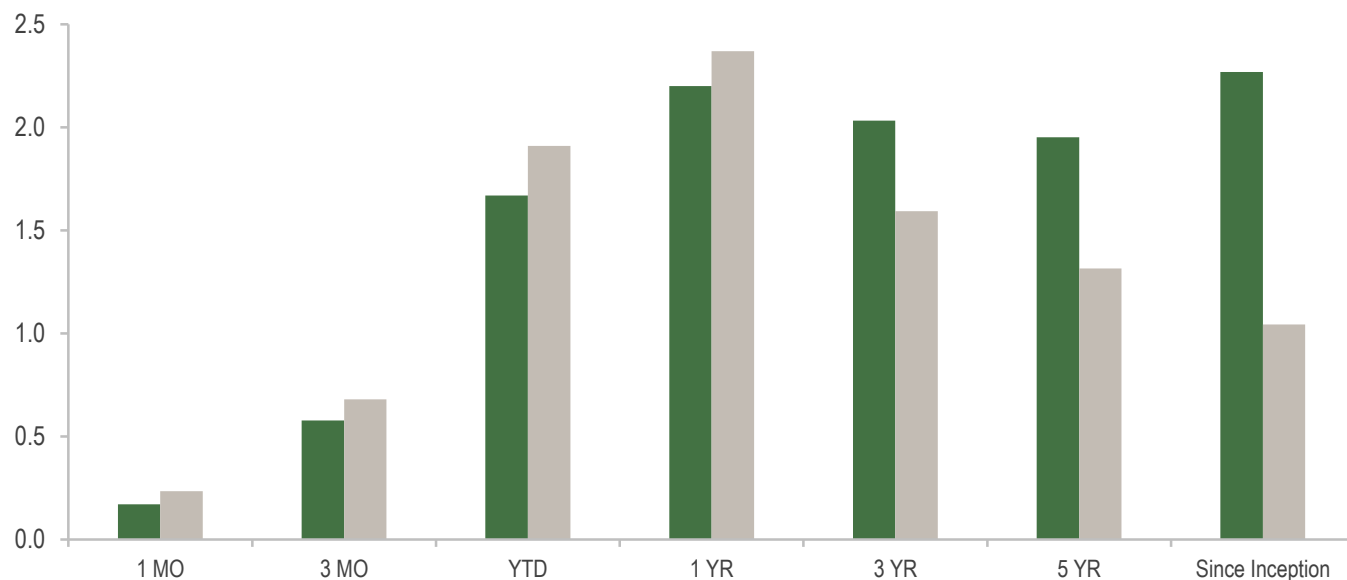
## SECTION II

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# STABLE VALUE PORTFOLIO REVIEW - STATE OF NORTH CAROLINA STABLE VALUE FUND

Third Quarter 2018

## ANNUALIZED INVESTMENT PERFORMANCE AS OF 9/30/18<sup>1</sup>



<b>Book Value Performance</b>	<b>1 Mo.</b>	<b>3 Mo.</b>	<b>YTD</b>	<b>1 Yr.</b>	<b>3 Yr.</b>	<b>5 Yr.</b>	<b>Since Inception<sup>5</sup></b>
■ Portfolio (net of all fees - NAV level) <sup>2,3</sup>	0.17	0.58	1.67	2.20	2.03	1.95	2.27
■ 3 Year Constant Maturity Treasury	0.23	0.68	1.91	2.37	1.59	1.31	1.04
Benchmark <sup>4</sup>	0.28	0.87	2.45	3.12	2.36	2.03	1.88
<b>Value Added (net of all fees - NAV level)<sup>6</sup></b>	<b>(0.06)</b>	<b>(0.10)</b>	<b>(0.24)</b>	<b>(0.17)</b>	<b>0.44</b>	<b>0.64</b>	<b>1.23</b>

1: Returns for periods of less than one year are not annualized.

2: Returns are net of all fees, including book value contract fees, Galliard investment management fees, and, if applicable, external manager fees, Wells Fargo collective fund administrative fees, and plan administrative reimbursement.

3: Galliard assumed management of this portfolio on December 1, 2010. Performance for periods referenced prior to this date include historical performance of another investment advisor.

4: ICE BofAML US 3-Month T's Bill Index+150 bps

5: Galliard assumed management of this portfolio on Dec 01, 2010. Performance for periods referenced prior to this date include historical performance of another investment advisor.

6: May not add due to rounding.

# STABLE VALUE PORTFOLIO REVIEW - STATE OF NORTH CAROLINA STABLE VALUE FUND

Third Quarter 2018

## STATE OF NORTH CAROLINA STABLE VALUE FUND

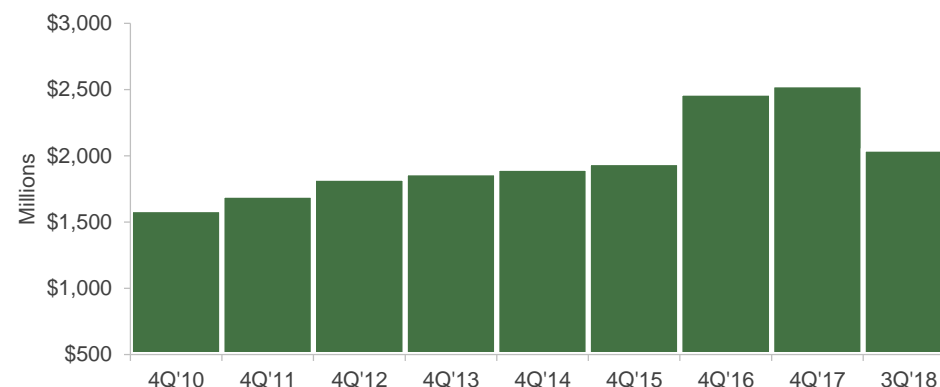
### ACCOUNT SUMMARY

<b>Benchmark</b>	ICE BofAML US 3-Month Tsy Bill Index+150 bps, 3 Year Constant Maturity Treasury
<b>Galliard Inception Date</b>	December 1, 2010
<b>Net Asset Value</b>	\$2,050,583,989

### PORTFOLIO CHARACTERISTICS

	Portfolio 6/30/18	Portfolio 9/30/18
<b>Average Quality - Book Value<sup>1</sup></b>	A+	A+
<b>Average Quality - Market Value<sup>2</sup></b>	AA	AA
<b>Number of Contract Issuers</b>	5	5
<b>Blended Yield (after all fees)<sup>3</sup></b>	2.37%	2.34%
<b>Yield to Maturity</b>	3.07%	3.30%
<b>Effective Duration</b>	3.33 years	3.32 years
<b>Market/Book Value Ratio</b>	98.46%	98.17%

## HISTORICAL FUND ASSETS



### PORTFOLIO DISTRIBUTION

	% Portfolio 6/30/18	% Portfolio 9/30/18
<b>Liquidity Buffer: Cash &amp; Equivalents<sup>4</sup></b>	1.7	1.5
<b>Short Portfolio</b>	33.0	33.1
<b>Intermediate Portfolio</b>	65.3	65.3
<b>Total</b>	<b>100.0%<sup>5</sup></b>	<b>100.0%<sup>5</sup></b>

1: Average holdings quality of the contracts and other book value assets in the portfolio. The Weighted Average Quality of the portfolio has NOT been assessed by a nationally recognized statistical rating organization. The Weighted Average Quality shown represents an average quality of the individual holdings' Composite Ratings, as rated by S&P, Moody's and Fitch.

2: Average holdings quality of the underlying assets of the portfolio. The Weighted Average Quality of the portfolio has NOT been assessed by a nationally recognized statistical rating organization. The Weighted Average Quality shown represents an average quality of the individual holdings' Composite Ratings, as rated by S&P, Moody's and Fitch.

3: Blended Yield is net of all fees, including book value contract fees, Galliard investment management fees, and, if applicable, external manager fees, Wells Fargo collective fund administrative fees, and plan administrative reimbursement.

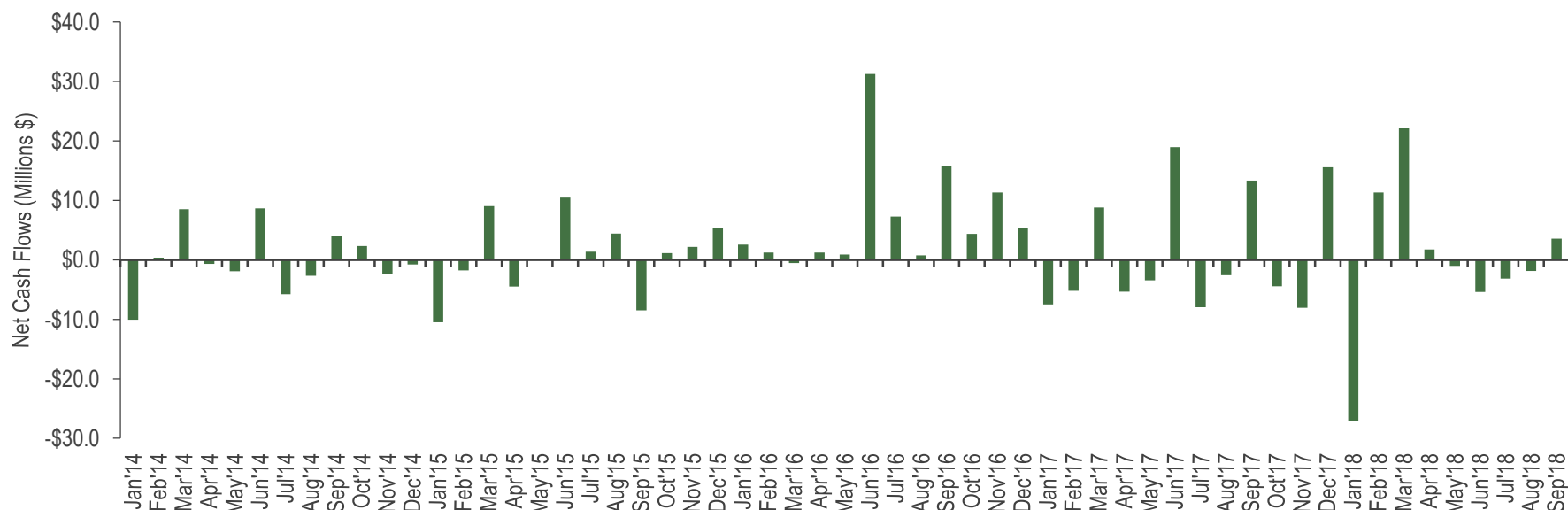
4: Includes Receivables and Payables.

5: Total % of portfolio may not add to 100% due to rounding.

# STABLE VALUE PORTFOLIO REVIEW - STATE OF NORTH CAROLINA STABLE VALUE FUND

Third Quarter 2018

## HISTORICAL CASHFLOWS



	2014	2015	2016	2017	1Q'18	2Q'18	3Q'18	2018 YTD
Beginning Assets	\$1,870.9	\$1,904.2	\$1,948.6	\$2,472.8	\$2,535.1	\$2,554.9	\$2,040.2	\$2,535.1
Net Cash Flow (\$)¹	-\$0.3	\$8.8	\$81.5⁴	\$12.2	\$6.4	-\$4.7³	-\$1.5	\$0.3³
Net Cash Flow (%)	-0.02%	0.46%	4.18%	0.49%	0.25%	-0.18%	-0.06%	0.01%
Estimated Investment Earnings	\$33.6	\$35.7	\$46.9	\$50.1	\$13.4	\$13.7	\$11.9	\$39.0
Ending Assets²	\$1,904.2	\$1,948.6	\$2,472.8	\$2,535.1	\$2,554.9	\$2,040.2	\$2,050.6	\$2,050.6

1: Contributions, Withdrawals and Investment Transfers

2: Cashflows may not net to final assets due to rounding.

3: Excludes Prudential GoalMaker withdrawal of approximately \$523.8 M on 6/18/18 for illustrative purposes.

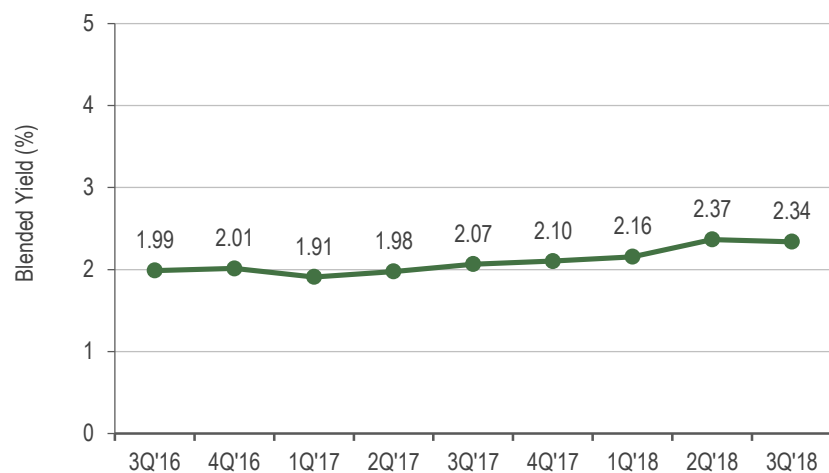
4: Approximately \$395.8 M of new inflow and transfer activity related to the 1/4/16 merger of North Carolina 457 plan assets have been removed for illustrative purposes.



# STABLE VALUE PORTFOLIO REVIEW - STATE OF NORTH CAROLINA STABLE VALUE FUND

Third Quarter 2018

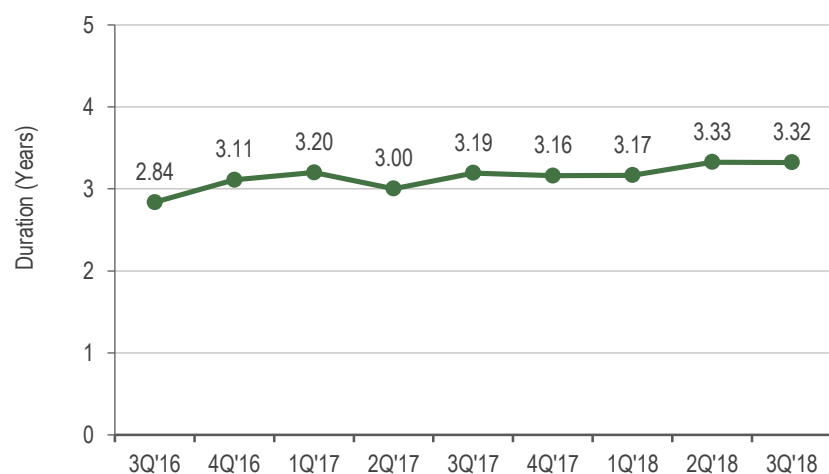
## HISTORICAL BLENDED YIELD<sup>1</sup>



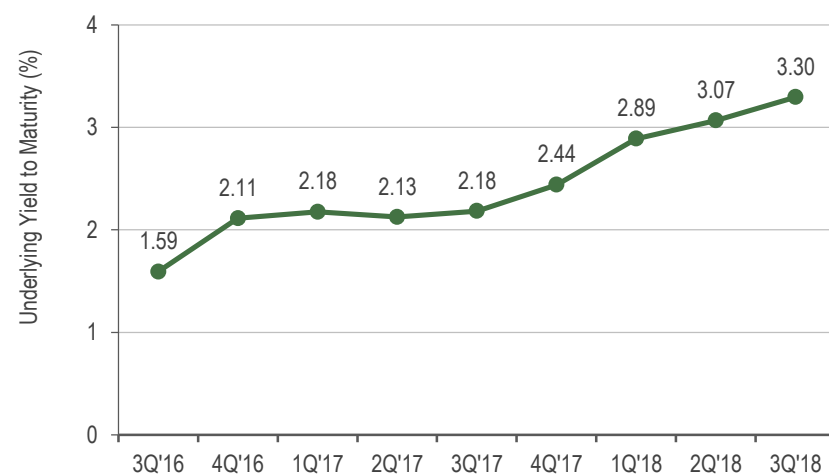
## HISTORICAL MARKET VALUE TO BOOK VALUE RATIO



## HISTORICAL DURATION



## HISTORICAL UNDERLYING YIELD TO MATURITY

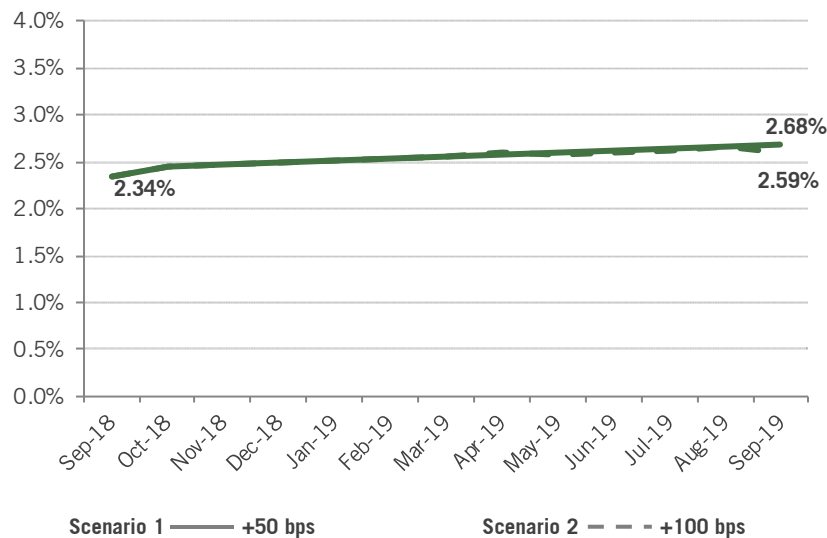


1: Blended Yield is net of all fees, including book value contract fees, Galliard investment management fees, and, if applicable, external manager fees, Wells Fargo collective fund administrative fees, and plan administrative reimbursement.

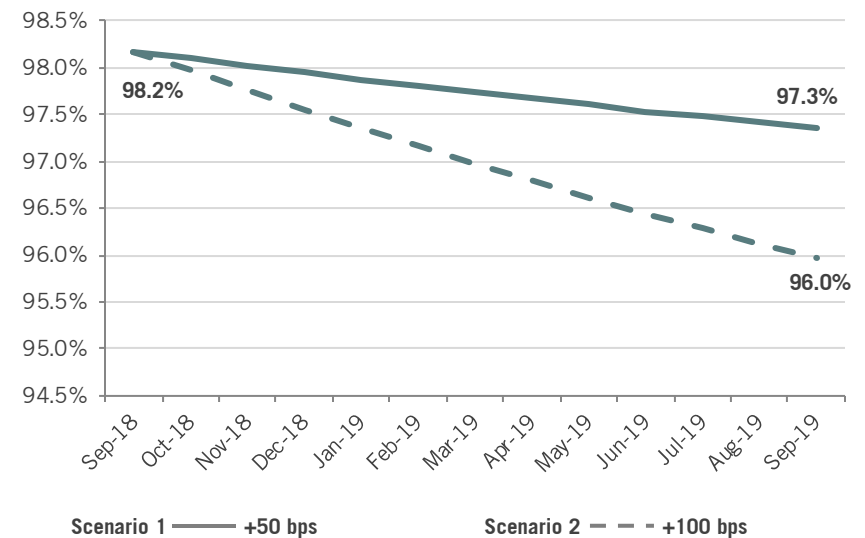
## STATE OF NORTH CAROLINA STABLE VALUE FUND SCENARIO ANALYSIS AS OF 9/30/18

- Our base scenarios assume underlying interest rates continue to rise gradually over the next year at a rate of +50 bps to +100 bps per year
- Given the Fund's historical cash flows, we've included a base assumption of flat cash flows

### Crediting Rate



### Market-to-Book Value Ratio



- Should these assumptions hold, we anticipate a marginally higher crediting rate with a subsequently lower market-to-book value ratio as the fund's crediting rate adjusts to prevailing interest rates

This analysis presents a range of potential impacts to the stable value fund's crediting rate and market-to-book ratio based on variations in participant cash flows and movements in the U.S. Treasury yield curve. Analysis is based on the stable value fund's actual crediting rate, market-to-book ratio, and underlying portfolio of fixed income securities as of 6/30/18. Analysis assumes the following: interest rate changes and participant flows occur evenly throughout the year, the impact of interest rate changes results in a parallel shift to the U.S. Treasury yield curve (i.e. the relationship between shorter and longer term rates remains constant), the duration and sector exposures of the underlying portfolio(s) of fixed income securities remain unchanged, and crediting rates reset quarterly. This analysis is presented based on information available as of 6/30/18 and is not a guarantee of future outcomes or stable value fund performance.

## STATE OF NORTH CAROLINA STABLE VALUE FUND

### SCENARIO ANALYSIS AS OF 9/30/18

- For purposes of additional stress, we run the same exercise over a wider array of interest rate movement and participant behavior
- The below tables illustrate the portfolio's crediting rate and market-to-book value ratio after the corresponding shocks have been applied over a 12-month horizon

#### Crediting Rate – 12 Months Forward

		Gradual Interest Rate Trajectory					
Participant Cash Flow		-100 bps	-50 bps	+0 bps	+50 bps	+100 bps	+150 bps
	5%	2.49%	2.57%	2.64%	2.71%	2.73%	2.47%
	0%	2.49%	2.56%	2.62%	2.68%	2.59%	2.41%
	-5%	2.49%	2.55%	2.60%	2.65%	2.55%	2.23%
	-10%	2.49%	2.54%	2.58%	2.62%	2.33%	2.17%
	-15%	2.49%	2.52%	2.56%	2.59%	2.28%	2.10%

#### Market-to-Book Value Ratio – 12 Months Forward

		Gradual Interest Rate Trajectory					
Participant Cash Flow		-100 bps	-50 bps	+0 bps	+50 bps	+100 bps	+150 bps
	5%	101.7%	100.2%	98.8%	97.4%	96.1%	94.8%
	0%	101.7%	100.2%	98.8%	97.3%	96.0%	94.7%
	-5%	101.7%	100.2%	98.7%	97.2%	95.8%	94.5%
	-10%	101.7%	100.2%	98.6%	97.1%	95.7%	94.4%
	-15%	101.7%	100.1%	98.6%	97.0%	95.5%	94.2%

- Crediting rate and market-to-book behavior is in-line with other Galliard-managed portfolios across this range of shocks

This analysis presents a range of potential impacts to the stable value fund's crediting rate and market-to-book ratio based on variations in participant cash flows and movements in the U.S. Treasury yield curve. Analysis is based on the stable value fund's actual crediting rate, market-to-book ratio, and underlying portfolio of fixed income securities as of 6/30/18. Analysis assumes the following: interest rate changes and participant flows occur evenly throughout the year, the impact of interest rate changes results in a parallel shift to the U.S. Treasury yield curve (i.e. the relationship between shorter and longer term rates remains constant), the duration and sector exposures of the underlying portfolio(s) of fixed income securities remain unchanged, and crediting rates reset quarterly. This analysis is presented based on information available as of 6/30/18 and is not a guarantee of future outcomes or stable value fund performance.

## STABLE VALUE PORTFOLIO REVIEW - STATE OF NORTH CAROLINA STABLE VALUE FUND

Third Quarter 2018

### CONTRACT ISSUER DISTRIBUTION & RATING SUMMARY<sup>1</sup>

	% Portfolio 6/30/18	% Portfolio 9/30/18	Rating 6/30/18	Rating 9/30/18
American General Life Ins. Co.	20.1	20.1	A+	A+
Metropolitan Life Ins. Co.	10.6	10.6	AA-	AA-
Nationwide Life Ins. Co.	17.9	17.9	A+	A+
Prudential Ins. Co. of America	25.2	25.3	AA-	AA-
Transamerica Premier Life Ins. Co.	24.5	24.5	A+	A+

<sup>1</sup>: The quality rating shown represents the individual holdings' Composite Ratings, as rated by S&P, Moody's and Fitch. Ratings shown as NR/NA are not rated or not available security ratings.

# STATE OF NORTH CAROLINA STABLE VALUE FUND PORTFOLIO HOLDINGS

September 30, 2018

Asset ID	Security Description	Contract <sup>1</sup> Type	Manager	Contract Value (\$)	Market Value (\$)	Market/Book Value Ratio (%)	% of Portfolio	Crediting Rate (%) <sup>2</sup>	UCA Yield (%)	Effective Duration (yrs)	Galliard Composite Rating	Wrap Fees (bps)
<b>LIQUIDITY BUFFER</b>												
	Cash Receivable / (Payable)			-1,410,683	-1,410,683	100.0	-0.1	2.25	2.25	0.10	AAA	
9983008\$P	WF/BlackRock Short Term Investment Fund S			33,053,770	33,053,770	100.0	1.6	2.25	2.25	0.10	AAA	
<b>TOTAL LIQUIDITY BUFFER</b>				31,643,088	31,643,088	100.0	1.5	2.25	2.25	0.10	AAA	
<b>SHORT PORTFOLIO</b>												
946996EE1	American General Life Ins. Co.	SBIC	Galliard	203,589,771	200,583,958	98.5	9.9	2.43	3.04	1.90	A+	18.0
896994GW4	Nationwide Life Ins. Co.	SBIC	Galliard	175,008,618	172,029,372	98.3	8.5	2.44	3.04	1.90	A+	17.0
744999CV3	Prudential Ins. Co. of America	SBIC	Galliard	104,233,763	103,002,667	98.8	5.1	2.91	3.04	1.90	AA-	17.0
600996QF2	Transamerica Premier Life Ins. Co.	SBIC	Galliard	196,166,631	190,448,931	97.1	9.6	2.03	3.04	1.90	A+	17.0
<b>TOTAL SHORT PORTFOLIO</b>				678,998,783	666,064,929	98.1	33.1	2.39	3.04	1.90	A+	
<b>INTERMEDIATE PORTFOLIO</b>												
590994VM8	Metropolitan Life Ins. Co.	SAGIC	Dodge & Cox	217,535,593	213,159,914	98.0	10.6	2.76	3.58	3.86	AA-	19.0
946996EE1	American General Life Ins. Co.	SBIC	Payden & Rygel	209,098,204	206,011,065	98.5	10.2	2.43	3.47	3.94	A+	18.0
896994GW4	Nationwide Life Ins. Co.	SBIC	Galliard	192,414,566	189,139,011	98.3	9.4	2.44	3.50	4.27	A+	17.0
744999CV3	Prudential Ins. Co. of America	SBIC	Jennison Assoc.	207,253,538	204,805,685	98.8	10.1	2.91	3.18	3.99	AA-	17.0
744999CV3	Prudential Ins. Co. of America	SBIC	Prudential	207,504,381	205,053,565	98.8	10.1	2.91	3.63	4.43	AA-	17.0
600996QF2	Transamerica Premier Life Ins. Co.	SBIC	Galliard	96,685,070	93,866,975	97.1	4.7	2.03	3.50	4.27	A+	17.0
600996QF2	Transamerica Premier Life Ins. Co.	SBIC	TCW	209,450,766	203,345,872	97.1	10.2	2.03	3.29	4.20	A+	17.0
<b>TOTAL INTERMEDIATE PORTFOLIO</b>				1,339,942,118	1,315,382,086	98.2	65.3	2.54	3.45	4.12	A+	
<b>TOTAL PORTFOLIO</b>				2,050,583,989	2,013,090,102	98.2	100.0	2.49	3.30	3.32	A+	

1: SAGIC = Separate Account GIC. SBIC = Security Backed Investment Contract.

2: Crediting rates are net of wrap fees and any other fees being netted out of the rates.

## APPENDIX - STATE OF NORTH CAROLINA STABLE VALUE FUND

Third Quarter 2018

### TOTAL ANNUAL FUND OPERATING EXPENSES

Total Annual Operating Expenses are deducted directly from the Fund's net asset value and reduce the investment option's rate of return.

Expense	Expense Ratio 9/30/18	Per \$1000	Est. Annual Revenue
Investment Management Fees paid to Galliard	0.074%	\$0.74	\$1,517,637
Investment Management Fees paid to Non-Affiliated Investment Advisors	0.059%	\$0.59	\$1,202,459
Investment Contract Fees <sup>1</sup>	0.172%	\$1.72	\$3,516,975
Acquired Fund Fees <sup>2</sup>	0.001%	\$0.01	\$26,443
- Investment Contract Fees	None	None	None
- Other Acquired Fund Fees and Non-Affiliated Investment Management Fees paid to Non-Affiliated Investment Advisors <sup>3</sup>	0.001%	\$0.01	\$26,443
12b-1 Distribution Fee	None	None	None
Other Expenses	0.027%	\$0.27	\$554,830
<b>Total Annual Fund Operating Expense <sup>4</sup></b>	<b>0.333%</b>	<b>\$3.33</b>	<b>\$6,818,345</b>

1: These are fees paid to create and maintain the investments used by a stable value fund.

2: These are fees borne indirectly by the Fund when it acquires an interest in another fund which pays its own separate fees.

3: Includes audit fees for the cost of producing a report by a qualified auditor.

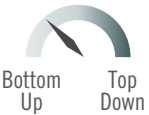








4: Total Annual Fund Operating Expenses are reflected daily in the Fund's net asset value (NAV).

Excluding STIF or money market allocations, non-affiliated investment advisors include Dodge & Cox , Jennison Assoc., Payden & Rygel, Prudential, TCW.

## SECTION III

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## STATE OF NORTH CAROLINA STABLE VALUE FUND MANAGER STYLES

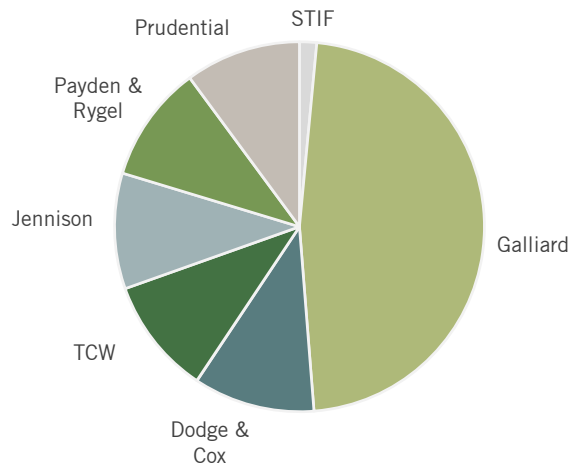
	Investment Approach	Sector Rotation	Active Duration/ Yield Curve Mgmt.	Issue Selection	SECTOR EMPHASIS
<b>GALLIARD</b>	 Bottom Up / Top Down	 Low / High	 Low / High	 Less / More Important	Diversified high quality spread sector emphasis, multi-sector relative value
<b>DODGE &amp; COX</b>	 Bottom Up / Top Down	 Low / High	 Low / High	 Less / More Important	Corporate credit, Agency MBS, duration positioning
<b>TCW</b>	 Bottom Up / Top Down	 Low / High	 Low / High	 Less / More Important	Multi-sector relative value, duration, structured credit
<b>JENNISON</b>	 Bottom Up / Top Down	 Low / High	 Low / High	 Less / More Important	Credit, yield-curve positioning
<b>PAYDEN &amp; RYSEL</b>	 Bottom Up / Top Down	 Low / High	 Low / High	 Less / More Important	Corporate credit, structured credit, multi-sector relative value
<b>PRUDENTIAL</b>	 Bottom Up / Top Down	 Low / High	 Low / High	 Less / More Important	Multi-sector relative value, Agency MBS, global focus



# STATE OF NORTH CAROLINA STABLE VALUE FUND

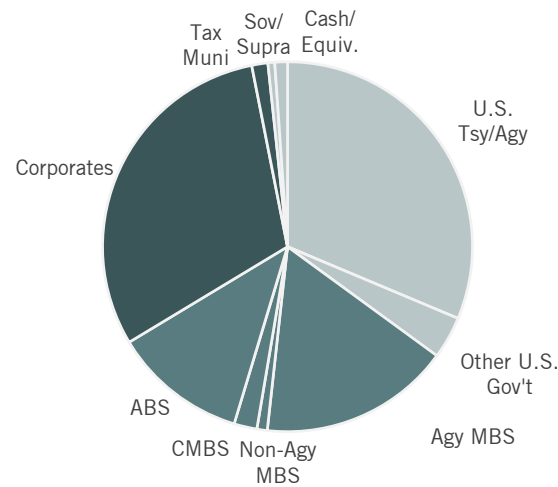
## PORTFOLIO AS OF 9/30/18

### MANAGER ALLOCATION



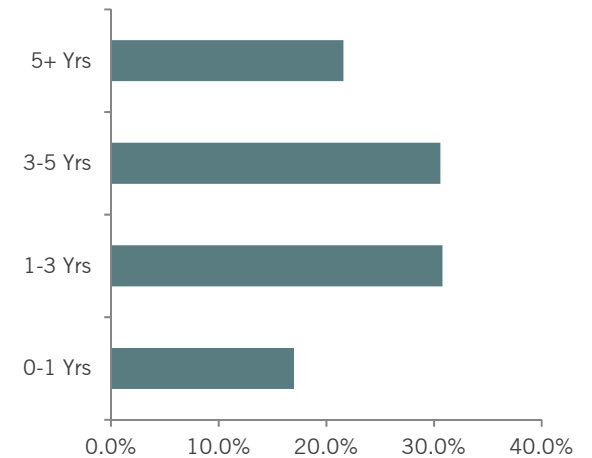
STIF	1.5%
Galliard	47.2%
Dodge & Cox	10.6%
TCW	10.2%
Jennison	10.1%
Payden & Rygel	10.2%
Prudential	10.1%
<b>TOTAL EXT. MANAGER</b>	<b>51.2%</b>
<b>TOTAL PORTFOLIO</b>	<b>100%</b>

### UNDERLYING FIXED INCOME SECTOR ALLOCATION



U.S. Tsy/Agy	31.3%
Other U.S. Gov't	3.7%
Agy MBS	16.7%
Non-Agy MBS	0.9%
CMBS	2.0%
ABS	11.7%
Corporates	30.5%
Tax Muni/Not-for-Profit	1.4%
Sov/Supra	0.6%
Cash/Equiv.	1.1%

### UNDERLYING DURATION DISTRIBUTION



0-1 Yrs	17.0%
1-3 Yrs	30.8%
3-5 Yrs	30.6%
5+ Yrs	21.6%

## STATE OF NORTH CAROLINA STABLE VALUE FUND

### MARKET VALUE PERFORMANCE SUMMARY AS OF 9/30/18

#### SHORT DURATION

Manager	1 Month	3 Months	1 Year	3 Years	5 Years	Since Inception	Inception
<b>Galliard*</b>	<b>0.02%</b>	<b>0.50%</b>	<b>0.75%</b>	<b>1.22%</b>	-	<b>0.59%</b>	<b>6/1/2018</b>
Bloomberg Barclays U.S. 1-3 Yr. Government/Credit	<u>-0.07%</u>	<u>0.33%</u>	<u>0.20%</u>	<u>0.73%</u>	-	<u>0.35%</u>	
	0.09%	0.17%	0.54%	0.49%	-	0.24%	

#### INTERMEDIATE DURATION

Manager	1 Month	3 Months	1 Year	3 Years	5 Years	Since Inception	Inception
<b>Dodge &amp; Cox</b>	<b>-0.16%</b>	<b>0.51%</b>	<b>-0.32%</b>	<b>1.85%</b>	-	<b>1.50%</b>	<b>3/1/2015</b>
Bloomberg Barclays U.S. Intermediate Aggregate	<u>-0.47%</u>	<u>0.11%</u>	<u>-0.93%</u>	<u>0.95%</u>	-	<u>1.03%</u>	
	0.31%	0.40%	0.61%	0.90%	-	0.47%	
<b>Galliard</b>	<b>-0.44%</b>	<b>0.23%</b>	-	-	-	<b>0.22%</b>	<b>6/1/2018</b>
Bloomberg Barclays U.S. Intermediate Aggregate	<u>-0.47%</u>	<u>0.11%</u>	-	-	-	<u>0.08%</u>	
	0.03%	0.12%	-	-	-	0.14%	
<b>Jennison**</b>	<b>-0.39%</b>	<b>0.27%</b>	<b>-0.46%</b>	<b>1.32%</b>	<b>1.95%</b>	<b>0.83%</b>	<b>5/1/2018</b>
Bloomberg Barclays U.S. Intermediate Govt/Credit	<u>-0.40%</u>	<u>0.21%</u>	<u>-0.96%</u>	<u>0.91%</u>	<u>1.52%</u>	<u>0.75%</u>	
	0.02%	0.06%	0.50%	0.41%	0.43%	0.08%	
<b>Payden &amp; Rygel</b>	<b>-0.34%</b>	<b>0.28%</b>	<b>0.44%</b>	<b>1.07%</b>	<b>1.09%</b>	<b>1.83%</b>	<b>7/1/2009</b>
Bloomberg Barclays U.S. Intermediate Aggregate***	<u>-0.47%</u>	<u>0.11%</u>	<u>-0.06%</u>	<u>0.64%</u>	<u>0.77%</u>	<u>1.27%</u>	
	0.13%	0.16%	0.50%	0.43%	0.31%	0.56%	
<b>Prudential</b>	<b>-0.36%</b>	<b>0.35%</b>	<b>-0.51%</b>	-	-	<b>1.51%</b>	<b>2/1/2016</b>
Bloomberg Barclays U.S. Intermediate Aggregate	<u>-0.47%</u>	<u>0.11%</u>	<u>-0.93%</u>	-	-	<u>0.79%</u>	
	0.11%	0.24%	0.42%	-	-	0.73%	
<b>TCW</b>	<b>-0.44%</b>	<b>0.21%</b>	-	-	-	<b>0.37%</b>	<b>6/1/2018</b>
Bloomberg Barclays U.S. Intermediate Govt/Credit	<u>-0.40%</u>	<u>0.21%</u>	-	-	-	<u>0.15%</u>	
	-0.04%	0.00%	-	-	-	0.22%	

\*Performance inception: June 1, 2018. Prior to June 1, 2018 returns are linked to Wells Fargo Fixed Income Fund F (Galliard)

\*\*Performance inception: May 1, 2018. Prior to May 1, 2018 returns are linked to Wells Fargo Fixed Income Fund N (Jennison)

\*\*\*Linked Benchmark: Bloomberg Barclays U.S. Intermediate Aggregate Bond Index. Prior to Jun 1, 2018 benchmark was Bloomberg Barclays U.S. 1-3 Year Government/Credit Bond Index.

## STATE OF NORTH CAROLINA STABLE VALUE FUND

### PERFORMANCE COMMENTARY – EXCESS RETURN

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#### **GALLIARD SHORT +17 Q3 2018**

- Security selection in Corporates helped overall performance, as did allocations to AAA-rated consumer Asset Backed Securities
- Overweight to 3-5 year maturities hurt returns, as the belly of the curve underperformed shorter issues

#### **PAYDEN & RYSEL +16 Q3 2018**

- Short duration positioning benefited performance
- The overweight to corporate credit also contributed positively to performance
- The portfolio's positioning in Mortgage Backed Securities detracted marginally

#### **GALLIARD INTERMEDIATE +12 Q3 2018**

- Overweight to the spread sectors, including Corporates, Asset Backed Securitizations, and U.S. Government securitizations, helped performance as they generally outperformed U.S. Treasuries with similar maturities
- Overweight to the belly of the yield curve added modestly to returns, as the belly of the curve outperformed longer term issues on the quarter

#### **DODGE & COX +40 Q3 2018**

- The bias to corporate credit in place of U.S. Treasuries was the primary driver of performance
- Short duration positioning also added to relative performance
- Security selection within Agency MBS detracted slightly

#### **TCW +0 Q3 2018**

- Allocation favoring out-of-index securitized sectors contributed positively to performance
- Long duration positioning offset the benefits of sector allocation and yield curve positioning

#### **JENNISON +6 Q3 2018**

- Security selection within corporate credit was the primary driver of performance
- Longer duration positioning detracted from performance as rates rose across the curve, offsetting the relative contribution from yield curve positioning

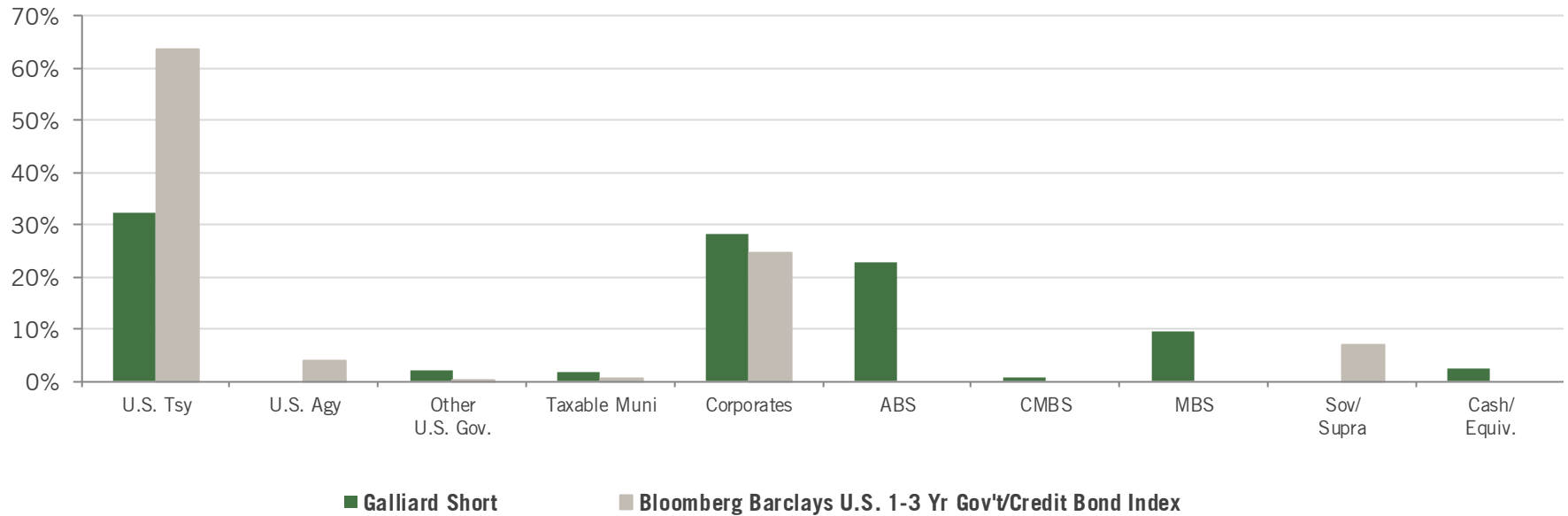
#### **PRUDENTIAL +24 Q3 2018**

- Positioning favoring spread product over Treasuries was the primary driver of performance for the quarter
- While security selection in general benefited the portfolio, security selection within CMBS and ABS detracted from performance

## STATE OF NORTH CAROLINA STABLE VALUE FUND

### SHORT DURATION PORTFOLIO AS OF 9/30/18

#### BLOOMBERG BARCLAYS U.S. 1-3 YEAR GOVERNMENT/CREDIT BOND INDEX

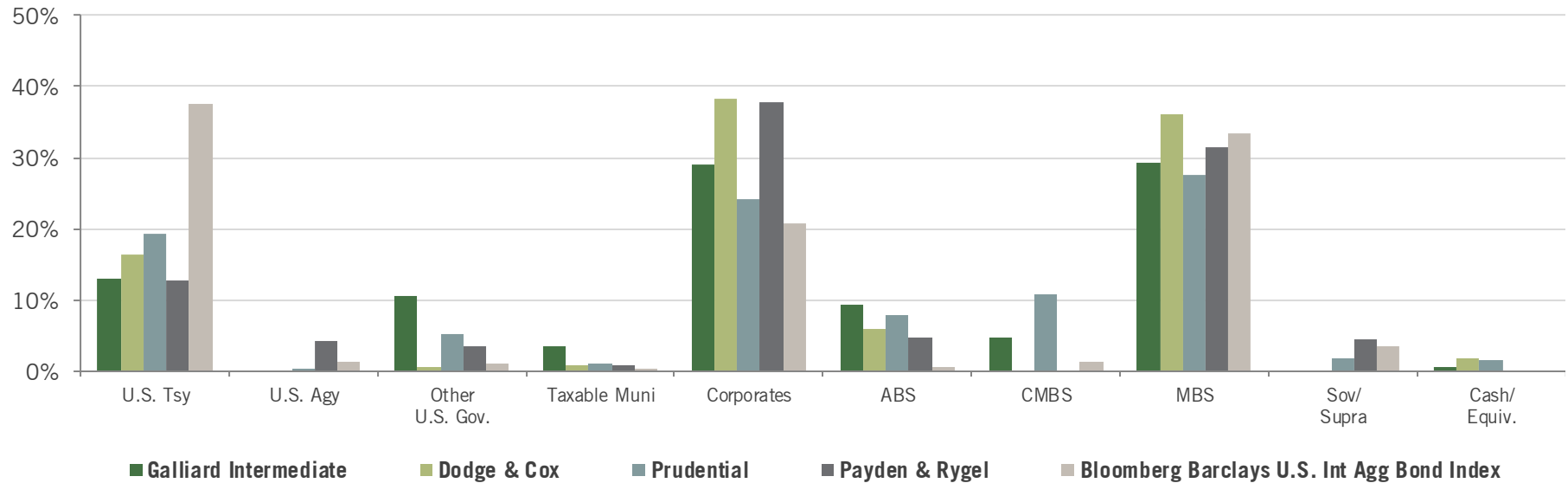


Characteristic	Galliard Short	Bloomberg Barclays U.S. 1-3 Yr Gov't/Credit Bond Index
Weighted Average Quality	AA	AA
Effective Duration	1.90 Yrs	1.84 Yrs
Yield to Maturity	3.04%	2.93%

## STATE OF NORTH CAROLINA STABLE VALUE FUND

### INTERMEDIATE DURATION PORTFOLIOS AS OF 9/30/18

#### BLOOMBERG BARCLAYS U.S. INTERMEDIATE AGGREGATE BOND INDEX

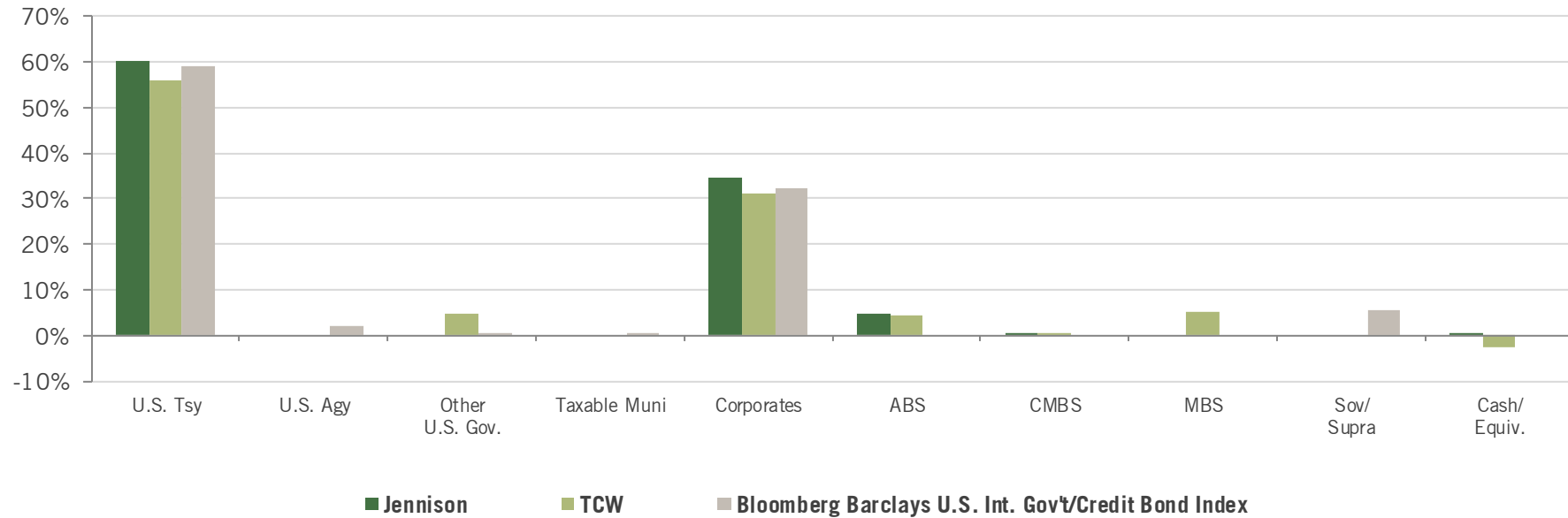


Characteristic	Galliard Intermediate	Dodge & Cox	Payden & Rygel	Prudential	Bloomberg Barclays U.S. Int Agg Bond Index
Weighted Average Quality	AA	AA-	AA-	AA	AA+
Effective Duration	4.27 Yrs	3.86 Yrs	3.94 Yrs	4.43 Yrs	4.31 Yrs
Yield to Maturity	3.50%	3.58%	3.47%	3.63%	3.34%

## STATE OF NORTH CAROLINA STABLE VALUE FUND

### INTERMEDIATE DURATION PORTFOLIOS AS OF 9/30/18

#### BLOOMBERG BARCLAYS U.S. INTERMEDIATE GOVERNMENT/CREDIT BOND INDEX



Characteristic	Jennison	TCW	Bloomberg Barclays U.S. Int Gov't/Credit Bond Index
Weighted Average Quality	AA+	AA	AA
Effective Duration	3.99 Yrs	4.20 Yrs	3.83 Yrs
Yield to Maturity	3.18%	3.29%	3.20%