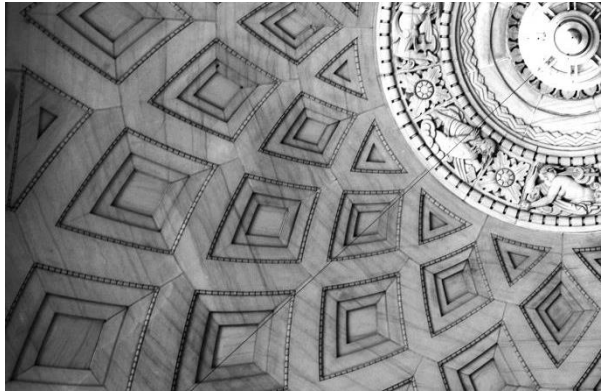




ARCHITECTS OF INVESTMENT SOLUTIONS



**State of North Carolina**

JUNE 20, 2019

# STATE OF NORTH CAROLINA

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<b>SECTION I:</b>	Galliard Capital Management Firm Update
<b>SECTION II:</b>	State of North Carolina Stable Value Fund Review
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## SECTION I

---

# GALLIARD CAPITAL MANAGEMENT

## WHO WE ARE

**\$92.0 B**

TOTAL AUM

**\$78.2 B**

TOTAL STABLE VALUE AUM

**95+**

STABLE VALUE SEPARATE  
ACCOUNTS

**104**

EMPLOYEES ON STAFF

SENIOR PROFESSIONALS AVERAGE  
YEARS OF EXPERIENCE:

Stable value portfolio management team – **25**

Fixed income team – **21**

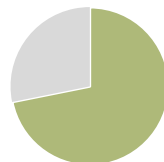
Contract management & negotiation team – **25**

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

**24** Fortune 100 clients; **62** 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, 2018, 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

2019 NEW BUSINESS

**3** new clients; **\$534 M** new assets

## SECTION II

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

First Quarter 2019

## STATE OF NORTH CAROLINA STABLE VALUE FUND

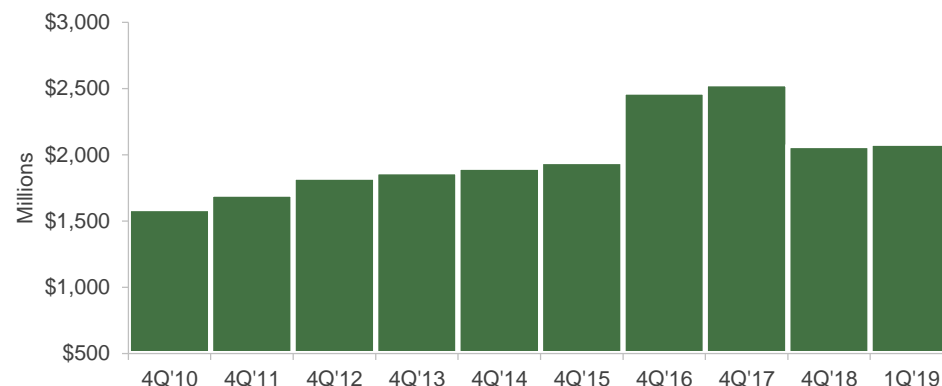
### ACCOUNT SUMMARY

<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>	\$2,085,319,763

### PORTFOLIO CHARACTERISTICS

	Portfolio 12/31/18	Portfolio 3/31/19
<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>	2.41%	2.54%
<b>Yield to Maturity</b>	3.22%	2.84%
<b>Effective Duration</b>	3.18 years	3.10 years
<b>Market/Book Value Ratio</b>	98.83%	100.26%

## HISTORICAL FUND ASSETS



### PORTFOLIO DISTRIBUTION

	% Portfolio 12/31/18	% Portfolio 3/31/19
<b>Liquidity Buffer: Cash &amp; Equivalents<sup>4</sup></b>	1.8	1.9
<b>Short Portfolio</b>	32.9	32.7
<b>Intermediate Portfolio</b>	65.3	65.4
<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.

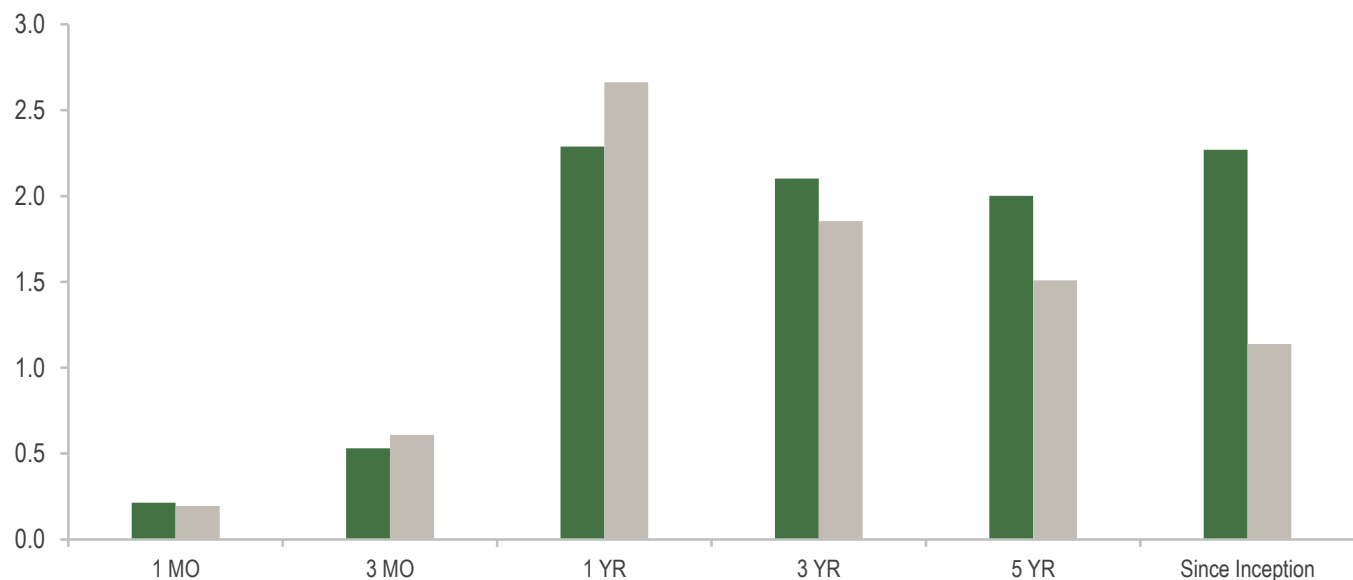
4: Includes Receivables and Payables.

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

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

First Quarter 2019

## ANNUALIZED INVESTMENT PERFORMANCE AS OF 3/31/19<sup>1</sup>



<b>Book Value Performance</b>	<b>1 Mo.</b>	<b>3 Mo.</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>	0.21	0.53	2.29	2.10	2.00	2.27
■ 3 Year Constant Maturity Treasury	0.20	0.61	2.66	1.85	1.51	1.14
Benchmark <sup>4</sup>	0.35	0.98	3.66	2.72	2.27	2.00
<b>Value Added (net of all fees - NAV level)<sup>6</sup></b>	<b>0.02</b>	<b>(0.08)</b>	<b>(0.37)</b>	<b>0.25</b>	<b>0.49</b>	<b>1.13</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 Tsy Bill Index+150 bps

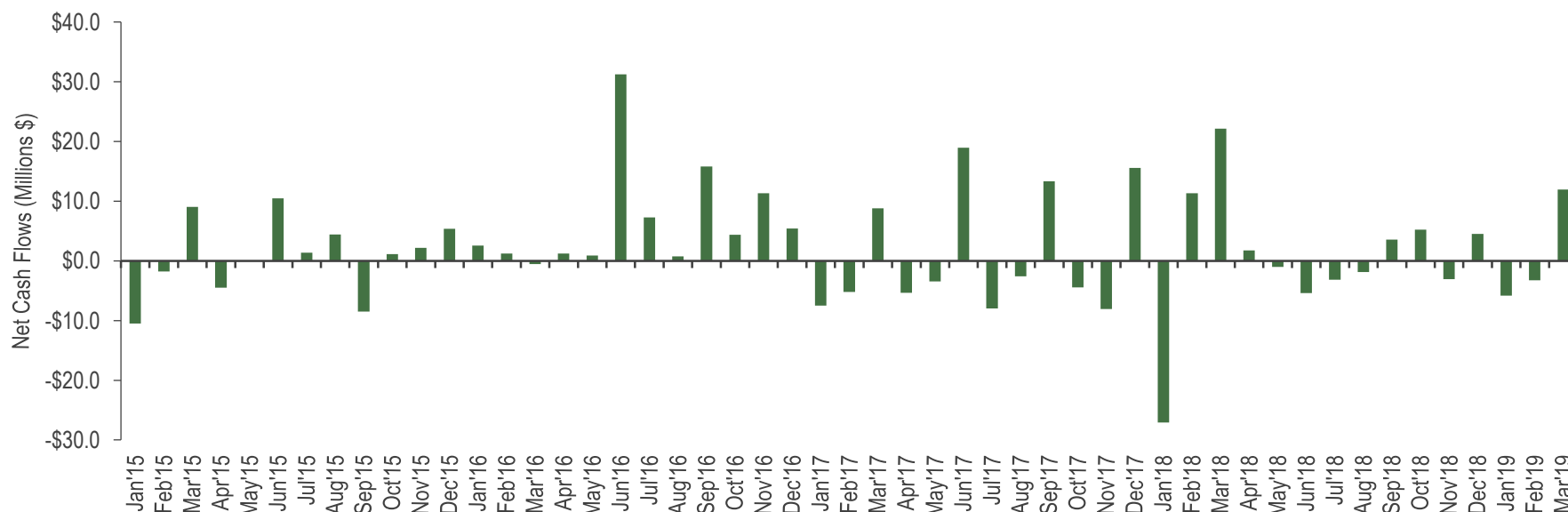
5: Galliard assumed management of this portfolio on Dec 01, 2010. Performance for periods referenced prior to this date include historical performance of another investment advisor.

6: May not add due to rounding.

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

First Quarter 2019

## HISTORICAL CASHFLOWS



	2015	2016	2017	2018	1Q'19
Beginning Assets	\$1,904.2	\$1,948.6	\$2,472.8	\$2,535.1	\$2,069.8
Net Cash Flow (\$) <sup>1</sup>	\$8.8	\$81.5 <sup>4</sup>	\$12.2	\$6.9 <sup>3</sup>	\$2.9
Net Cash Flow (%)	0.46%	4.18%	0.49%	0.27%	0.14%
Estimated Investment Earnings	\$35.7	\$46.9	\$50.1	\$51.6	\$12.6
Ending Assets <sup>2</sup>	\$1,948.6	\$2,472.8	\$2,535.1	\$2,069.8	\$2,085.3

1: Contributions, Withdrawals and Investment Transfers

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

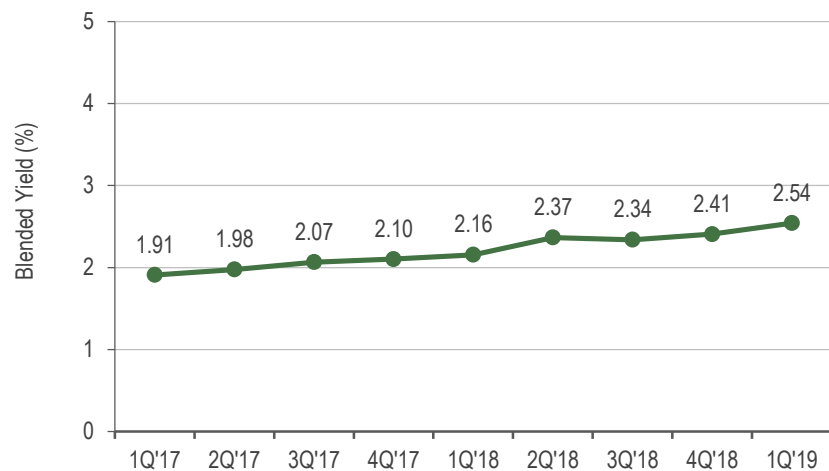
3: Excludes Prudential GoalMaker withdrawal of approximately \$523.8 M on 6/8/18 for illustrative purposes.

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.

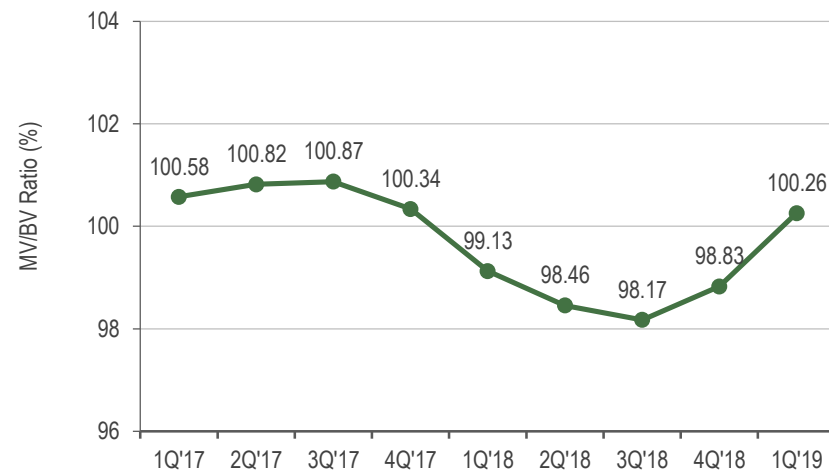
# STABLE VALUE PORTFOLIO REVIEW - STATE OF NORTH CAROLINA STABLE VALUE FUND

First Quarter 2019

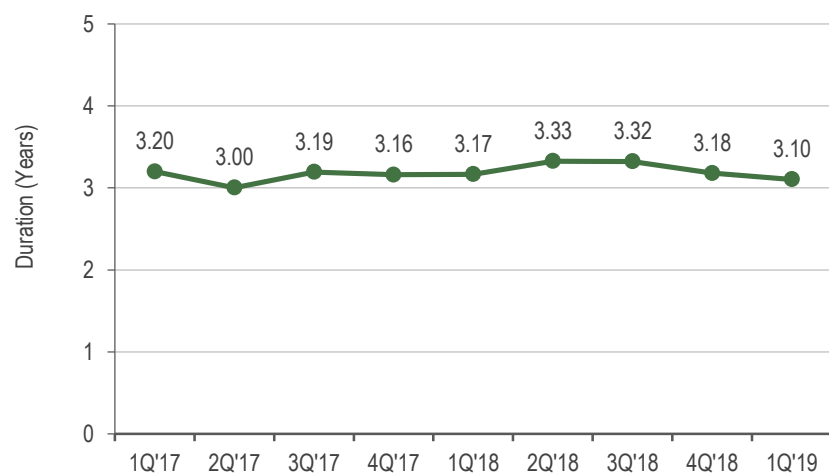
## HISTORICAL BLENDED YIELD<sup>1</sup>



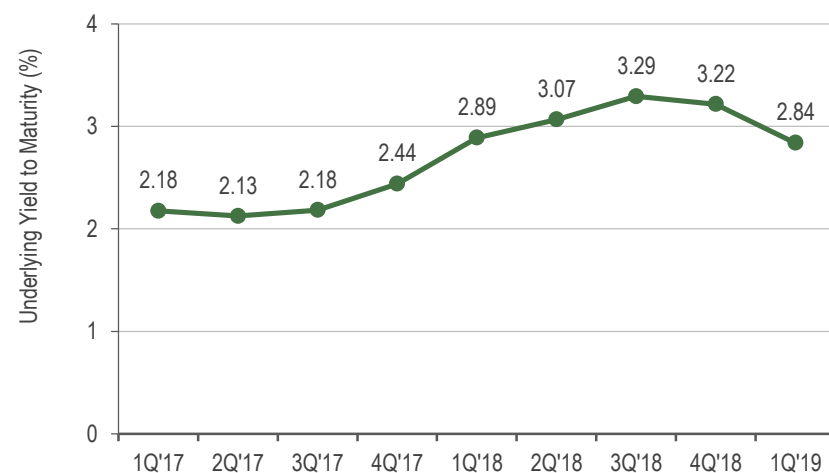
## HISTORICAL MARKET VALUE TO BOOK VALUE RATIO



## 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.

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

First Quarter 2019

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

	% Portfolio 12/31/18	% Portfolio 3/31/19	Rating 12/31/18	Rating 3/31/19
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	25.3	25.3	AA-	AA-
Transamerica Premier Life Ins. Co.	24.4	24.4	A+	A+

1: 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

March 31, 2019

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)			-1,361,148	-1,361,148	100.0	-0.1	2.63	2.63	0.10	AAA	
9983008\$P	WF/BlackRock Short Term Investment Fund S			40,268,678	40,268,678	100.0	1.9	2.63	2.63	0.10	AAA	
<b>TOTAL LIQUIDITY BUFFER</b>				38,907,529	38,907,529	100.0	1.9	2.63	2.63	0.10	AAA	
<b>SHORT PORTFOLIO</b>												
946996EE1	American General Life Ins. Co.	SBIC	Galliard	205,144,167	205,764,980	100.3	9.8	2.67	2.72	1.86	A+	18.0
896994GW4	Nationwide Life Ins. Co.	SBIC	Galliard	175,882,605	176,472,837	100.3	8.4	2.68	2.72	1.86	A+	17.0
744999CV3	Prudential Ins. Co. of America	SBIC	Galliard	104,604,548	105,663,194	101.0	5.0	2.87	2.72	1.86	AA-	17.0
600996QF2	Transamerica Premier Life Ins. Co.	SBIC	Galliard	196,510,459	195,368,168	99.4	9.4	2.39	2.72	1.86	A+	17.0
<b>TOTAL SHORT PORTFOLIO</b>				682,141,779	683,269,180	100.2	32.7	2.62	2.72	1.86	A+	
<b>INTERMEDIATE PORTFOLIO</b>												
590994VM8	Metropolitan Life Ins. Co.	SAGIC	Dodge & Cox	220,525,035	221,003,776	100.2	10.6	2.77	3.14	3.46	AA-	19.0
946996EE1	American General Life Ins. Co.	SBIC	Payden & Rygel	213,264,584	213,909,972	100.3	10.2	2.67	2.94	3.73	A+	18.0
896994GW4	Nationwide Life Ins. Co.	SBIC	Galliard	196,588,185	197,247,902	100.3	9.4	2.68	2.99	3.80	A+	17.0
744999CV3	Prudential Ins. Co. of America	SBIC	Jennison Assoc.	210,757,513	212,890,477	101.0	10.1	2.87	2.57	4.04	AA-	17.0
744999CV3	Prudential Ins. Co. of America	SBIC	Prudential	211,398,961	213,538,416	101.0	10.1	2.87	3.05	3.83	AA-	17.0
600996QF2	Transamerica Premier Life Ins. Co.	SBIC	Galliard	98,463,658	97,891,301	99.4	4.7	2.39	2.99	3.80	A+	17.0
600996QF2	Transamerica Premier Life Ins. Co.	SBIC	TCW	213,272,519	212,032,793	99.4	10.2	2.39	2.70	4.01	A+	17.0
<b>TOTAL INTERMEDIATE PORTFOLIO</b>				1,364,270,455	1,368,514,636	100.3	65.4	2.69	2.91	3.81	A+	
<b>TOTAL PORTFOLIO</b>				2,085,319,763	2,090,691,345	100.3	100.0	2.66	2.84	3.10	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

First Quarter 2019

### 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 3/31/19	Per \$1000	Est. Annual Revenue
Investment Management Fees paid to Galliard	0.073%	\$0.73	\$1,529,791
Investment Management fees paid to Non-Affiliated Investment Advisors	0.058%	\$0.58	\$1,209,422
Investment Contract Fees <sup>1</sup>	0.171%	\$1.71	\$3,564,847
Acquired Fund Fees <sup>2</sup>	0.002%	\$0.02	\$32,215
-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>	0.002%	\$0.02	\$32,215
12b-1 Distribution Fee	None	None	None
Other Expenses	0.002%	\$0.02	\$42,184
Total Annual Fund Operating Expenses <sup>4</sup>	<b>0.306%</b>	<b>\$3.06</b>	<b>\$6,378,458</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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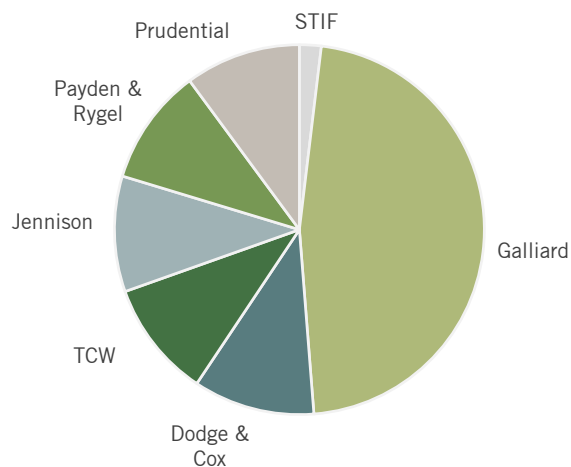
## STATE OF NORTH CAROLINA STABLE VALUE FUND MANAGER STYLES

	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 Important    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 Important    More Important	Corporate credit, Agency MBS
<b>TCW</b>	 Bottom Up    Top Down	 Low    High	 Low    High	 Less Important    More Important	Duration, structured credit, multi-sector relative value
<b>JENNISON</b>	 Bottom Up    Top Down	 Low    High	 Low    High	 Less Important    More Important	Credit, yield-curve positioning
<b>PAYDEN &amp; RYSEL</b>	 Bottom Up    Top Down	 Low    High	 Low    High	 Less Important    More Important	Corporate credit, structured credit, multi-sector relative value
<b>PRUDENTIAL</b>	 Bottom Up    Top Down	 Low    High	 Low    High	 Less Important    More Important	Multi-sector relative value, Agency MBS, global focus

# STATE OF NORTH CAROLINA STABLE VALUE FUND

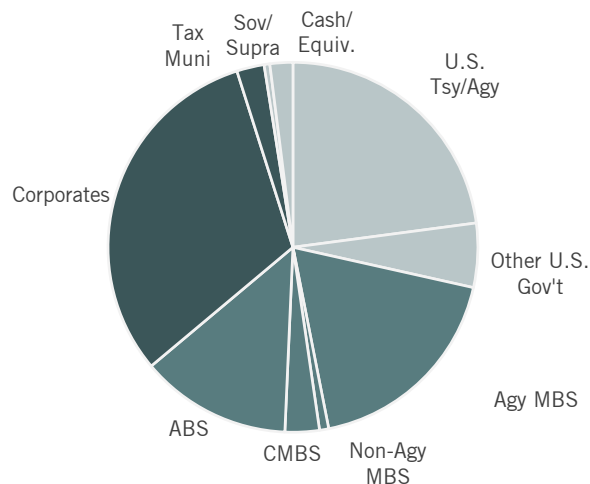
## PORTFOLIO AS OF 3/31/19

### MANAGER ALLOCATION



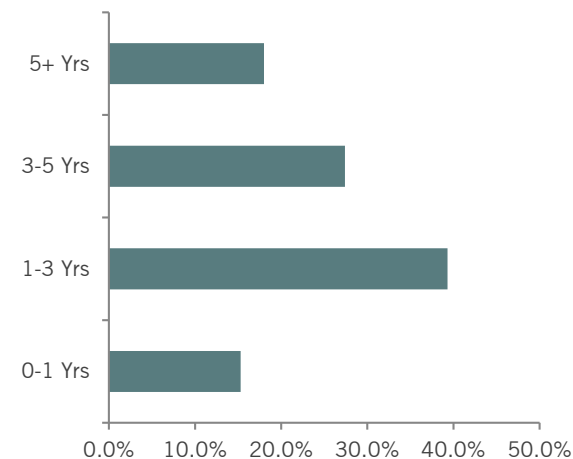
STIF	1.9%
Galliard	46.8%
Dodge & Cox	10.6%
TCW	10.2%
Jennison	10.1%
Payden & Rygel	10.2%
Prudential	10.1%
<b>TOTAL EXT. MANAGER</b>	<b>51.2%</b>
<b>TOTAL PORTFOLIO</b>	<b>100%</b>

### UNDERLYING FIXED INCOME SECTOR ALLOCATION



U.S. Tsy/Agy	22.9%
Other U.S. Gov't	5.6%
Agy MBS	18.4%
Non-Agy MBS	0.8%
CMBS	3.0%
ABS	13.2%
Corporates	31.2%
Tax Muni/Not-for-Profit	2.4%
Sov/Supra	0.5%
Cash/Equiv.	2.0%

### UNDERLYING DURATION DISTRIBUTION



0-1 Yrs	15.3%
1-3 Yrs	39.3%
3-5 Yrs	27.4%
5+ Yrs	18.0%

# STATE OF NORTH CAROLINA STABLE VALUE FUND

## MARKET VALUE PERFORMANCE SUMMARY AS OF 3/31/19

### SHORT DURATION

Manager	1 Month	3 Months	1 Year	3 Years	5 Years	Since Inception	Inception
<b>Galliard*</b>	<b>0.71%</b>	<b>1.52%</b>	-	-	-	<b>3.19%</b>	<b>6/1/2018</b>
Bloomberg Barclays U.S. 1-3 Yr. Government/Credit	<u>0.66%</u>	<u>1.21%</u>	-	-	-	<u>2.75%</u>	
	0.05%	0.31%	-	-	-	0.44%	

### INTERMEDIATE DURATION

Manager	1 Month	3 Months	1 Year	3 Years	5 Years	Since Inception	Inception
<b>Dodge &amp; Cox</b>	<b>1.47%</b>	<b>2.93%</b>	<b>4.47%</b>	<b>2.36%</b>	-	<b>2.27%</b>	<b>3/1/2015</b>
Bloomberg Barclays U.S. Intermediate Aggregate	<u>1.39%</u>	<u>2.28%</u>	<u>4.33%</u>	<u>1.71%</u>	-	<u>1.91%</u>	
	0.08%	0.65%	0.14%	0.65%	-	0.36%	
<b>Galliard</b>	<b>1.46%</b>	<b>2.58%</b>	-	-	-	<b>4.52%</b>	<b>6/1/2018</b>
Bloomberg Barclays U.S. Intermediate Aggregate	<u>1.39%</u>	<u>2.28%</u>	-	-	-	<u>4.21%</u>	
	0.07%	0.30%	-	-	-	0.31%	
<b>Jennison**</b>	<b>1.32%</b>	<b>2.20%</b>	<b>4.29%</b>	<b>1.95%</b>	<b>2.46%</b>	<b>4.81%</b>	<b>5/1/2018</b>
Bloomberg Barclays U.S. Intermediate Govt/Credit	<u>1.35%</u>	<u>2.32%</u>	<u>4.24%</u>	<u>1.66%</u>	<u>2.12%</u>	<u>4.79%</u>	
	-0.03%	-0.12%	0.05%	0.29%	0.34%	0.02%	
<b>Payden &amp; Rygel</b>	<b>1.34%</b>	<b>2.35%</b>	<b>4.49%</b>	<b>2.11%</b>	<b>1.70%</b>	<b>2.13%</b>	<b>7/1/2009</b>
Bloomberg Barclays U.S. Intermediate Aggregate***	<u>1.39%</u>	<u>2.28%</u>	<u>4.49%</u>	<u>1.79%</u>	<u>1.51%</u>	<u>1.63%</u>	
	-0.05%	0.07%	0.00%	0.32%	0.19%	0.50%	
<b>Prudential</b>	<b>1.36%</b>	<b>2.51%</b>	<b>4.62%</b>	<b>2.23%</b>	-	<b>2.58%</b>	<b>2/1/2016</b>
Bloomberg Barclays U.S. Intermediate Aggregate	<u>1.39%</u>	<u>2.28%</u>	<u>4.33%</u>	<u>1.71%</u>	-	<u>1.95%</u>	
	-0.03%	0.23%	0.29%	0.52%	-	0.63%	
<b>TCW</b>	<b>1.39%</b>	<b>2.41%</b>	-	-	-	<b>4.69%</b>	<b>6/1/2018</b>
Bloomberg Barclays U.S. Intermediate Govt/Credit	<u>1.35%</u>	<u>2.32%</u>	-	-	-	<u>4.17%</u>	
	0.04%	0.09%	-	-	-	0.52%	

\*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 +31 Q1 2019**

- An underweight to US Treasuries was the primary driver of outperformance, as credit spreads retraced most of the December sell off
- An overweight to corporate securities proved especially beneficial
- Curve positioning, with an overweight in 3 to 5 year maturities, also added to returns
- Detracting from performance was an allocation to SBA securitizations

#### **GALLIARD INTERMEDIATE +30 Q1 2019**

- An underweight to US Treasuries was the primary driver of outperformance, as credit spreads retraced most of the December sell off
- An overweight to corporate securities proved especially beneficial
- Detracting from performance was security selection in corporates, as the higher quality names held in the portfolio underperformed lower quality issuers on the quarter

#### **DODGE & COX +65 Q1 2019**

- The overweight to Corporate Credit as well as security selection within the sector was the primary driver of relative performance
- The portfolio's shorter relative duration position detracted

#### **JENNISON -12 Q1 2019**

- The underweight to Credit detracted from performance
- Yield curve positioning, including a front-end steepener and long-end flattener position, also detracted from performance

#### **PAYDEN & RYGEL +7 Q1 2019**

- The portfolio's allocation to Corporate Credit was the primary driver of positive performance
- Security selection within MBS also contributed positively
- Short duration positioning negatively impacted performance

#### **PRUDENTIAL +23 Q1 2019**

- The overweight to Corporate Credit, CMBS and ABS drove outperformance for the quarter
- Security selection, particularly within ABS and CMBS, partially offset the underperformance from allocation

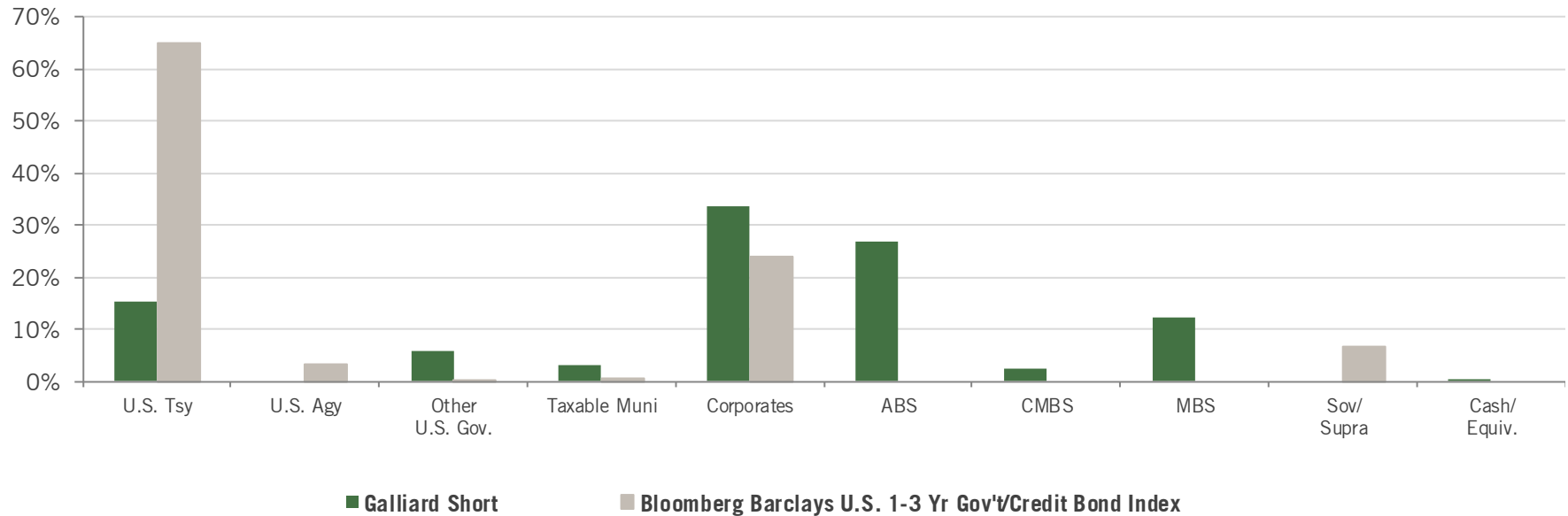
#### **TCW +9 Q1 2019**

- Long duration positioning contributed positively to relative performance
- Security selection within Structured sectors including MBS, ABS, and CMBS offset the performance benefits of the out-of-index allocations
- Security selection within Corporate Credit also added to returns

## STATE OF NORTH CAROLINA STABLE VALUE FUND

### SHORT DURATION PORTFOLIO AS OF 3/31/19

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

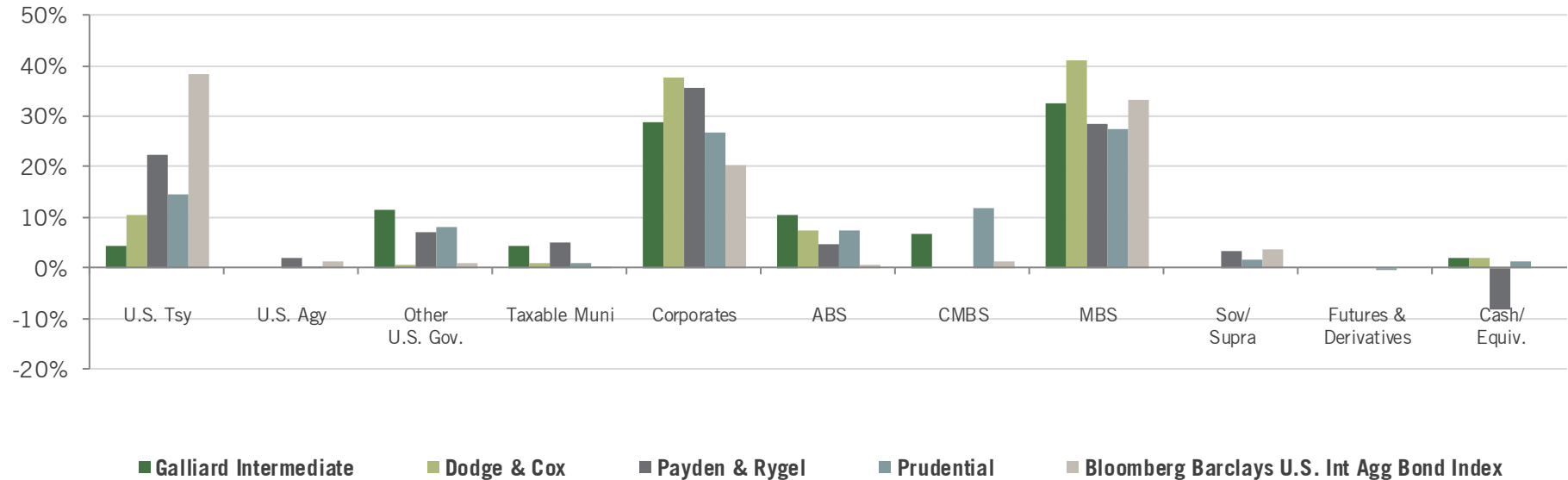


Characteristic	Galliard Short	Bloomberg Barclays U.S. 1-3 Yr Gov't/Credit Bond Index
Weighted Average Quality	AA	AA+
Effective Duration	1.86 Yrs	1.83 Yrs
Yield to Maturity	2.72%	2.46%

## STATE OF NORTH CAROLINA STABLE VALUE FUND

### INTERMEDIATE DURATION PORTFOLIOS AS OF 3/31/19

#### 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	3.80 Yrs	3.46 Yrs	3.73 Yrs	3.83 Yrs	3.92 Yrs
Yield to Maturity	2.99%	3.14%	2.94%	3.05%	2.78%

## STATE OF NORTH CAROLINA STABLE VALUE FUND

### INTERMEDIATE DURATION PORTFOLIOS AS OF 3/31/19

#### 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	4.04 Yrs	4.01 Yrs	3.83 Yrs
Yield to Maturity	2.57%	2.70%	2.62%