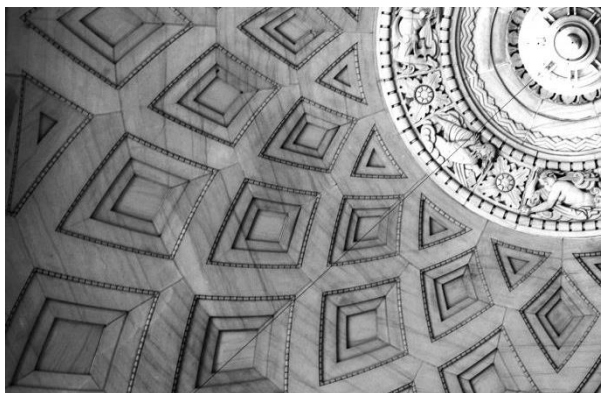




ARCHITECTS OF INVESTMENT SOLUTIONS



State of North Carolina

FEBRUARY 21, 2019

STATE OF NORTH CAROLINA

TABLE OF CONTENTS

SECTION I:	Galliard Capital Management Firm Update
SECTION II:	State of North Carolina Stable Value Fund Review
SECTION III:	Investment Manager Performance and Positioning

SECTION I

GALLIARD CAPITAL MANAGEMENT

WHO WE ARE

\$91.9 B

TOTAL AUM

\$78.8 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**

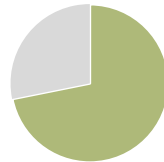
Contract management & negotiation team – **25**

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

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

GALLIARD

HIGHLIGHTS

Galliard is the **largest** stable value separate account manager¹ and advises the **largest** stable value collective fund² in the nation

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

²As 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

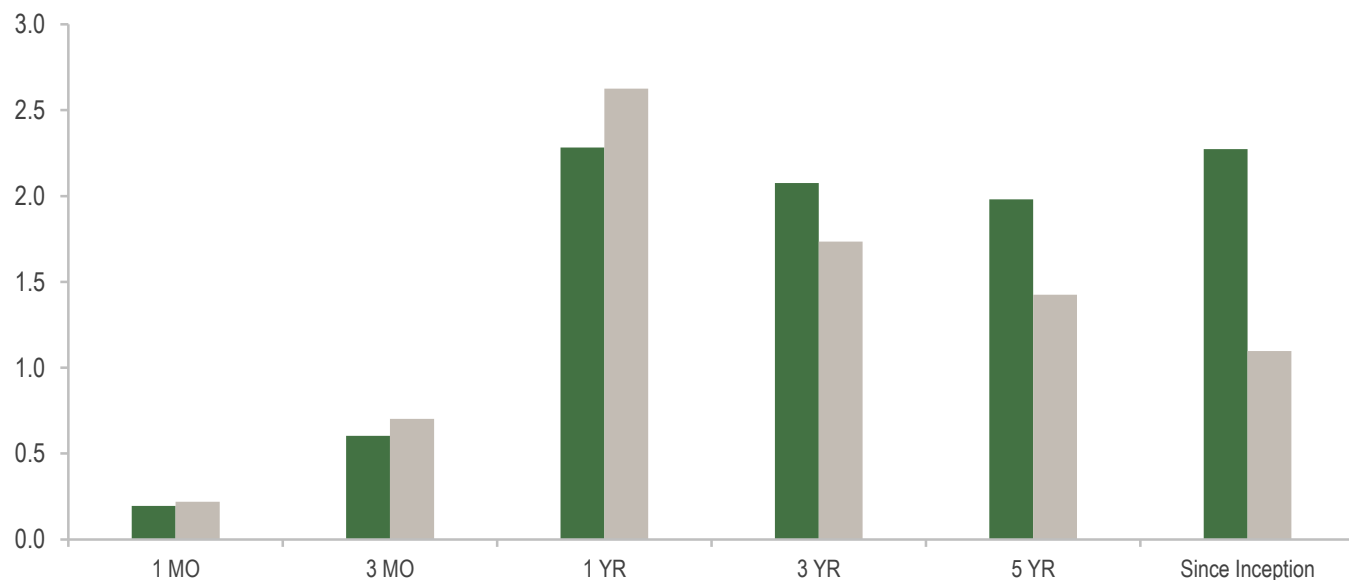
8 new clients; **\$672 M** new assets

SECTION II

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

Fourth Quarter 2018

ANNUALIZED INVESTMENT PERFORMANCE AS OF 12/31/18¹



Book Value Performance	1 Mo.	3 Mo.	1 Yr.	3 Yr.	5 Yr.	Since Inception⁵
■ Portfolio (net of all fees - NAV level) ^{2,3}	0.20	0.60	2.28	2.08	1.98	2.27
■ 3 Year Constant Maturity Treasury	0.22	0.70	2.63	1.73	1.42	1.10
Benchmark ⁴	0.31	0.94	3.41	2.54	2.15	1.94
Value Added (net of all fees - NAV level)⁶	(0.02)	(0.10)	(0.34)	0.34	0.56	1.18

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

Fourth Quarter 2018

STATE OF NORTH CAROLINA STABLE VALUE FUND

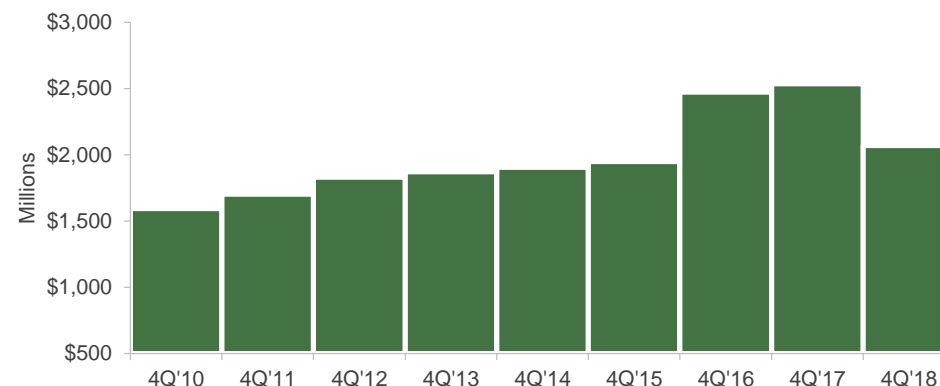
ACCOUNT SUMMARY

Benchmark	ICE BofAML US 3-Month Tsy Bill Index+150 bps, 3 Year Constant Maturity Treasury
Galliard Inception Date	December 1, 2010
Net Asset Value	\$2,069,783,840

PORTFOLIO CHARACTERISTICS

	Portfolio 9/30/18	Portfolio 12/31/18
Average Quality - Book Value¹	A+	A+
Average Quality - Market Value²	AA	AA
Number of Contract Issuers	5	5
Blended Yield (after all fees)³	2.34%	2.41%
Yield to Maturity	3.29%	3.22%
Effective Duration	3.32 years	3.18 years
Market/Book Value Ratio	98.17%	98.83%

HISTORICAL FUND ASSETS



PORTFOLIO DISTRIBUTION

	% Portfolio 9/30/18	% Portfolio 12/31/18
Liquidity Buffer: Cash & Equivalents⁴	1.5	1.8
Short Portfolio	33.1	32.9
Intermediate Portfolio	65.3	65.3
Total	100.0%⁵	100.0%⁵

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.

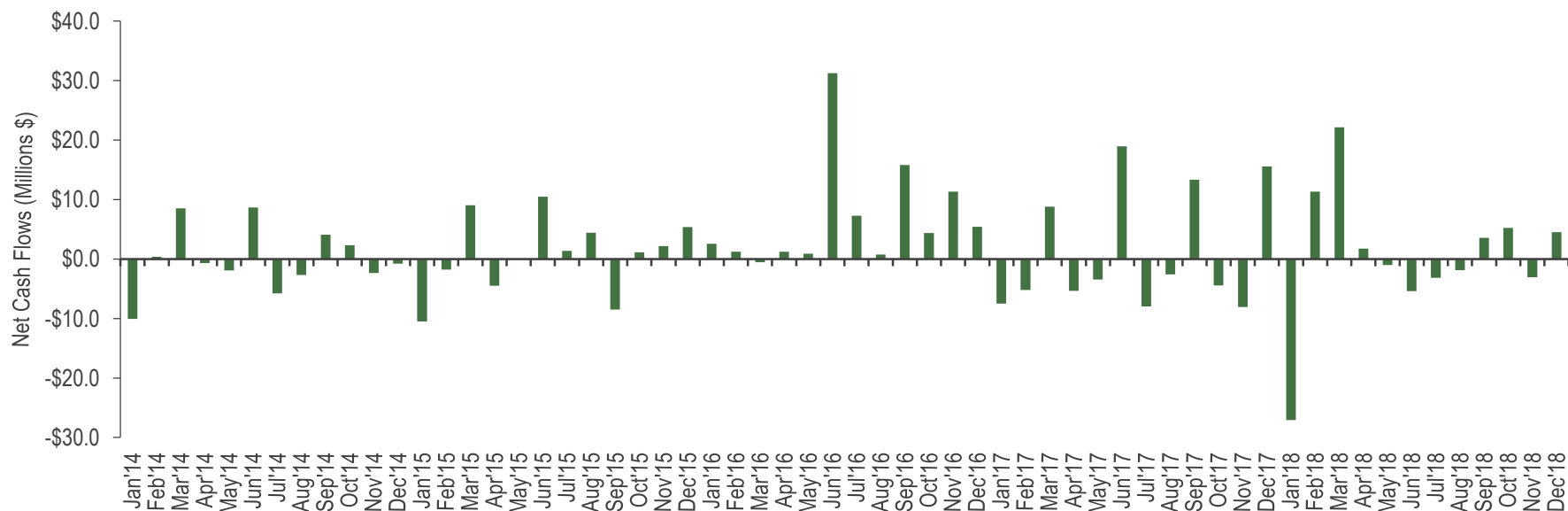
4: Includes Receivables and Payables.

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

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

Fourth Quarter 2018

HISTORICAL CASHFLOWS



	2014	2015	2016	2017	1Q'18	2Q'18	3Q'18	4Q'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	\$2,050.6	\$2,535.1
Net Cash Flow (\$)¹	-\$0.3	\$8.8	\$81.5⁴	\$12.2	\$6.4	-\$4.7³	-\$1.5	\$6.7	\$6.9
Net Cash Flow (%)	-0.02%	0.46%	4.18%	0.49%	0.25%	-0.18%	-0.06%	0.26%	0.27%
Estimated Investment Earnings	\$33.6	\$35.7	\$46.9	\$50.1	\$13.4	\$13.7	\$11.9	\$12.5	\$51.6
Ending Assets²	\$1,904.2	\$1,948.6	\$2,472.8	\$2,535.1	\$2,554.9	\$2,040.2	\$2,050.6	\$2,069.8	\$2,069.8

1: Contributions, Withdrawals and Investment Transfers

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

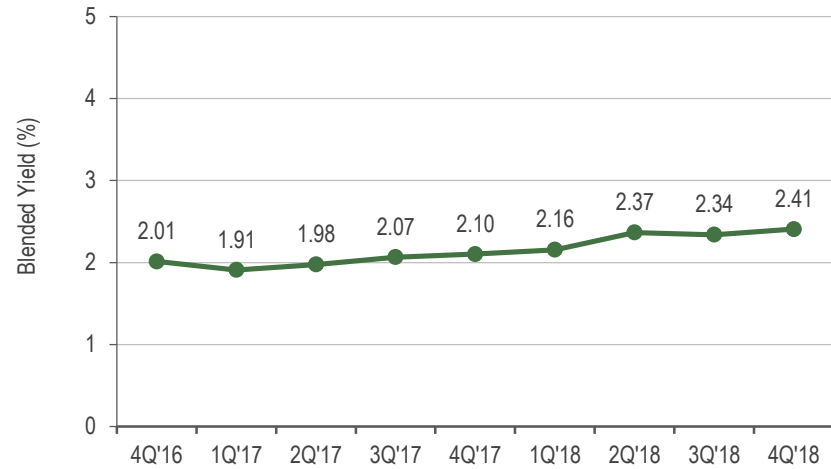
3: Excludes Prudential GoalMaker withdrawal of approximately \$523.8 M on 6/8/18 for illustrative purposes.

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.

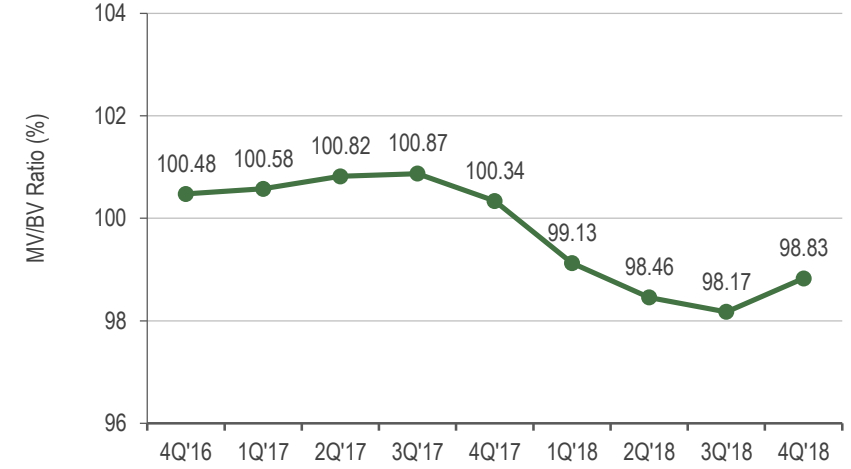
STABLE VALUE PORTFOLIO REVIEW - STATE OF NORTH CAROLINA STABLE VALUE FUND

Fourth Quarter 2018

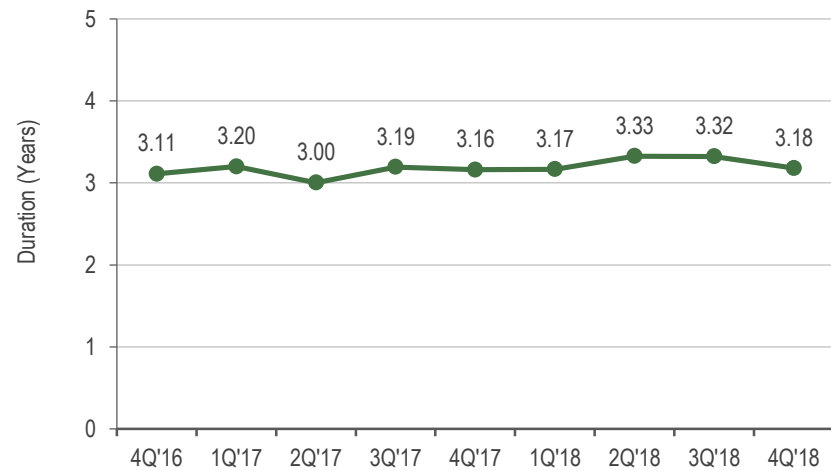
HISTORICAL BLENDED YIELD¹



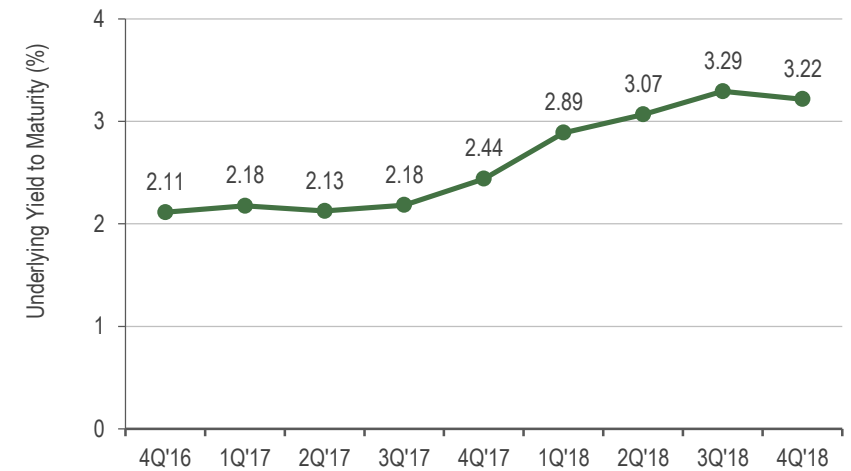
HISTORICAL MARKET VALUE TO BOOK VALUE RATIO



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

Fourth Quarter 2018

CONTRACT ISSUER DISTRIBUTION & RATING SUMMARY¹

	% Portfolio 9/30/18	% Portfolio 12/31/18	Rating 9/30/18	Rating 12/31/18
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	25.3	25.3	AA-	AA-
Transamerica Premier Life Ins. Co.	24.5	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

December 31, 2018

Asset ID	Security Description	Contract ¹ Type	Manager	Contract Value (\$)	Market Value (\$)	Market/Book Value Ratio (%)	% of Portfolio	Crediting Rate (%) ²	UCA Yield (%)	Effective Duration (yrs)	Galliard Composite Rating	Wrap Fees (bps)
LIQUIDITY BUFFER												
	Cash Receivable / (Payable)			-1,437,829	-1,437,829	100.0	-0.1	2.54	2.54	0.10	AAA	
9983008\$P	WF/BlackRock Short Term Investment Fund S			38,540,795	38,540,795	100.0	1.9	2.54	2.54	0.10	AAA	
TOTAL LIQUIDITY BUFFER				37,102,967	37,102,967	100.0	1.8	2.54	2.54	0.10	AAA	
SHORT PORTFOLIO												
946996EE1	American General Life Ins. Co.	SBIC	Galliard	204,587,402	202,684,754	99.1	9.9	2.57	3.04	1.84	A+	18.0
896994GW4	Nationwide Life Ins. Co.	SBIC	Galliard	175,639,318	173,831,104	99.0	8.5	2.53	3.04	1.84	A+	17.0
744999CV3	Prudential Ins. Co. of America	SBIC	Galliard	104,530,935	104,081,455	99.6	5.1	2.84	3.04	1.84	AA-	17.0
600996QF2	Transamerica Premier Life Ins. Co.	SBIC	Galliard	196,425,835	192,443,579	98.0	9.5	2.17	3.04	1.84	A+	17.0
TOTAL SHORT PORTFOLIO				681,183,489	673,040,892	98.8	32.9	2.49	3.04	1.84	A+	
INTERMEDIATE PORTFOLIO												
590994VM8	Metropolitan Life Ins. Co.	SAGIC	Dodge & Cox	219,060,694	214,932,535	98.1	10.6	2.78	3.61	3.73	AA-	19.0
946996EE1	American General Life Ins. Co.	SBIC	Payden & Rygel	210,964,159	209,002,208	99.1	10.2	2.57	3.35	3.71	A+	18.0
896994GW4	Nationwide Life Ins. Co.	SBIC	Galliard	194,287,978	192,287,775	99.0	9.4	2.53	3.40	3.98	A+	17.0
744999CV3	Prudential Ins. Co. of America	SBIC	Jennison Assoc.	209,199,311	208,299,762	99.6	10.1	2.84	2.97	4.03	AA-	17.0
744999CV3	Prudential Ins. Co. of America	SBIC	Prudential	209,198,290	208,298,745	99.6	10.1	2.84	3.40	3.96	AA-	17.0
600996QF2	Transamerica Premier Life Ins. Co.	SBIC	Galliard	97,404,397	95,429,661	98.0	4.7	2.17	3.40	3.98	A+	17.0
600996QF2	Transamerica Premier Life Ins. Co.	SBIC	TCW	211,382,554	207,097,072	98.0	10.2	2.17	3.20	4.26	A+	17.0
TOTAL INTERMEDIATE PORTFOLIO				1,351,497,384	1,335,347,758	98.8	65.3	2.59	3.33	3.95	A+	
TOTAL PORTFOLIO				2,069,783,840	2,045,491,616	98.8	100.0	2.56	3.22	3.18	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

Fourth 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 12/31/18	Per \$1000	Est. Annual Revenue
Investment Management Fees paid to Galliard	0.074%	\$0.74	\$1,524,396
Investment Management fees paid to Non-Affiliated Investment Advisors	0.058%	\$0.58	\$1,206,261
Investment Contract Fees ¹	0.171%	\$1.71	\$3,540,925
Acquired Fund Fees ²	0.001%	\$0.01	\$30,833
-Investment Contract Fees	None	None	None
-Other Acquired Fund Fees and Non-Affiliated Investment Management Fees paid to Non-Affiliated Investment Advisors ³	0.001%	\$0.01	\$30,833
12b-1 Distribution Fee	None	None	None
Other Expenses	0.027%	\$0.27	\$559,630
Total Annual Fund Operating Expenses⁴	0.332%	\$3.32	\$6,862,044

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

STATE OF NORTH CAROLINA STABLE VALUE FUND

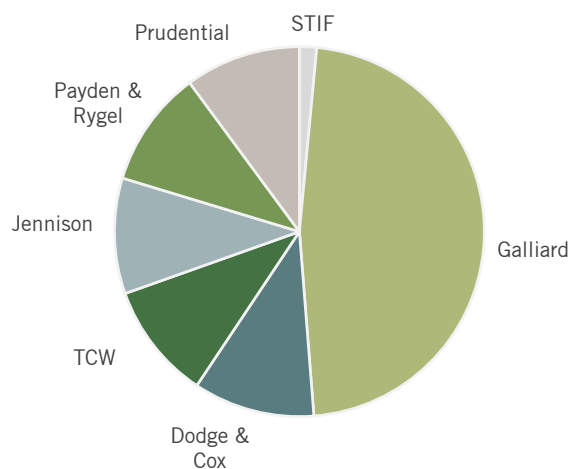
MANAGER STYLES

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

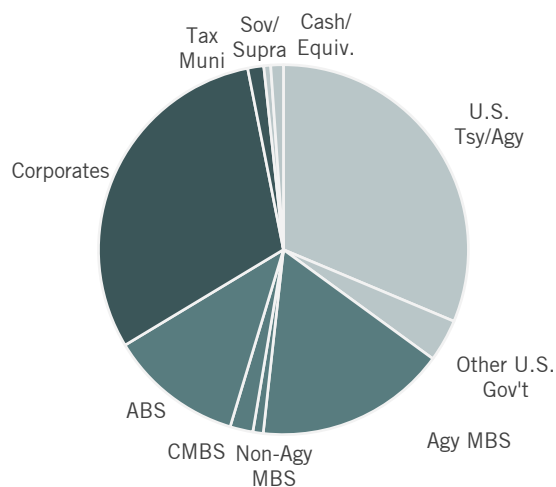
PORTFOLIO AS OF 12/31/18

MANAGER ALLOCATION



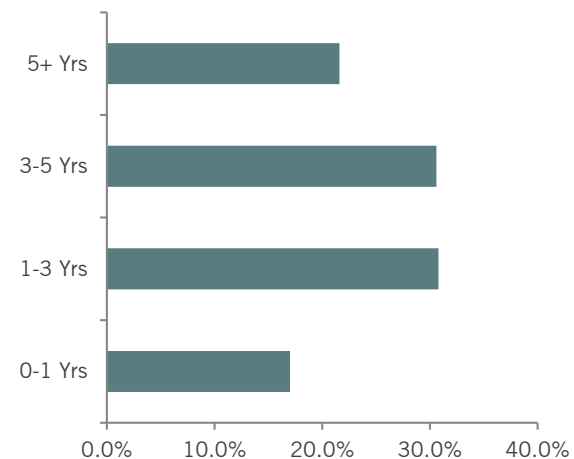
STIF	1.8%
Galliard	47.0%
Dodge & Cox	10.6%
TCW	10.2%
Jennison	10.1%
Payden & Rygel	10.2%
Prudential	10.1%
TOTAL EXT. MANAGER	51.3%
TOTAL PORTFOLIO	100%

UNDERLYING FIXED INCOME SECTOR ALLOCATION



U.S. Tsy/Agy	24.0%
Other U.S. Gov't	5.5%
Agy MBS	17.7%
Non-Agy MBS	0.9%
CMBS	3.0%
ABS	13.6%
Corporates	31.5%
Tax Muni/Not-for-Profit	1.9%
Sov/Supra	0.6%
Cash/Equiv.	1.4%

UNDERLYING DURATION DISTRIBUTION



0-1 Yrs	16.2%
1-3 Yrs	35.8%
3-5 Yrs	28.9%
5+ Yrs	19.1%

STATE OF NORTH CAROLINA STABLE VALUE FUND

MARKET VALUE PERFORMANCE SUMMARY AS OF 12/31/18

SHORT DURATION

Manager	1 Month	3 Months	1 Year	3 Years	5 Years	Since Inception	Inception
Galliard*	0.75%	1.05%	1.64%	1.62%	-	1.64%	6/1/2018
Bloomberg Barclays U.S. 1-3 Yr. Government/Credit	<u>0.78%</u>	<u>1.18%</u>	<u>1.60%</u>	<u>1.24%</u>	-	<u>1.53%</u>	
	-0.03%	-0.13%	0.04%	0.38%	-	0.11%	

INTERMEDIATE DURATION

Manager	1 Month	3 Months	1 Year	3 Years	5 Years	Since Inception	Inception
Dodge & Cox	1.07%	0.95%	0.42%	2.21%	-	1.65%	3/1/2015
Bloomberg Barclays U.S. Intermediate Aggregate	<u>1.50%</u>	<u>1.80%</u>	<u>0.92%</u>	<u>1.72%</u>	-	<u>1.43%</u>	
	-0.43%	-0.85%	-0.50%	0.49%	-	0.22%	
Galliard	1.38%	1.66%	-	-	-	1.89%	6/1/2018
Bloomberg Barclays U.S. Intermediate Aggregate	<u>1.50%</u>	<u>1.80%</u>	-	-	-	<u>1.88%</u>	
	-0.12%	-0.14%	-	-	-	0.01%	
Jennison**	1.40%	1.71%	1.21%	2.07%	2.32%	2.55%	5/1/2018
Bloomberg Barclays U.S. Intermediate Govt/Credit	<u>1.34%</u>	<u>1.65%</u>	<u>0.88%</u>	<u>1.70%</u>	<u>1.86%</u>	<u>2.41%</u>	
	0.06%	0.06%	0.33%	0.37%	0.46%	0.14%	
Payden & Rygel	1.25%	1.45%	1.95%	1.60%	1.30%	1.94%	7/1/2009
Bloomberg Barclays U.S. Intermediate Aggregate***	<u>1.50%</u>	<u>1.80%</u>	<u>1.95%</u>	<u>1.36%</u>	<u>1.10%</u>	<u>1.43%</u>	
	-0.25%	-0.35%	0.00%	0.24%	0.20%	0.51%	
Prudential	1.38%	1.58%	0.98%	-	-	1.93%	2/1/2016
Bloomberg Barclays U.S. Intermediate Aggregate	<u>1.50%</u>	<u>1.80%</u>	<u>0.92%</u>	-	-	<u>1.33%</u>	
	-0.12%	-0.22%	0.06%	-	-	0.61%	
TCW	1.46%	1.84%	-	-	-	2.22%	6/1/2018
Bloomberg Barclays U.S. Intermediate Govt/Credit	<u>1.34%</u>	<u>1.65%</u>	-	-	-	<u>1.80%</u>	
	0.12%	0.19%	-	-	-	0.42%	

*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

GALLIARD SHORT -13 Q4 2018

- Overweight to spread sectors hurt, as US Treasuries outperformed
- Allocation to TIPS also detracted, as inflationary pressures subsided

GALLIARD INTERMEDIATE -14 Q4 2018

- Overweight to corporates detracted, however, security selection within corporates proved beneficial
- Allocation to TIPS also detracted, as inflationary pressures subsided

DODGE & COX -85 Q4 2018

- The overweight to corporate credit as well as security selection within the sector detracted from returns
- The portfolio's shorter relative duration position also detracted
- Agency MBS added modestly to performance

JENNISON +6 Q4 2018

- The underweight to credit and high quality bias within the sector benefited performance
- Yield curve positioning, including a long-end flattener position, detracted from performance

PAYDEN & RYGEL -35 Q4 2018

- The portfolio's positioning in corporate credit hurt returns for the quarter
- Short duration positioning also detracted

PRUDENTIAL -21 Q4 2018

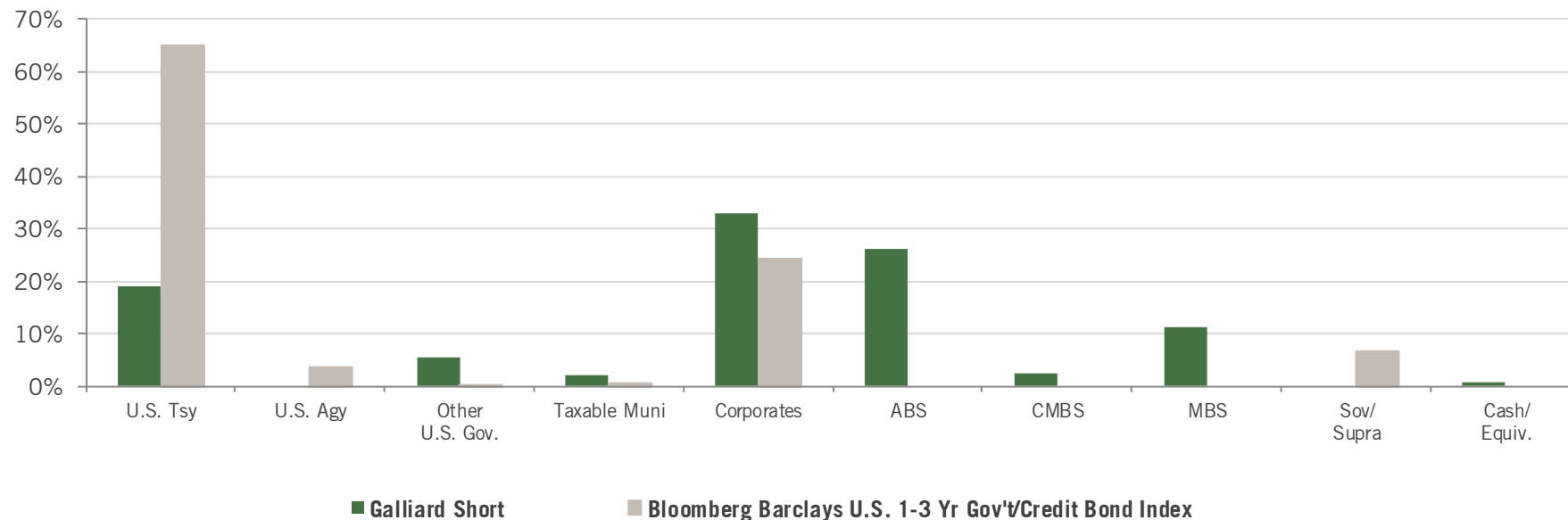
- Allocation in favor of securitized and corporate credit was the primary driver of underperformance
- Security selection, particularly within ABS and CMBS, partially offset the underperformance from allocation

TCW +19 Q4 2018

- Long duration and yield curve positioning were the primary drivers of outperformance
- While the allocation in favor of spread sectors detracted from performance for the quarter, defensive security selection benefited the portfolio

STATE OF NORTH CAROLINA STABLE VALUE FUND SHORT DURATION PORTFOLIO AS OF 12/31/18

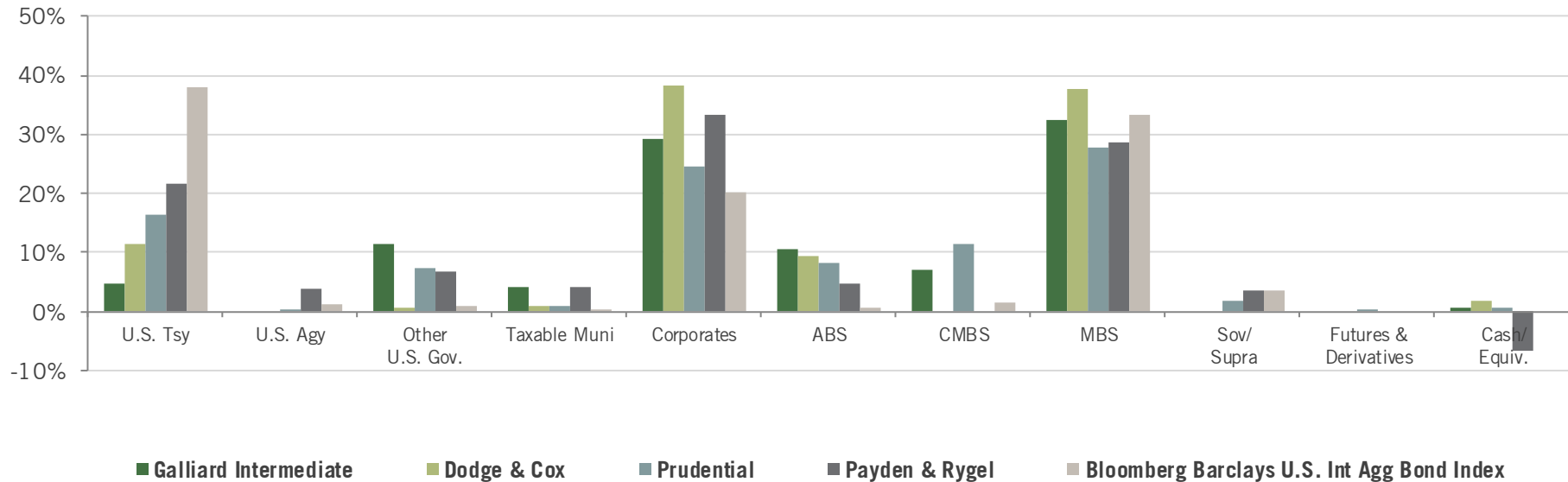
BLOOMBERG BARCLAYS U.S. 1-3 YEAR GOVERNMENT/CREDIT BOND INDEX



Characteristic	Galliard Short	Bloomberg Barclays U.S. 1-3 Yr Gov't/Credit Bond Index
Weighted Average Quality	AA	AA
Effective Duration	1.84 Yrs	1.83 Yrs
Yield to Maturity	3.04%	2.75%

STATE OF NORTH CAROLINA STABLE VALUE FUND INTERMEDIATE DURATION PORTFOLIOS AS OF 12/31/18

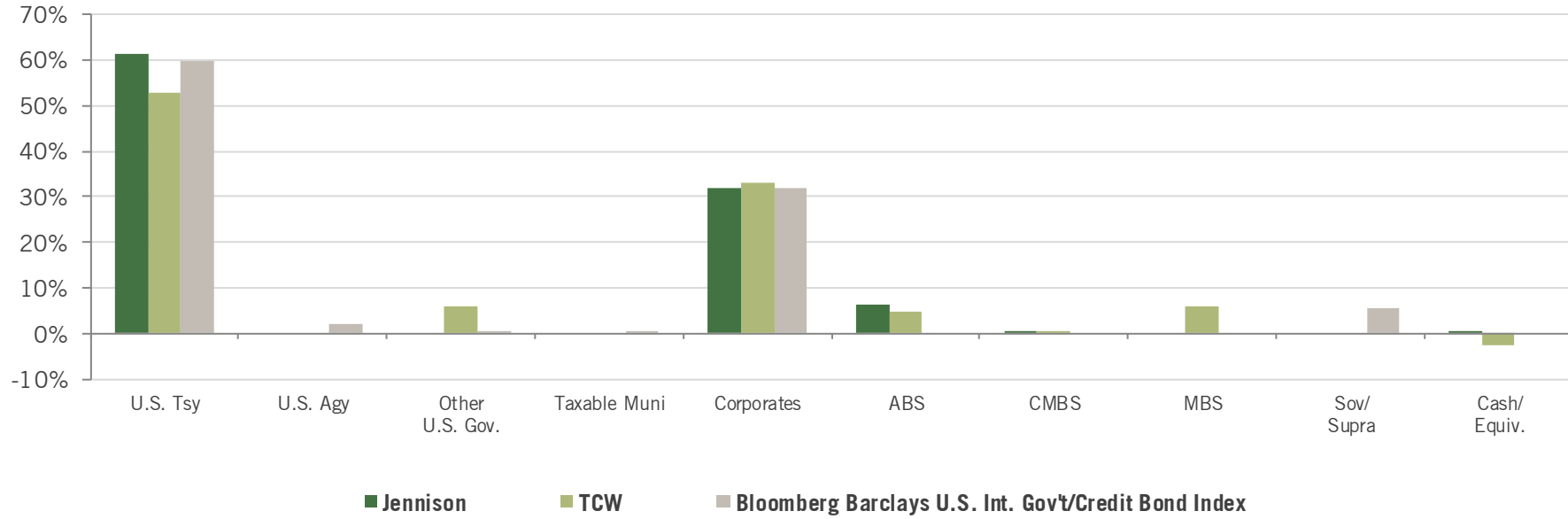
BLOOMBERG BARCLAYS U.S. INTERMEDIATE AGGREGATE BOND INDEX



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	3.98 Yrs	3.73 Yrs	3.71 Yrs	3.96 Yrs	4.13 Yrs
Yield to Maturity	3.40%	3.61%	3.35%	3.40%	3.14%

STATE OF NORTH CAROLINA STABLE VALUE FUND INTERMEDIATE DURATION PORTFOLIOS AS OF 12/31/18

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	4.03 Yrs	4.26 Yrs	3.81 Yrs
Yield to Maturity	2.97%	3.20%	3.00%