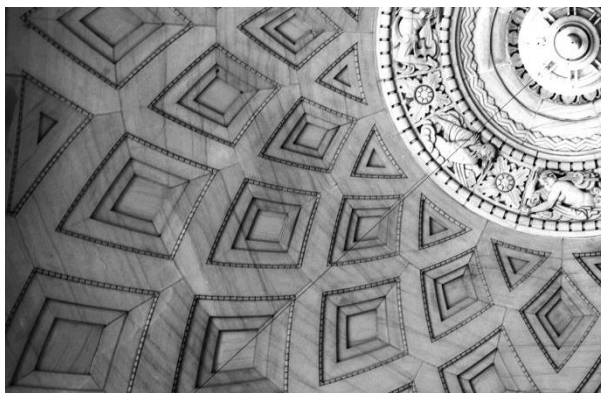




ARCHITECTS OF INVESTMENT SOLUTIONS



State of North Carolina

DECEMBER 12, 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 & Positioning

SECTION I

GALLIARD CAPITAL MANAGEMENT

WHO WE ARE

\$92.1 B

TOTAL AUM

\$77.6 B

TOTAL STABLE VALUE AUM

95+

STABLE VALUE SEPARATE ACCOUNTS

102

EMPLOYEES ON STAFF

SENIOR PROFESSIONALS AVERAGE YEARS OF EXPERIENCE:

Stable value portfolio management team – **26**

Fixed income team – **21**

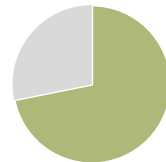
Contract management & negotiation team – **28**

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

230+

INSTITUTIONAL CLIENTS

CLIENT RELATIONSHIP TENURE



~80% of our clients have worked with Galliard for greater than **5 years**

35 of those relationships exceeded **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 manager¹ and advises the **largest** stable value collective fund² in the nation

¹eVestment, Stable Value Fixed Income universe, as of December 31, 2018, Galliard ranked highest separate/seggregated 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

2019 NEW BUSINESS

BOOKED & VERBAL COMMITMENTS

9 new clients; **\$995 M** new assets

SECTION II

STABLE VALUE PORTFOLIO REVIEW

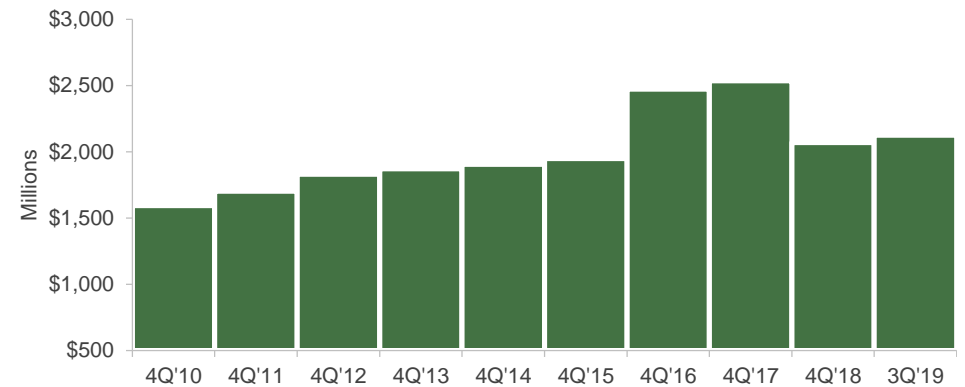
PORTFOLIO CHARACTERISTICS

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	\$2,125,309,266

HISTORICAL FUND ASSETS



PORTFOLIO CHARACTERISTICS

	Portfolio 6/30/19	Portfolio 9/30/19
Average Quality - Book Value¹	A+	A+
Average Quality - Market Value²	AA	AA
Number of Contract Issuers	5	5
Blended Yield (after all fees)³	2.60%	2.63%
Yield to Maturity	2.36%	2.15%
Effective Duration	2.96 years	2.94 years
Market/Book Value Ratio	101.74%	102.23%

PORTFOLIO DISTRIBUTION

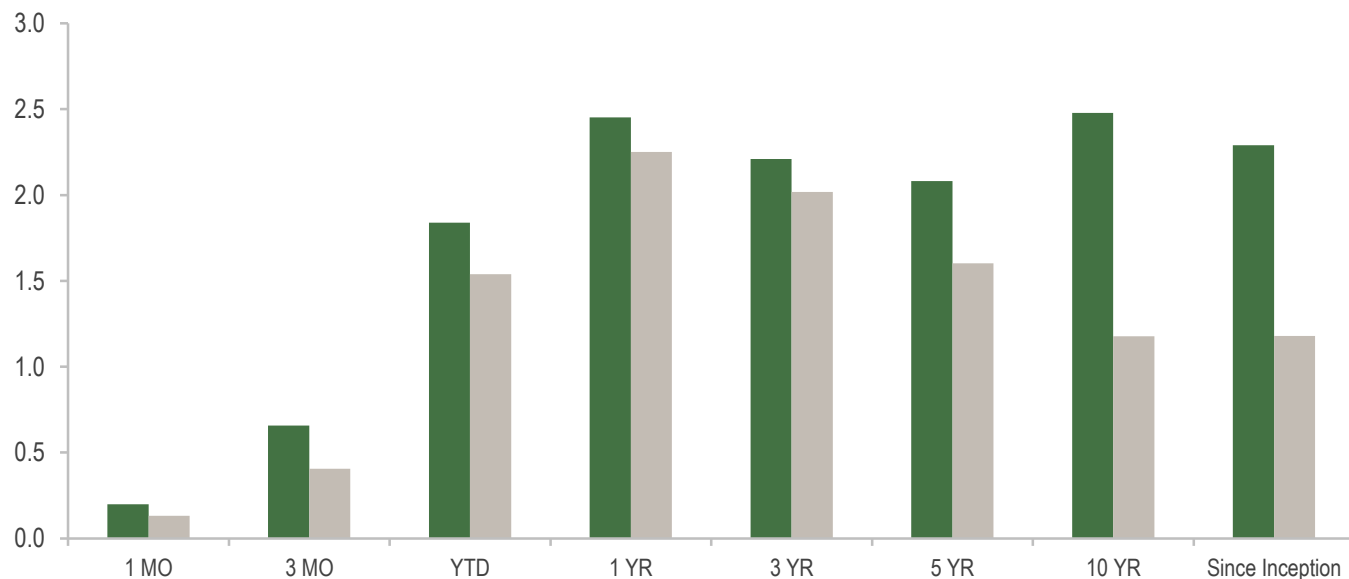
	% Portfolio 6/30/19	% Portfolio 9/30/19
Liquidity Buffer: Cash & Equivalents⁴	1.9	2.3
Short Portfolio	32.5	32.3
Intermediate Portfolio	65.6	65.4
Total	100.0%⁵	100.0%⁵

- 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

ANNUALIZED INVESTMENT PERFORMANCE

ANNUALIZED INVESTMENT PERFORMANCE AS OF 9/30/19¹



Book Value Performance	1 Mo.	3 Mo.	YTD	1 Yr.	3 Yr.	5 Yr.	10 Yr.	Since Inception
■ Portfolio (net of all fees - NAV level) ^{2,3}	0.20	0.66	1.84	2.45	2.21	2.08	2.48	2.29
■ 3 Year Constant Maturity Treasury	0.13	0.41	1.54	2.25	2.02	1.60	1.18	1.18
Benchmark ⁴	0.30	0.94	2.96	3.93	3.07	2.51	2.06	2.11
Value Added (net of all fees - NAV level)⁵	0.07	0.25	0.30	0.20	0.19	0.48	1.30	1.11

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.

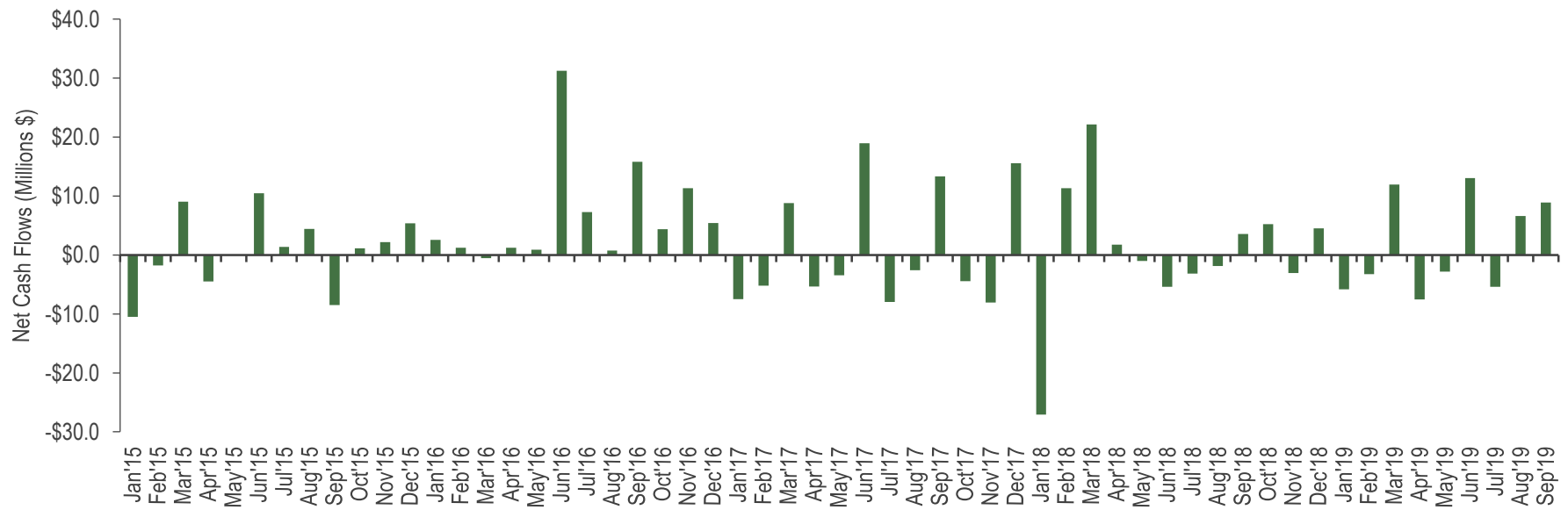
4: ICE BofAML US 3-Month Tsy Bill Index+150 bps

5: May not add due to rounding.

STABLE VALUE PORTFOLIO REVIEW

HISTORICAL CASHFLOWS

HISTORICAL CASHFLOWS



	2015	2016	2017	2018	1Q'19	2Q'19	3Q'19	2019 YTD
Beginning Assets	\$1,904.2	\$1,948.6	\$2,472.8	\$2,535.1	\$2,069.8	\$2,085.3	\$2,101.4	\$2,069.8
Net Cash Flow (\$)¹	\$8.8	\$81.5⁴	\$12.2	\$6.9³	\$2.9	\$2.7	\$10.1	\$15.8
Net Cash Flow (%)	0.46%	4.18%	0.49%	0.27%	0.14%	0.13%	0.49%	0.76%
Estimated Investment Earnings	\$35.7	\$46.9	\$50.1	\$51.6	\$12.6	\$13.3	\$13.8	\$39.8
Ending Assets²	\$1,948.6	\$2,472.8	\$2,535.1	\$2,069.8	\$2,085.3	\$2,101.4	\$2,125.3	\$2,125.3

1: Contributions, Withdrawals and Investment Transfers

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

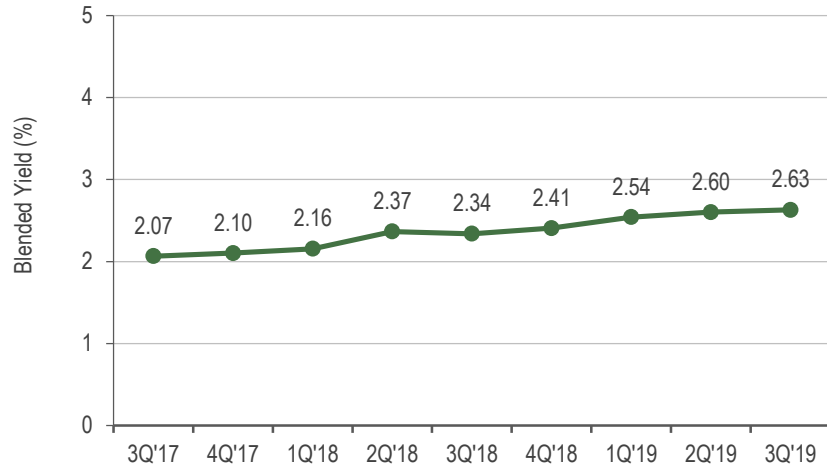
3: Excludes Prudential GoalMaker withdrawal of approximately \$523.8 M on 6/8/18 for illustrative purposes.

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.

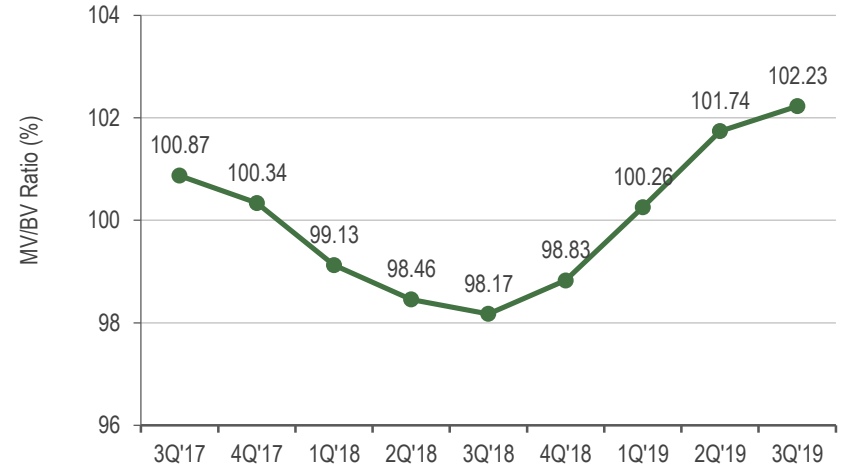
STABLE VALUE PORTFOLIO REVIEW

HISTORICAL STATS

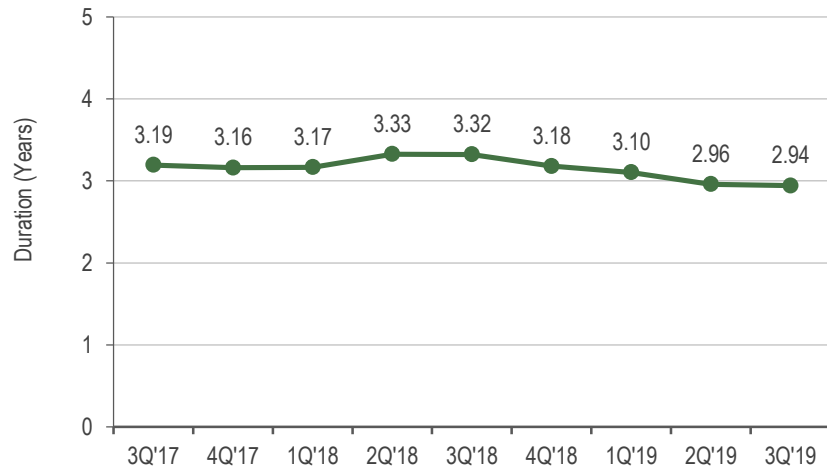
HISTORICAL BLENDED YIELD¹



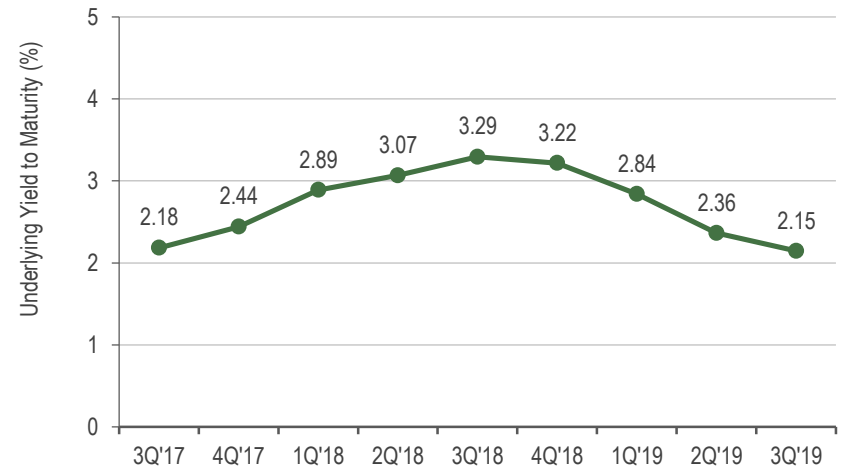
HISTORICAL MARKET VALUE TO BOOK VALUE RATIO



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

CONTRACT ISSUERS

CONTRACT ISSUER DISTRIBUTION & RATING SUMMARY¹

	% Portfolio 6/30/19	% Portfolio 9/30/19	Rating 6/30/19	Rating 9/30/19
American General Life Ins. Co.	20.1	20.0	A+	A+
Metropolitan Life Ins. Co.	10.6	10.5	AA-	AA-
Nationwide Life Ins. Co.	17.9	17.8	A+	A+
Prudential Ins. Co. of America	25.3	25.2	AA-	AA-
Transamerica Premier Life Ins. Co.	24.3	24.2	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.

STABLE VALUE PORTFOLIO REVIEW

PORTFOLIO HOLDINGS

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)			-1,435,999	-1,435,999	100.0	-0.1	2.06	2.06	0.10	AAA	
9983008\$P	WF/BlackRock Short Term Investment Fund S			50,787,896	50,787,896	100.0	2.4	2.06	2.06	0.10	AAA	
TOTAL LIQUIDITY BUFFER				49,351,897	49,351,897	100.0	2.3	2.06	2.06	0.10	AAA	
SHORT PORTFOLIO												
946996EE1	American General Life Ins. Co.	SBIC	Galliard	206,709,718	210,799,739	102.0	9.7	2.82	1.98	1.86	A+	17.0
896994GW4	Nationwide Life Ins. Co.	SBIC	Galliard	176,979,951	180,790,862	102.2	8.3	2.83	1.98	1.86	A+	17.0
744999CV3	Prudential Ins. Co. of America	SBIC	Galliard	104,855,520	108,248,614	103.2	4.9	2.94	1.98	1.86	AA-	17.0
600996QF2	Transamerica Premier Life Ins. Co.	SBIC	Galliard	197,207,037	200,148,533	101.5	9.3	2.42	1.98	1.86	A+	17.0
TOTAL SHORT PORTFOLIO				685,752,227	699,987,748	102.1	32.3	2.73	1.98	1.86	A+	
INTERMEDIATE PORTFOLIO												
590994VM8	Metropolitan Life Ins. Co.	SAGIC	Dodge & Cox	223,752,269	229,564,463	102.6	10.5	2.96	2.45	3.11	AA-	18.0
946996EE1	American General Life Ins. Co.	SBIC	Payden & Rygel	217,853,335	222,163,847	102.0	10.3	2.82	2.27	3.46	A+	17.0
896994GW4	Nationwide Life Ins. Co.	SBIC	Galliard	200,997,007	205,325,077	102.2	9.5	2.83	2.27	3.42	A+	17.0
744999CV3	Prudential Ins. Co. of America	SBIC	Jennison Assoc.	214,508,124	221,449,544	103.2	10.1	2.94	1.95	3.96	AA-	17.0
744999CV3	Prudential Ins. Co. of America	SBIC	PGIM	215,509,431	222,483,253	103.2	10.1	2.94	2.36	3.67	AA-	17.0
600996QF2	Transamerica Premier Life Ins. Co.	SBIC	Galliard	100,402,309	101,899,887	101.5	4.7	2.42	2.27	3.42	A+	17.0
600996QF2	Transamerica Premier Life Ins. Co.	SBIC	TCW	217,182,666	220,422,114	101.5	10.2	2.42	2.04	3.89	A+	17.0
TOTAL INTERMEDIATE PORTFOLIO				1,390,205,142	1,423,308,185	102.4	65.4	2.79	2.23	3.57	A+	
TOTAL PORTFOLIO				2,125,309,266	2,172,647,830	102.2	100.0	2.75	2.15	2.94	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.

STABLE VALUE PORTFOLIO REVIEW EXPENSES

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 9/30/19	Per \$1000	Est. Annual Revenue
Investment Management Fees paid to Galliard	0.073%	\$0.73	\$1,543,825
Investment Management fees paid to Non-Affiliated Investment Advisors	0.058%	\$0.58	\$1,223,803
Investment Contract Fees* ¹	0.167%	\$1.67	\$3,551,503
Acquired Fund Fees ²	0.002%	\$0.02	\$40,630
- Investment Contract Fees	None	None	None
- Other Acquired Fund Fees and Non-Affiliated Investment Management Fees paid to Non-Affiliated Investment Advisors ³	0.002%	\$0.02	\$40,630
12b-1 Distribution Fee	None	None	None
Other Expenses ⁴	0.002%	\$0.02	\$42,184
Total Annual Fund Operating Expenses⁵	0.301%	\$3.01	\$6,401,944

*Changes have occurred to the fee schedule structure since the prior period. Please contact your Galliard representative if you have additional questions.

- 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: NC's administrative fee of 0.025% which is included in the Other Expenses is waived for 2019.
- 5: 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, PGIM, TCW.

SECTION III

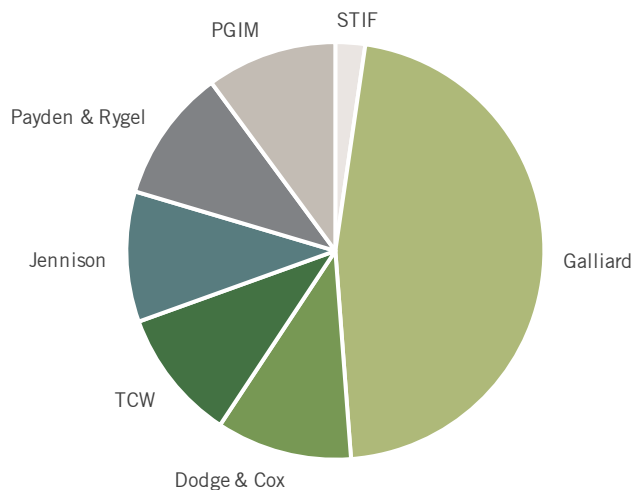
STATE OF NORTH CAROLINA STABLE VALUE FUND MANAGER STYLES

	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
TCW	 Bottom Up Top Down	 Low High	 Low High	 Less More Important	Duration, structured credit, multi-sector relative value
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
PGIM	 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

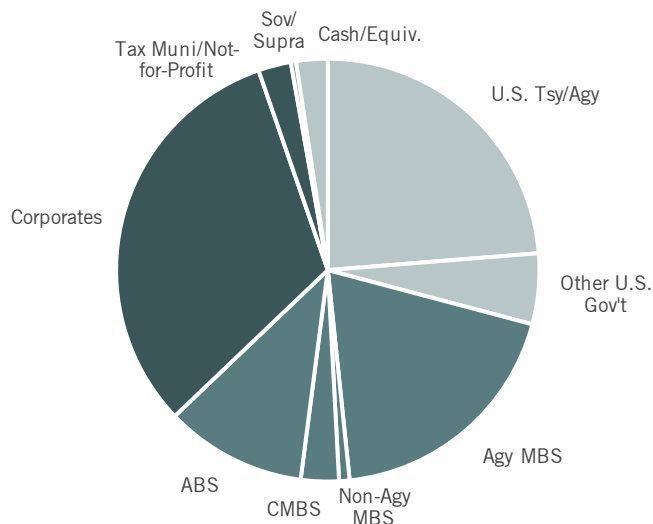
PORTFOLIO AS OF 9/30/19

MANAGER ALLOCATION



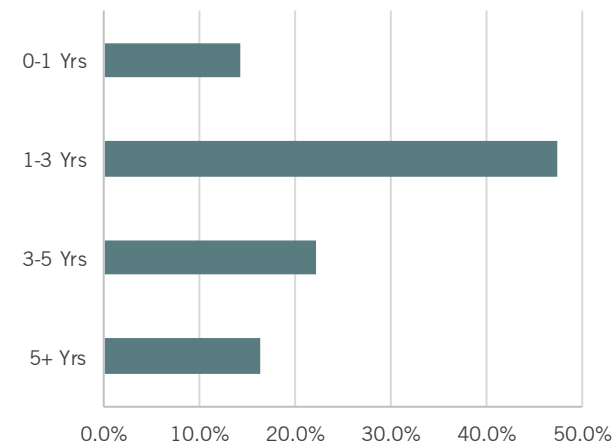
STIF	2.3%
Galliard	46.5%
Dodge & Cox	10.5%
TCW	10.2%
Jennison	10.1%
Payden & Rygel	10.3%
PGIM	10.1%
TOTAL EXT. MANAGER	51.2%
TOTAL PORTFOLIO	100%

UNDERLYING FIXED INCOME SECTOR ALLOCATION



U.S. Tsy/Agy	23.7%
Other U.S. Gov't	5.4%
Agy MBS	19.2%
Non-Agy MBS	0.8%
CMBS	2.9%
ABS	10.8%
Corporates	31.8%
Tax Muni/Not-for-Profit	2.5%
Sov/ Supra	0.4%
Cash/Equiv.	2.4%

UNDERLYING DURATION DISTRIBUTION



0-1 Yrs	14.2%
1-3 Yrs	47.4%
3-5 Yrs	22.1%
5+ Yrs	16.3%

STATE OF NORTH CAROLINA STABLE VALUE FUND

MARKET VALUE PERFORMANCE SUMMARY AS OF 9/30/19¹

	1 Month	3 Month	YTD	1 Year	3 Year	5 Year	Since Inception	Inception
SHORT DURATION								
Galliard (before fees)	-0.06	0.82	4.00	5.09	-	-	4.26	6/1/2018
Bloomberg Barclays U.S. 1-3 Yr. Government/Credit	-0.05	0.69	3.42	4.64	-	-	3.73	
Value Added²	0.00	0.13	0.59	0.46	-	-	0.53	
INTERMEDIATE DURATION								
Dodge & Cox (before fees)	-0.04	1.55	7.04	8.05	2.92	-	2.89	3/1/2015
Bloomberg Barclays U.S. Intermediate Aggregate	-0.23	1.38	6.18	8.08	2.39	-	2.53	
Value Added²	0.19	0.17	0.86	-0.03	0.53	-	0.36	
Galliard (before fees)	-0.22	1.50	6.78	8.56	-	-	6.53	6/1/2018
Bloomberg Barclays U.S. Intermediate Aggregate	-0.23	1.38	6.18	8.08	-	-	6.07	
Value Added²	0.00	0.12	0.60	0.48	-	-	0.46	
Jennison (before fees) ³	-0.39	1.38	6.31	8.13	2.63	2.96	6.29	5/1/2018
Bloomberg Barclays U.S. Intermediate Govt/Credit	-0.36	1.37	6.41	8.17	2.40	2.68	6.25	
Value Added²	-0.03	0.01	-0.09	-0.04	0.23	0.28	0.03	
Payden & Rygel (before fees)	-0.24	1.42	6.30	7.84	3.12	2.37	2.40	7/1/2009
Bloomberg Barclays U.S. Intermediate Aggregate ⁴	-0.23	1.38	6.18	8.08	2.83	2.20	1.92	
Value Added²	-0.02	0.04	0.12	-0.24	0.29	0.17	0.48	
PGIM (before fees)	-0.17	1.48	6.80	8.49	2.88	-	3.37	2/1/2016
Bloomberg Barclays U.S. Intermediate Aggregate	-0.23	1.38	6.18	8.08	2.39	-	2.73	
Value Added²	0.06	0.10	0.63	0.41	0.49	-	0.65	
TCW (before fees)	-0.33	1.31	6.48	8.44	-	-	6.56	6/1/2018
Bloomberg Barclays U.S. Intermediate Govt/Credit	-0.36	1.37	6.41	8.17	-	-	6.18	
Value Added²	0.03	-0.06	0.07	0.28	-	-	0.38	

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

2: May not add due to rounding.

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

4: 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 Q3 2019

- Overweight allocations to corporate bonds, ABS, and Agency multi-family MBS securities all contributed positively to performance
- Issue selection in corporates was also helpful, as our emphasis on 3-5 year proved beneficial
- Detracting from returns was an allocation to TIPS, as inflationary pressures remained subdued

GALLIARD INTERMEDIATE +12 Q3 2019

- An overweight to non-Treasury sectors was the primary driver of outperformance, as spread sectors generally outperformed for the quarter
- In particular, overweight allocations to corporate bonds, CMBS, ABS, and taxable municipals were positive
- Issue selection in corporates was a modest drag on returns, as the shorter maturity, higher quality profile of the accounts holdings underperformed longer, lower quality issues held in the benchmark

DODGE & COX +17 Q3 2019

- The Fund's yield advantage and security selection in Agency MBS were positive for performance
- Sector allocation, particularly the overweight to Corporates, was positive
- Shorter duration positioning detracted

JENNISON +1 Q3 2019

- Yield curve positioning contributed modestly to performance
- An allocation to longer Corporates detracted modestly

PAYDEN & RYGEL +4 Q3 2019

- The overweight to Corporate Credit and Structured Credit contributed positively to performance
- Security selection detracted from performance

PGIM +10 Q3 2019

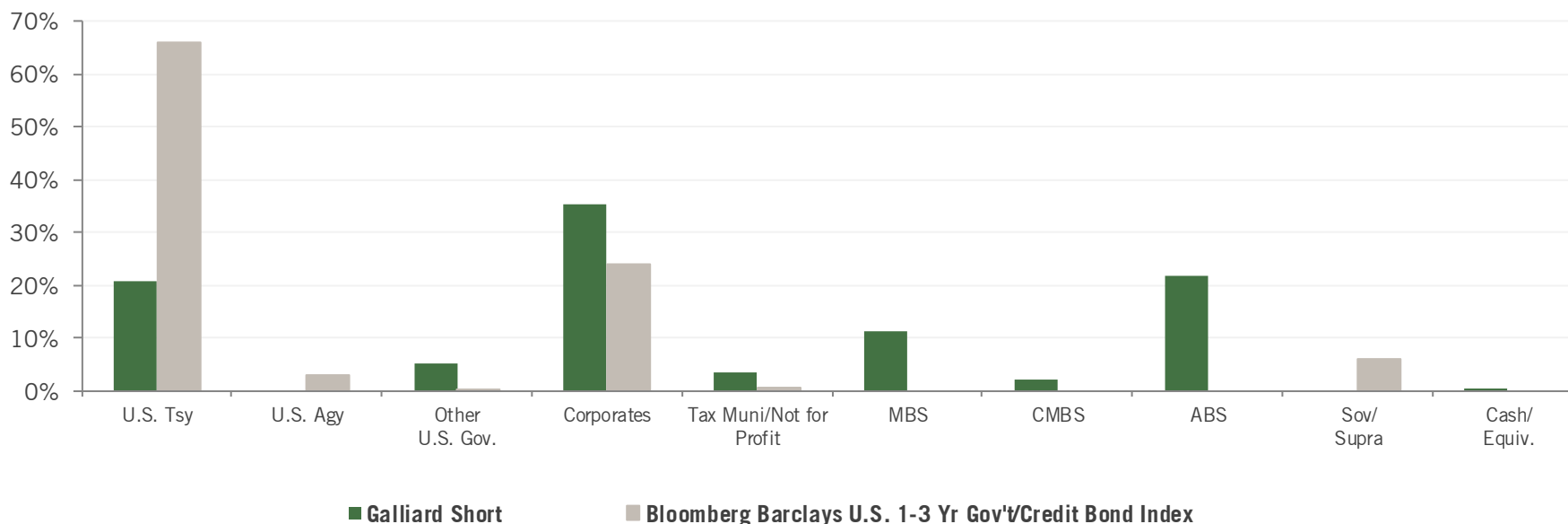
- Slightly longer duration position at the beginning of the quarter and yield curve positioning contributed positively to performance
- The overweight to Corporates and CMBS and security selection in Corporates were also modestly positive

TCW -6 Q3 2019

- An underweight to Corporate Credit detracted from performance as spread sectors outperformed
- An allocation to ABS and CMBS was positive
- Duration and yield curve positioning detracted

STATE OF NORTH CAROLINA STABLE VALUE FUND SHORT DURATION PORTFOLIO AS OF 9/30/19

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

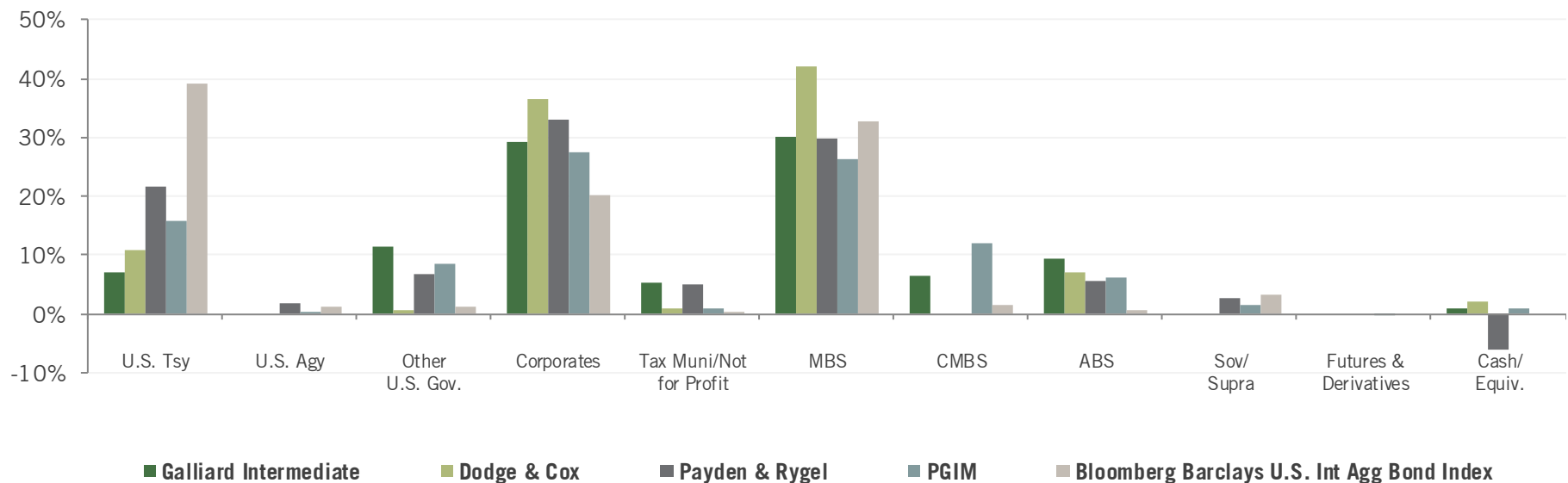


Characteristic	Galliard Short	Bloomberg Barclays U.S. 1-3 Yr Gov't/Credit Bond Index
Weighted Average Quality ¹	AA	AA+
Effective Duration	1.86 Yrs	1.81 Yrs
Yield to Maturity	1.98%	1.83%

1: 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.

STATE OF NORTH CAROLINA STABLE VALUE FUND INTERMEDIATE DURATION PORTFOLIOS AS OF 9/30/19

BLOOMBERG BARCLAYS U.S. INTERMEDIATE AGGREGATE BOND INDEX

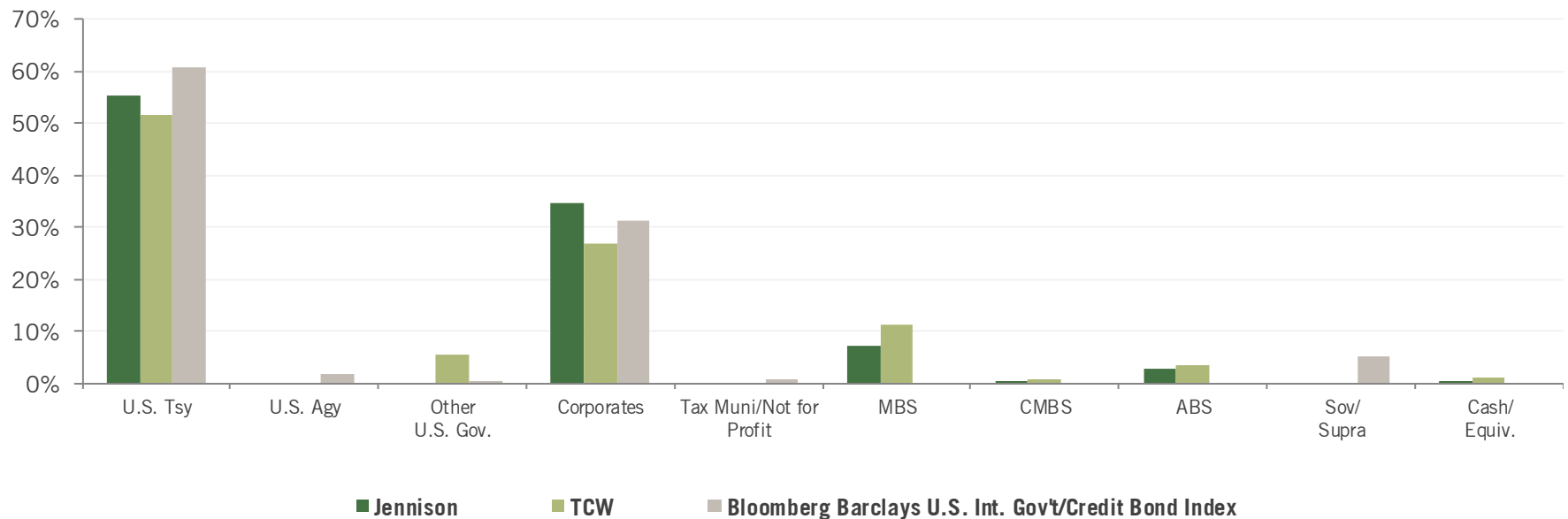


Characteristic	Galliard Intermediate	Dodge & Cox	Payden & Rygel	PGIM	Bloomberg Barclays U.S. Int Agg Bond Index
Weighted Average Quality ¹	AA	AA-	AA-	AA-	AA+
Effective Duration	3.42 Yrs	3.11 Yrs	3.46 Yrs	3.67 Yrs	3.51 Yrs
Yield to Maturity	2.27%	2.45%	2.27%	2.36%	2.12%

1: 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.

STATE OF NORTH CAROLINA STABLE VALUE FUND INTERMEDIATE DURATION PORTFOLIOS AS OF 9/30/19

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 ¹	AA+	AA+	AA
Effective Duration	3.96 Yrs	3.89 Yrs	3.86 Yrs
Yield to Maturity	1.95%	2.04%	1.94%

1: 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.