

HEALTH WEALTH CAREER

NORTH CAROLINA SUPPLEMENTAL RETIREMENT PLANS

STABLE VALUE FUND ANALYSIS

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1Q18 STABLE VALUE SURVEY

INTRODUCTION AND SUMMARY

- Mercer's survey includes responses from 17 of the largest collective trust Stable Value providers. Assets managed by the responding providers total \$361 billion. The following trends occurred in the first quarter of 2018:
 - The median **Market to Book** ratio decreased by 102 bps during the first quarter. All of the providers' ratios were below 100%. The range of market to book ratios continued to remain narrow.
 - The median **Gross Crediting Rate** increased 4 bps from the previous quarter to 2.30%.
 - The median **Net Crediting Rate** increased 6 bps from the previous quarter to 1.90%.
 - **Wrap Capacity** has continued to improve as the economy has stabilized. Managers are experiencing progress in negotiating looser investment guidelines and stabilization of wrap fees.
 - **Cash Flows** were negative for most respondents for the quarter, with only a few respondents reporting net inflows.
 - **Cash Positions** increased on average for the quarter.
 - **Wrap Fees** for new contracts are typically 18 to 25 bps.
 - **Median Stable Value Fees** have remained at 41 bps for clients with over \$500M in assets

NORTH CAROLINA STABLE VALUE FUND

- **Ownership:**

- Galliard Capital Management (Galliard) is a wholly owned subsidiary of Wells Fargo & Company, one of the nation's largest financial services companies. Galliard specializes in fixed income and stable value management for institutional investors.

- **Investment Philosophy:**

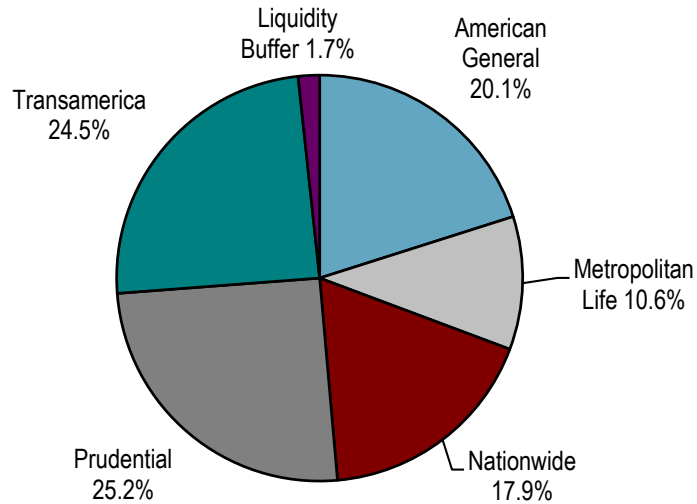
- Value added is primarily derived from sector emphasis and individual security selection utilizing a fundamental valuation process.
- Galliard focuses on an above average yield, not positioning the portfolio based on anticipated interest rate movements. The firm will make only modest variations from the benchmark in duration segments across the curve.
- Galliard's stable value portfolios emphasize actively managed security backed stable value contracts. These contracts are designed to provide the portfolio with enhanced returns through the employment of actively managed fixed income strategies, which provide the potential for greater expected returns in the long run.

- **Strengths:**

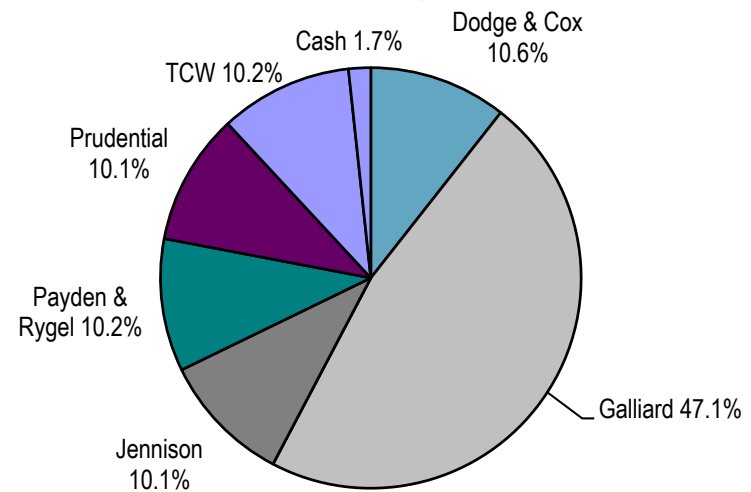
- Galliard's scale provides access to product and extensive use of external sub-advisors.
- Diverse approach to finding value in spread sectors and emphasis on downside risk protection makes it ideal for risk averse investors.
- Firm benefits from its emphasis on stable value with a focus on low volatility and principal protection.
- Mercer rates Galliard's Stable Value strategy "A"

CURRENT NC STABLE VALUE FUND

Current Allocation by Wrap Provider
As of June 30, 2018



Current Allocation by Manager
As of June 30, 2018



Portfolio Characteristics As of 6/30/18

Average Quality: A+

Blended Yield (After all Fees): 2.37%

Yield to Maturity: 3.07%

Effective Duration: 3.33 Years

Market to Book: 98.46%

GALLIARD & 1Q18 STABLE VALUE SURVEY FEES

Wrap Fees for new contracts have stabilized to a range of 18 to 25 bps and some managers have noted greater flexibility in negotiating lower fees as the supply/demand dynamic in the wrap market has improved.



The median wrap fee for surveyed funds is approximately 19 bps.
— NC fees are all in at 17.1 bps.

North Carolina Stable Value Fund Operating Expenses	Expense Ratio	Per \$1000
Investment Management fee paid to Galliard	0.074%	\$0.74
Investment Management fees paid to Non-Affiliated Investment Advisors	0.059%	\$0.59
Investment Contract Fees*	0.171%	\$1.71
Acquired Fund Fees**	0.001%	\$0.01
Investment Contract Fees	None	\$0.00
Other Acquired Fund Fees and Non-Affiliated Investment Management Fees paid to Non-Affiliated Investment Advisors***	0.001%	\$0.01
12b-1 Distribution Fee	None	None
Other Expenses	0.027%	\$0.27
Total Annual Fund Operating Expenses****	0.333%	\$3.33

* Fees paid to create and maintain the investments used by a stable value fund

** Fees borne indirectly by the Fund when it acquires an interest in another fund which pays its own separate fees

*** Includes audit fees for the cost of producing a report by a qualified auditor

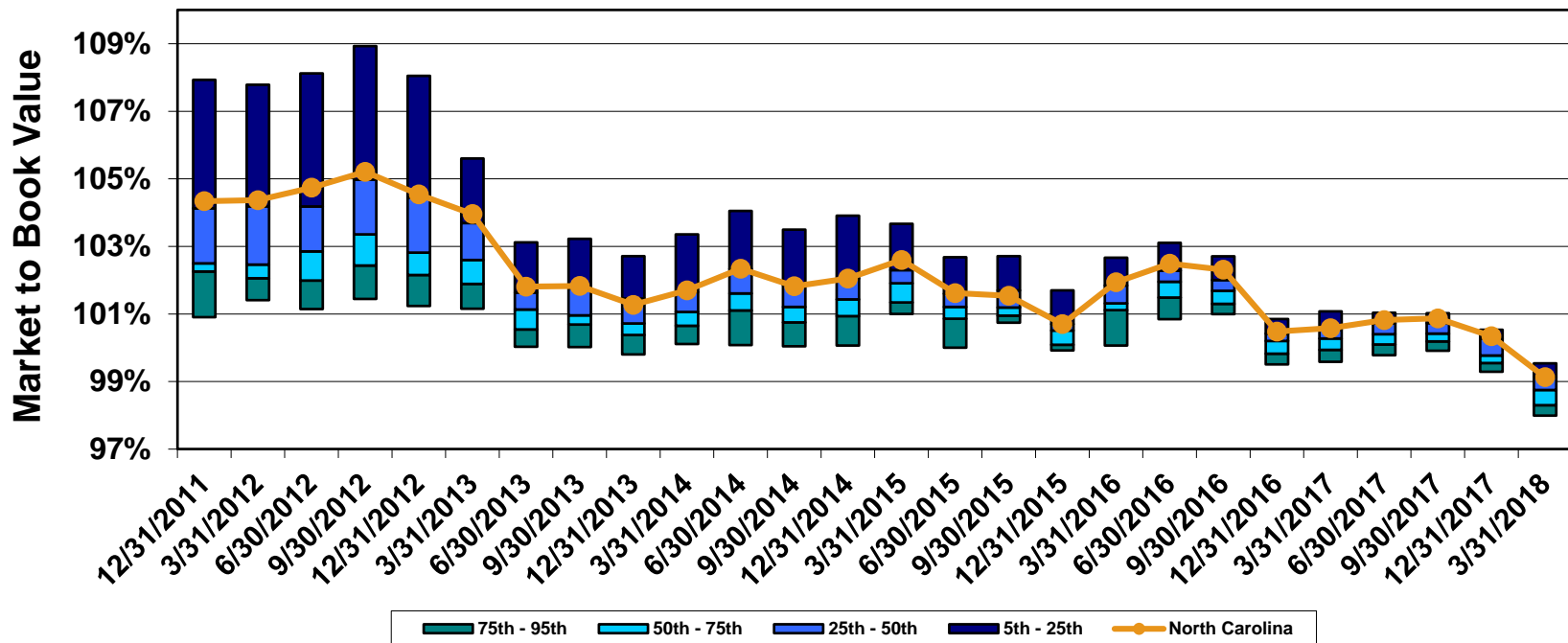
**** Total Annual Fund Operating Expenses are reflected daily in the Fund's net asset value

Note: The median fee calculation for stable value funds considers a mix of commingled funds and separate accounts.

GALLIARD & 1Q18 STABLE VALUE SURVEY

MARKET TO BOOK RATIOS

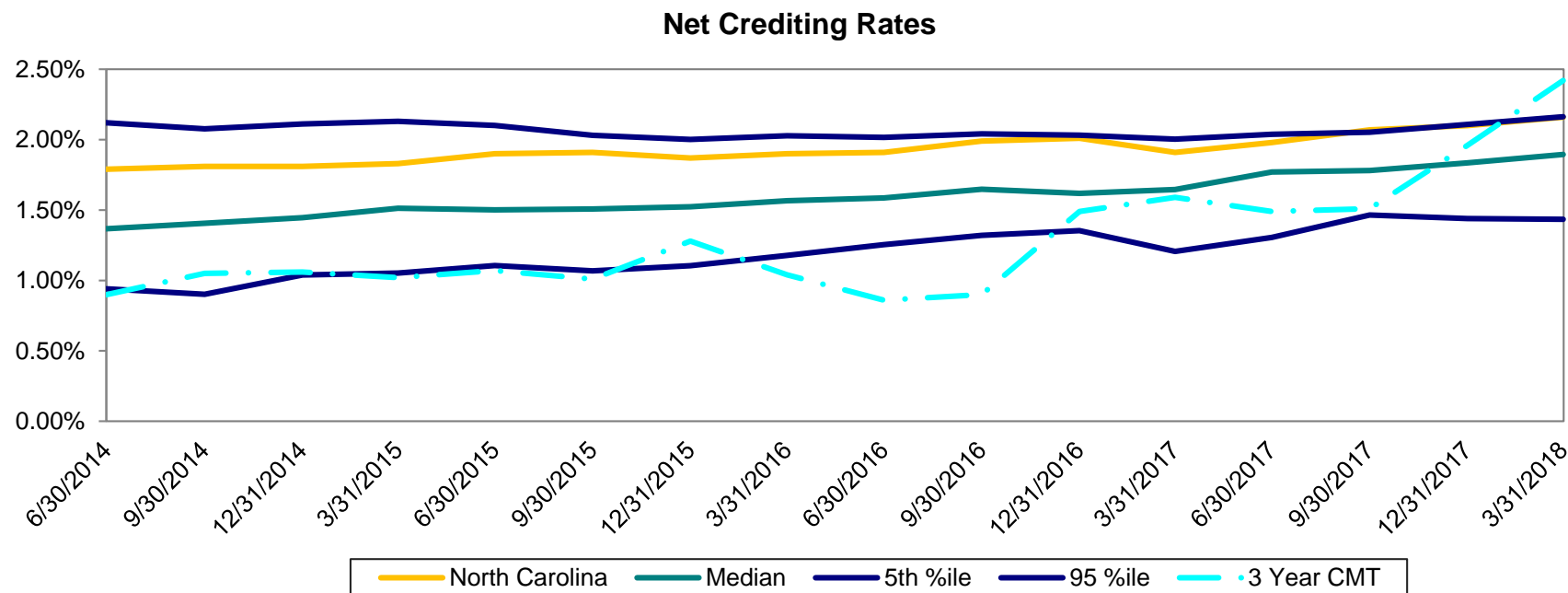
- The median **Market to Book** ratio decreased 102 bps during the first quarter.
 - Most of the providers experienced a fall in Market to Book ratios and all of the providers' Market to Book ratios were below 100%.
 - The median Market to Book ratio on March 31, 2018 was 98.75%.
- Galliard's Market to Book** ratio decreased 121 bps to 99.13% over 1Q18.



GALLIARD & 1Q18 STABLE VALUE SURVEY

NET CREDITING RATES

- The median **Net Crediting Rate** increased from 1.84% to 1.90% over the quarter.
 - The range of crediting rates has remained about the same for the last twenty quarters.
- Galliard's Net Crediting Rate** ratio increased 6 bps to 2.16% over 1Q18.



The **net crediting rate** refers to the crediting rate derived after deducting all the fee components from the gross crediting rate including wrap fees, investment management fees and other miscellaneous fees.

The crediting rate chart reflects a shorter history as crediting rate information (specifying net and gross as defined by Mercer) for few managers is not available prior to June 2014.

Note - We have considered the lowest fee share class regardless of the asset-size minimum requirements for the purpose of calculating Net Crediting Rates as shown above.

PERFORMANCE ANALYSIS

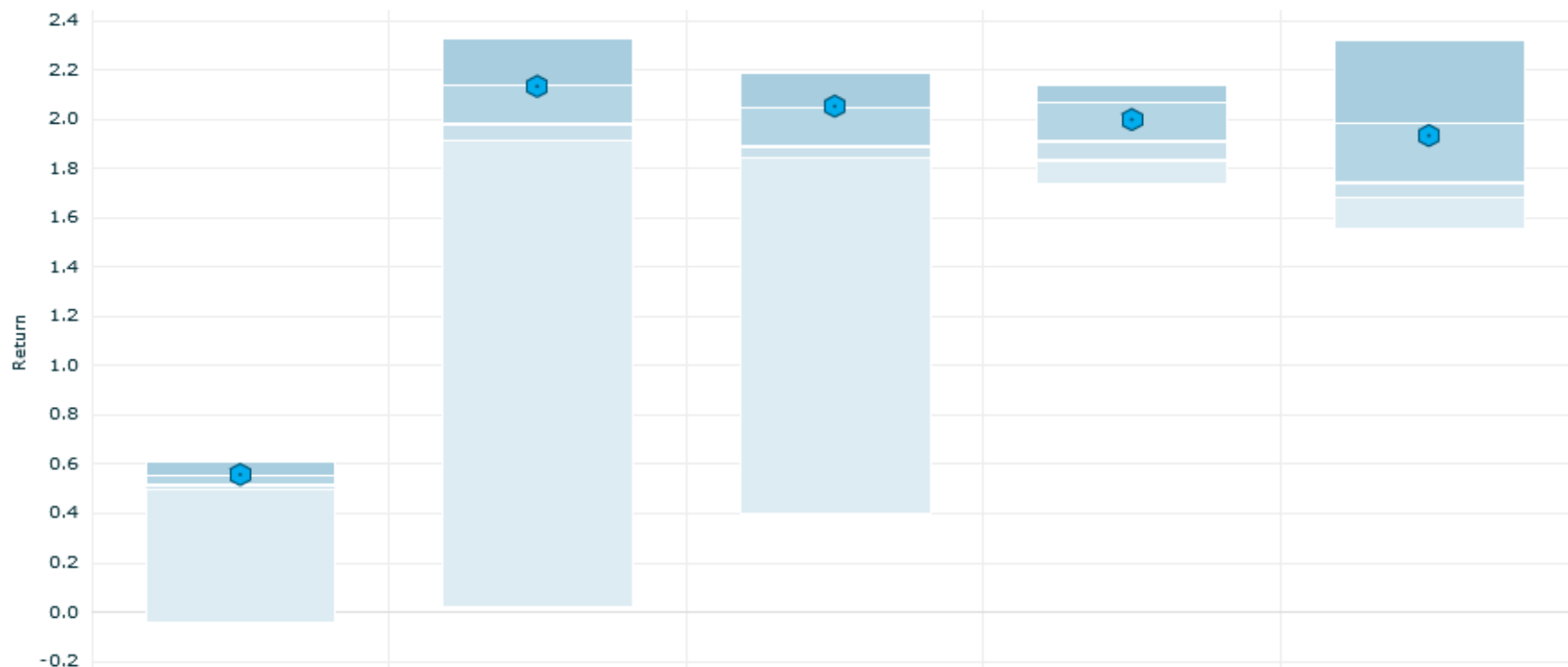



GALLIARD PERFORMANCE

Galliard SV NC Returns

Return in \$US (before fees) over 3 mths, 1 yr, 2 yrs, 3 yrs, 5 yrs ending June-18

Comparison with the US Stable Value universe (Percentile Ranking)

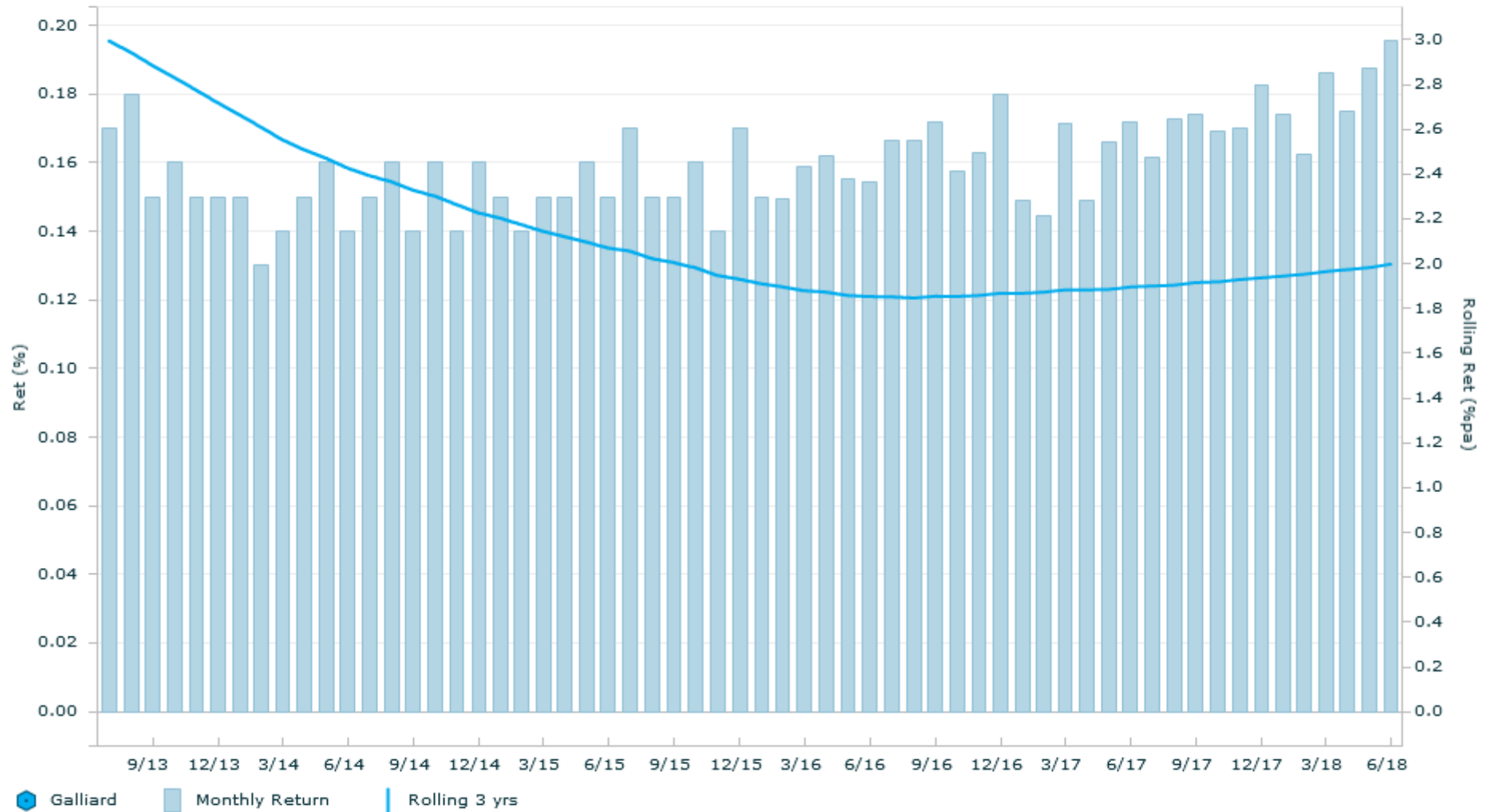


	3 mths (%)	1 yr (%)	2 yrs (%pa)	3 yrs (%pa)	5 yrs (%pa)
 Galliard	0.6 (24)	2.1 (27)	2.1 (24)	2.0 (33)	1.9 (28)
5th Percentile	0.6	2.3	2.2	2.1	2.3
Upper Quartile	0.6	2.1	2.0	2.1	2.0
Median	0.5	2.0	1.9	1.9	1.7
Lower Quartile	0.5	1.9	1.8	1.8	1.7
95th Percentile	0.0	0.0	0.4	1.7	1.6
Number	23	23	23	21	17

GALLIARD PERFORMANCE

Galliard SV NC Returns

Monthly Return with rolling 3 yr line in \$US (before fees) over 5 yrs ending June-18



GALLIARD SUB-ADVISOR PERFORMANCE

Stable Value	% of Fund	QTR	1 Yr	3 Yrs	5 Yrs	Since Inception
Payden & Rygel	10.2%	0.4	0.6	1.0	1.1	1.9
Barclays 1-3 Year Government/Credit		0.2	0.2	0.7	0.8	1.3
Galliard Short	33.0%	--	--	--	--	0.1
Barclays 1-3 Year Government/Credit		0.2	0.2	0.7	0.8	0.0
Galliard Intermediate	14.1%	--	--	--	--	0.0
Barclays US Intermediate Aggregate Bond Index		0.1	-0.3	1.3	1.8	0.0
Dodge & Cox	10.6%	0.0	0.1	1.9	--	1.5
Barclays US Intermediate Aggregate Bond Index		0.1	-0.3	1.3	1.8	1.1
Jennison	10.1%	0.1	-0.1	1.5	1.9	-0.1
Barclays US Intermediate Government/Credit Bond Index		0.0	-0.6	1.2	1.6	-0.1
TCW	10.2%	--	--	--	--	0.2
Barclays US Intermediate Government/Credit Bond Index		0.0	-0.6	1.2	1.6	-0.1
Prudential	10.1%	0.1	0.0	--	--	1.5
Barclays US Intermediate Aggregate Bond Index		0.1	-0.3	1.3	1.8	0.8

1Q18 STABLE VALUE SURVEY

WRAP CAPACITY

- **Wrap Capacity** has continued to improve.
- Wrap providers known to be exiting the market or significantly reducing their wrap business include: Athene/Aviva, Bank of America, Bank of Tokyo-Mitsubishi, Natixis, Rabobank, and UBS.
 - The transition process for these providers will likely stretch over the next several years.
 - The Bank of Tokyo-Mitsubishi announced its decision to exit the wrap business during 3Q17. Six respondents to the survey had exposure to Bank of Tokyo-Mitsubishi.
- New contracts are being offered by: American General Life (AIG subsidiary), Great West Life, JPMorgan, Life Insurance Company of the Southwest, Lincoln Financial, Mass Mutual, MetLife, National Life, Nationwide, New York Life, One America Life, Pacific Life, Principal Life, Prudential, RBC, RGA, State Street, TIAA-CREF, Transamerica, Transamerica Premier Life, United of Omaha, and Voya.
- Some of the new contracts are only being offered for separate account mandates, but capacity for collective funds appears to be improving as well.
- Some of the new wrap capacity is offered only if paired with that specific wrap provider's (or affiliated company's) asset management.

1 Q 1 8 S T A B L E V A L U E S U R V E Y

C O N C L U S I O N S

- Wrap capacity has continued to improve as the economy has witnessed signs of sustained stability. Managers are experiencing progress in negotiating looser investment guidelines and lower wrap fees with the wrap providers.
- Wrap fees seem to have reached an equilibrium, which is more sustainable compared to the lows reached prior to the financial crisis.
- Slowly rising rates are less of a concern than ongoing low rates. However, rapidly rising interest rates could be detrimental to a stable value portfolio if rates rise significantly above the portfolio's yield.
- The fact that most stable value funds are experiencing negative cash flows is something we aim to look at in more detail, negative cash flow can create complications for some providers.
- Over the long term, stable value is expected to produce competitive yields versus money market, although we believe it is important to remain vigilant in evaluating your stable value provider.

APPENDIX



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