

INSIGHTS FROM TWENTY YEARS OF STABLE VALUE CASH FLOW DATA AND PARTICIPANT BEHAVIOR

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EXECUTIVE SUMMARY

This paper reviews what drives stable value participant flows and what those patterns imply for monitoring and liquidity planning. The analysis highlights the following:

- Decomposing participant cash flows into transfers, contributions, and distributions allows for an improved interpretation of behavior.
- Transfers tend to move towards stable value funds during market stress.
- Both transfers and distributions have become increasingly rate-driven post-2022, especially due to crediting rates lagging market yields.
- Plan demographics are an important contributor to the observed distribution behavior.

ABOUT THIS PAPER

This paper is a collaboration between Valerian Capital Group and the Stable Value Investment Association. Drawing on twenty years of cash flow data across a broad cross-section of stable value funds, it examines how participant behavior has evolved through multiple market cycles, interest rate regimes, and demographic shifts. The goal is to give plan sponsors, investment managers, and wrap providers a stronger empirical foundation for liquidity planning, portfolio construction, and ongoing fund monitoring.



PROCESS AND SUMMARY FINDINGS

Using Valerian's industry dataset, this study analyzes more than twenty years of stable value cash-flow experience, covering approximately 80% of the individually managed stable value market.

Historically, stable value funds have functioned as a defensive allocation, with in-plan transfers exhibiting a persistent flight-to-safety response to equity market stress across market cycles, sponsor sectors, and participant compositions.

In-plan transfers are more sensitive to equity market conditions, while out-of-plan contributions and distributions show comparatively less equity sensitivity. Both channels respond to interest rate conditions; however, for most of the historical sample, limited crediting rate deficits constrained the observability of rate effects. Only when short-term market yields exceed stable value crediting rates—most notably in 2022 and afterwards—does the relationship between rate differentials and net flows become apparent in the data.

Plan demographics are more relevant for the external flow channel. Higher concentrations of inactive participants are associated with larger and more volatile net distributions, particularly when crediting rate competitiveness deteriorates. In contrast, higher concentrations of inactive participants has comparatively less influence on in-plan transfer behavior, which remains predominantly driven by equity market conditions and 401(k) plan structure.

Taken together, the findings indicate that stable value cash flows are best understood through decomposition into in-plan transfers and out-of-plan contributions and distributions, as these components respond to different market, structural, and demographic drivers, rather than through net flows alone.

DETAILED ANALYSIS AND RESULTS



An analysis drawn from twenty years of stable value cash-flow data covering multiple market cycles and stress periods.

Two decades of stable value experience show that participant cash flows are shaped by behavioral responses to market volatility and the interest-rate environment, and that stable value funds display consistent patterns in how assets move in and out of plans.

Stable value funds in their modern form have only about 25 years of organized data. Over this period, they have gone through several major episodes of market disruption:

- the 2008 global financial crisis,
- the 2011–2012 sovereign debt period,
- the 2015–2016 equity sell-off, and
- the COVID-19 pandemic.

Each of these unique periods offers insight into how participants respond to uncertainty, and how stable value funds perform their role as a capital-preservation option in defined contribution plans.

Drawing on more than 20 years of plan-level experience data, this study examines how transfers, contributions, and distributions evolve under these conditions and what these patterns reveal about participant decision-making. The analysis highlights the persistent flight-to-safety during stress, the emergence of rate competitiveness as a driver of distributions in the post-2022 environment, and the role that plan demographics play. Using Valerian Capital's aggregated industry dataset, covering nearly 80 percent of the Individual Plan segment, the report focuses on the long-term behavioral themes that consistently shape cash flows in stable value funds.

DETAILED ANALYSIS AND RESULTS



Decomposing stable value cash flows into in-plan transfers and contributions and distributions exposes patterns that are not visible in net flows.



Participant transfer behavior shows a persistent flight-to-safety pattern, with reallocations toward stable value during crisis across all major market episodes.

Participant cash flows in a stable value fund can be decomposed into two main components: In plan transfers, where participants reallocate among investment options within the plan, and contributions and distributions, which capture money entering and exiting the plan through payroll contributions, rollovers, distributions, and retirement related activity, etc.

These components reflect different participant decisions. Transfers are driven by participants' reactions to equity market conditions and perceived risk, while contributions and distributions appear to vary more with participant characteristics and plan demographics, although both components can be affected by multiple factors. When these flows are aggregated, their distinct signals can be obscured. When they are decomposed, clearer patterns emerge that help explain how participants use stable value across market environments.

One of the common patterns in the history of stable value is the way participants react during periods of uncertainty in the financial markets. When volatility rises or equity markets decline, transfers into stable value increase. This behavior, commonly referred to as flight-to-safety, has manifested in every major market event over the past two decades.

The strength of this pattern becomes clear when industry-level transfer flows are compared with the Volatility Index (VIX), which summarizes overall market stress. Transfers show a statistically meaningful connection to volatility, with a correlation of +45% and a coefficient of determination (R^2) of 20%. This implies that approximately one-fifth of industry level short-term variation in transfer behavior is associated with movements in the VIX¹. While an R^2 of 20% might initially appear modest, this value is significant in behavioral finance and social science analyses of general population behavior. The relationship is further evident in the time series shown in Figure 1.

¹ Although participants may not monitor the VIX directly, the index captures the market environment in which individuals seem to be more active in making allocation decisions.

DETAILED ANALYSIS AND RESULTS

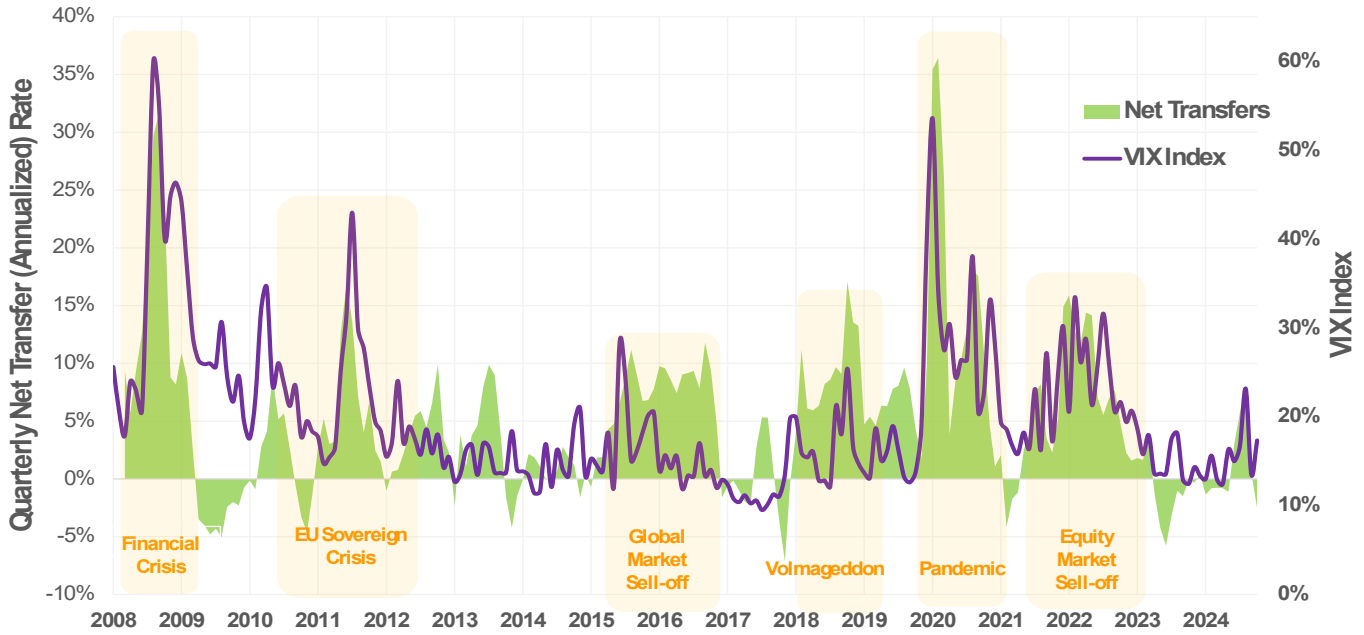


Figure 1: Industry Net Transfers and Their Relationship with VIX Index



In-plan transfer activity correlates positively with elevated VIX levels.

If we examine participant transfers grouped by different VIX levels in Figure 2, a clear pattern emerges. As volatility rises, especially above 30%, median transfers become positive and the distribution of outcomes widens. In these higher VIX buckets, both the median and upper quantiles of transfer rates are higher than at lower volatility levels, indicating larger positive transfers into stable value during those periods in the historical sample.¹

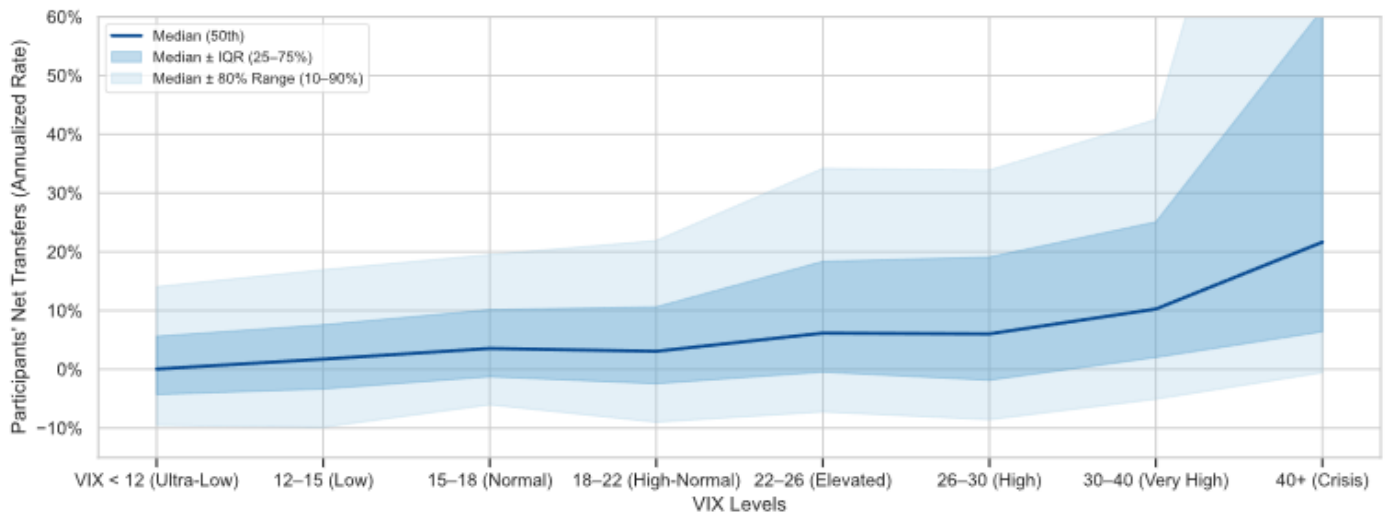


Figure 2: Net Transfer Patterns Across VIX Levels

¹ Figure 2 is constructed from fund-level net transfer data; with each observation corresponding to a fund's time-series, in contrast to Figure 1, which is based on an industry-level aggregate index.

DETAILED ANALYSIS AND RESULTS



Industry-level stable value cash flows exhibit a negative association with S&P 500 equity returns.

Further analysis of the distribution of aggregated industry cash flows against equity performance shows a broadly negative relationship. When quarterly cash flows are plotted against the S&P 500 Total Return Index in Figure 3, many of the larger positive flow observations occur when equity returns are near or below zero, and the fitted regression line slopes downward. At the aggregate industry level, cash flows exhibit a correlation of -48% with S&P 500 quarterly returns, and the regression yields an R^2 of 23%, indicating that differences in equity performance account for about one-quarter of the variation in flows.



Figure 3: Participant Cash Flows Since 2008 Against the SPTR Index



The same flight-to-safety pattern appears across plan sponsor sectors, rather than being concentrated in specific industries.

Sector-level sensitivity is examined by computing correlations between net participant flows and three-month equity returns. For each North American Industry Classification System (NAICS) sector, correlations are derived from the sector-level time series of flows and the market indicator.

These results are descriptive, and no formal conclusions about sector effects or statistical significance are drawn. Visual inspection of Figure 4 suggests that correlations with equity returns are negative across sectors. The magnitude of these relationships varies across industries: sectors such as Health Care and Social Assistance, Professional, Scientific, and Technical Services, and Manufacturing appear to show relatively stronger sensitivity, while sectors such as Mining and Agriculture show more muted responses. The 95% confidence intervals indicate some variation across sectors but generally support the observed negative direction of the correlations.

DETAILED ANALYSIS AND RESULTS

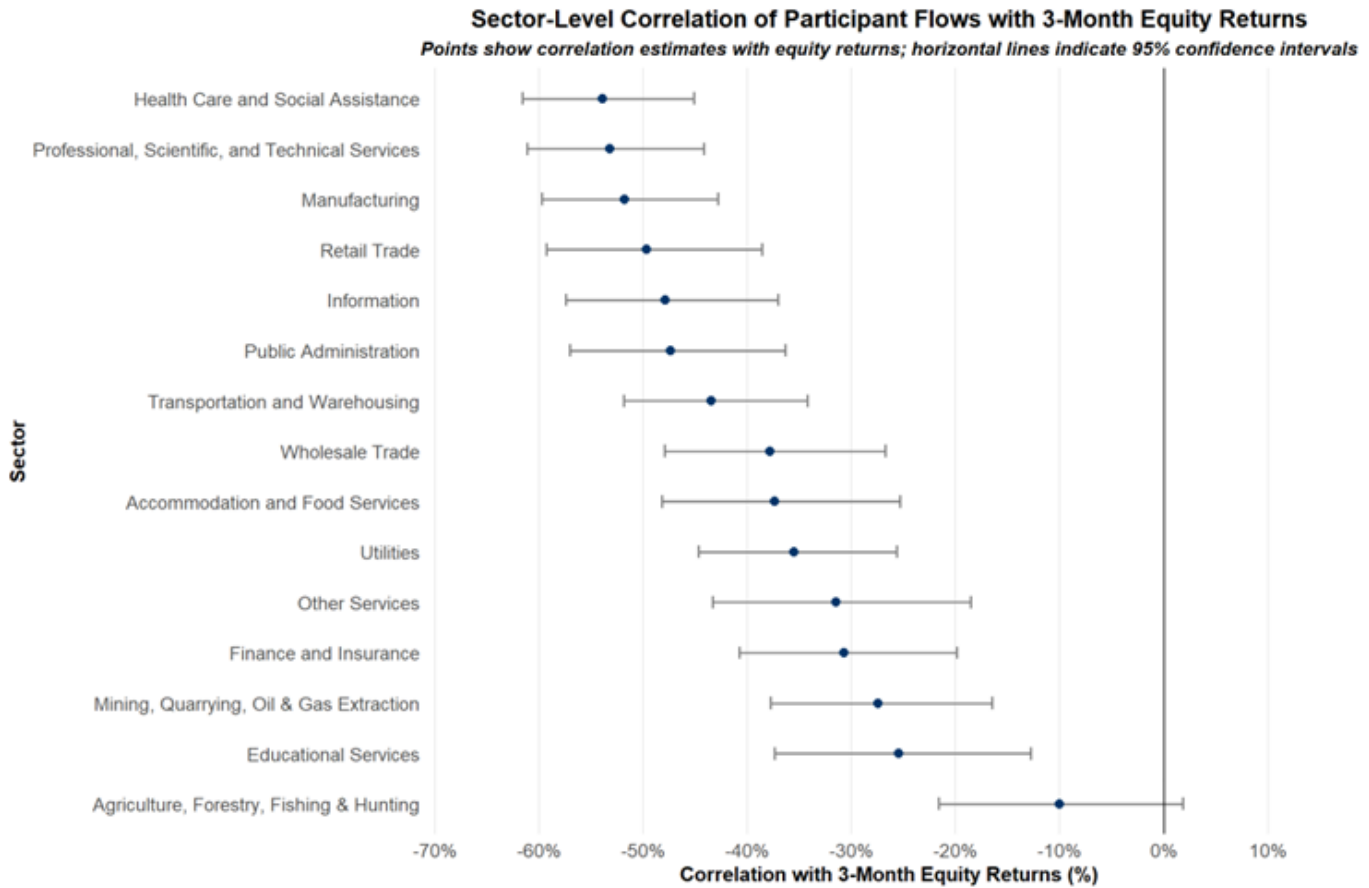


Figure 4: Correlation of Participant Flows with Equity Returns by NAICS Sector



The post-2022 rate environment makes the sensitivity of stable value cash flows to crediting rate deficits observable for the first time.

For over two decades, stable value funds operated in an environment where short-term rates rarely exceed crediting rates by meaningful margins, and interest rate competitiveness historically played a more limited role in overall flows. That regime changed in 2022. When interest rates rose rapidly, money-market yields moved above stable value crediting rates for the first time in more than 20 years. As crediting rate deficits widened, net withdrawals from stable value funds increased. Figure 5 illustrates this relationship for prior and post-Q2 2022 period. As the deficit between stable value crediting rates and the 6-month U.S. Treasury yield grows, net cash flows become more negative, indicating higher outflows from stable value funds during months when the rate gap is widest.

DETAILED ANALYSIS AND RESULTS

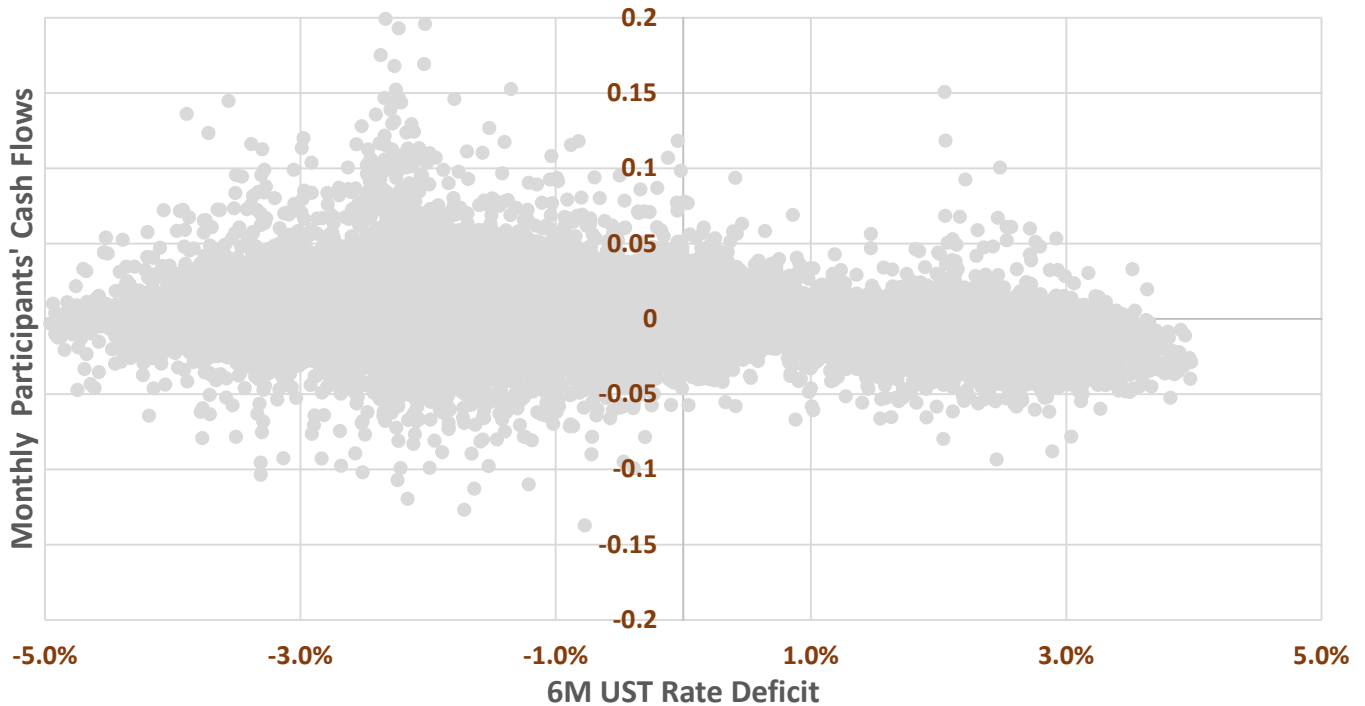


Figure 5: Net Cash Flow Response to Rate Deficit

To quantify this relationship, we regress the participant cash-flow index across all funds on the crediting-rate deficit over the post-2022 period. The regression statistics are provided in Table 1¹.

Regression Against Fund Indices	Correlation	Coefficient of Determination	P-Value	Number of Observations
Post-2022 sample	-37%	13.5%	0.00%	7,979

Table 1: Regression Statistics: Post-2022 Crediting Rate Deficit to 6M UST Rate



Higher inactive participant concentrations are associated with more variable out-of-plan flows, while in-plan transfers show limited sensitivity to the inactive share.

For the pre 2022 period, the same regression produces smaller coefficients that are not statistically significant. In other words, the association between crediting rate deficits and net cash flows appears much stronger in the recent high rate environment than in the earlier years of the dataset.

¹ The R² (coefficient of determination) of 13.5% means that around one-seventh of the variation is captured by this relationship. The p-value summarizes the statistical significance of the result; a very small p-value suggests that the observed relationship is unlikely to be due to random chance alone. These statistics describe historical associations and do not, by themselves, imply causation.

DETAILED ANALYSIS AND RESULTS

The influence of participant demographics becomes clearer when examining how flows change with the share of inactive participants in a plan. Our data analysis shows that contributions and distributions show a different relationship with mostly active vs inactive plans, while transfers remain largely unaffected.

In Figure 6, plans are grouped into quantile buckets based on the proportion of inactive participants. Distribution activity strengthens as the share of inactive increases. The median net contribution and distribution rate becomes more negative as plans hold a larger proportion of inactive accounts, and the dispersion around the median widens. This widening indicates that plans with higher inactive concentrations experience not only greater distribution pressure but also more volatility in those distributions. Such behavior aligns with the structural characteristics of inactive participants, who are more likely to withdraw assets when changing employers, rolling over balances, or facing liquidity needs.

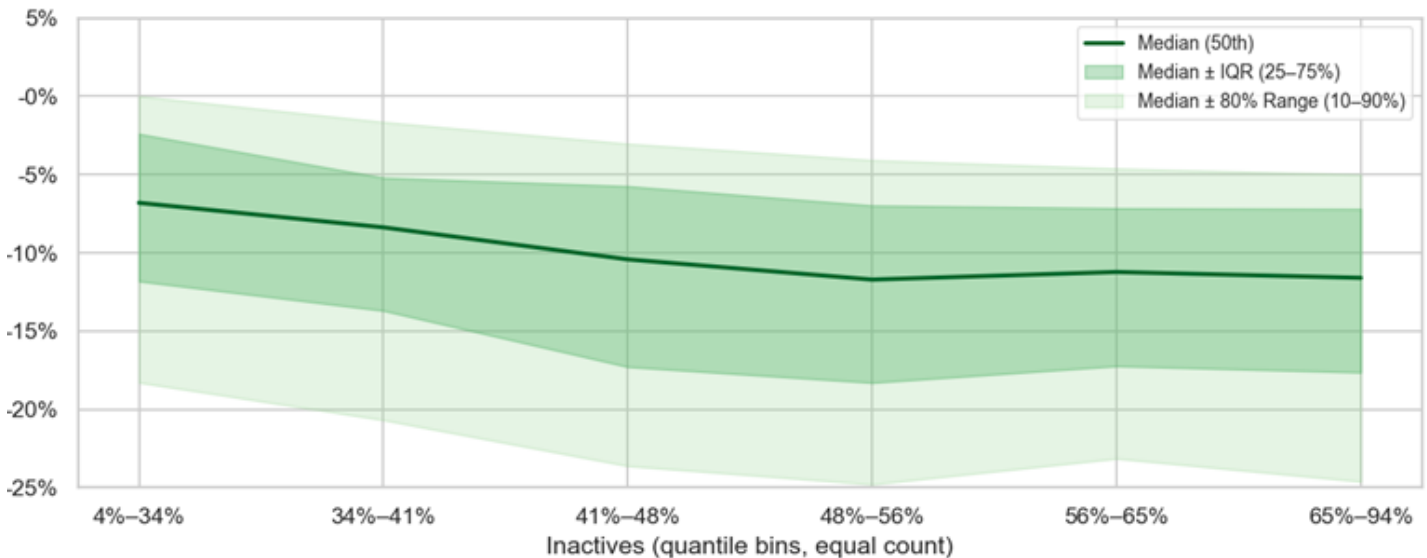


Figure 6: Net Contributions/Distributions Across Inactive Participant Quantiles (Monthly rates annualized)

In contrast, net transfers in Figure 7 show almost no sensitivity to the inactive proportion of the plan. When plans are grouped into buckets by inactive population share, the median transfer rate remains relatively stable across buckets. The interquartile and 10–90 percent ranges also show limited movement, indicating that higher concentrations of inactive participants do not meaningfully alter transfer behavior. This stability is consistent with the broader findings in this report: transfers respond primarily to market conditions and less to the demographic composition.

DETAILED ANALYSIS AND RESULTS

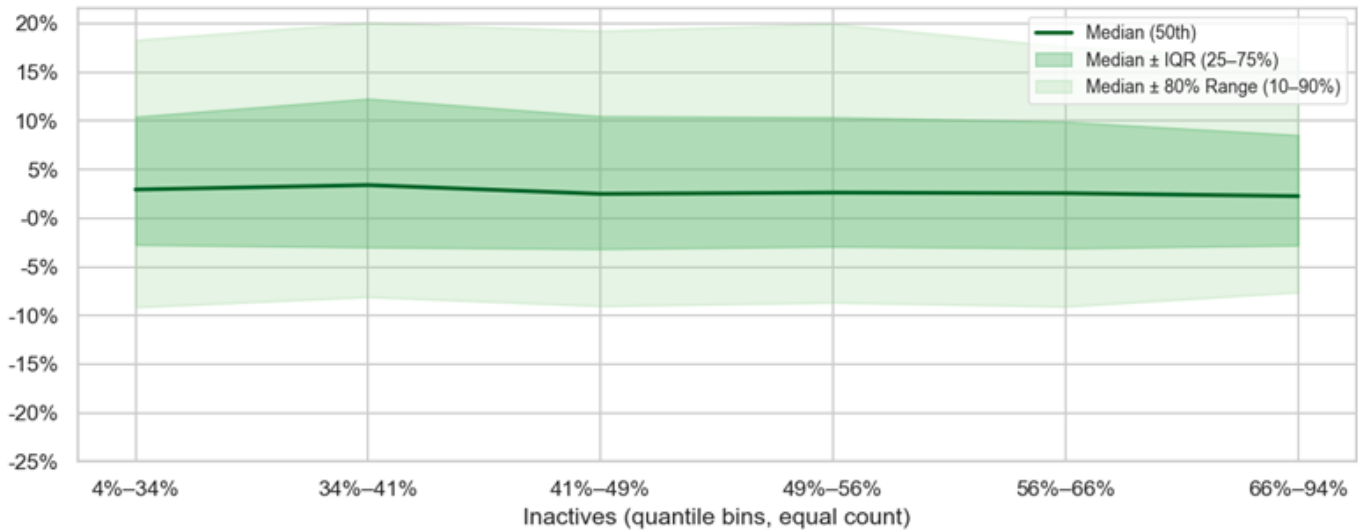


Figure 7: Net Transfers Across Inactive Participant Quantiles (Monthly rates annualized)

These two charts highlight an important distinction in participant behavior. **Inactive participants drive higher and more variable distribution activity, which can amplify liquidity needs at the plan level. Transfers, however, remain predominantly market-driven and do not differ substantially between active and inactive populations.** As a result, the active-inactive split is a meaningful indicator of potential distribution pressure, not because it changes how participants react to market stress, but because inactive participants are structurally more likely to take money out of the plan regardless of market conditions. Plans with larger inactive populations therefore carry inherently higher distribution volatility and greater exposure to demographic-driven liquidity risk.

The greater sensitivity of out-of-plan flows in inactive-heavy plans also appears when crediting rate deficits widen, relative to active-heavy plans.

The same pattern appears when the sensitivity to crediting rate deficits is examined separately for active-heavy plans and inactive-heavy plans. Inactive-heavy plans, defined as those where inactive participants hold at least 60 percent of total assets, show a stronger distribution response to widening crediting-rate deficits. These plans are represented by the red points in Figure 8, while active-heavy plans are in blue. As deficits grow, distributions in inactive-dominant plans fall more sharply, producing a steeper trend line. Active-heavy plans also show some rate sensitivity, but the relationship is more muted. This highlights the structural role of demographics: inactive participants are more likely to withdraw when external yields rise, whereas active participants tend to maintain steadier contribution and distribution patterns.

DETAILED ANALYSIS AND RESULTS

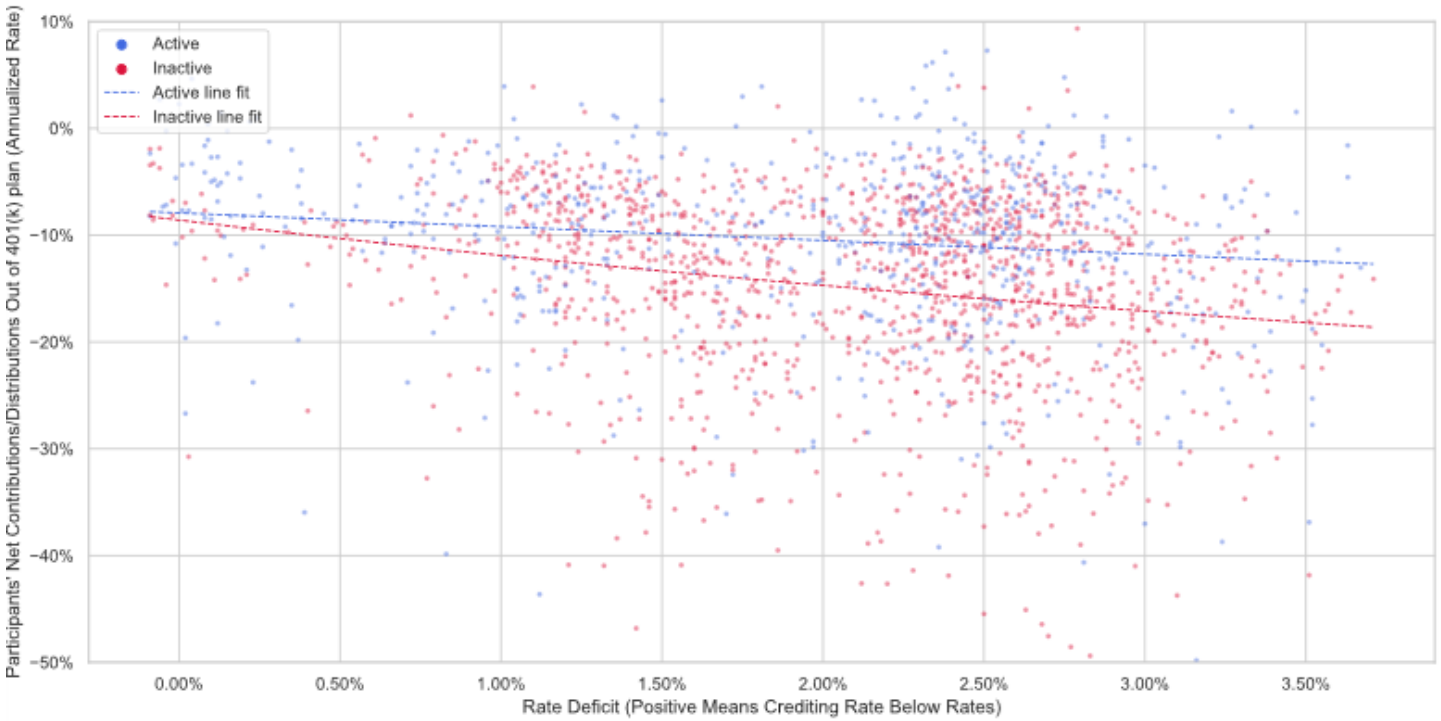


Figure 8: How Net Contributions/Distributions Shift with Rate Deficits

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Case example of how participant age influences cash-flow behavior.

To study how demographic characteristics shape participant behavior, we examined a case example of an anonymous plan where age-split data was available since June 2022. This allowed us to observe how both transfers and distributions vary across different age groups in the period when crediting rate deficits widened and short-term yields became more competitive. Table 2 below summarizes average monthly net transfer activity by age group, alongside the corresponding distribution rates.

	<30	30 - 39	40 - 49	50 - 59	60 - 69	70+	All
Average Monthly Net Transfer Rate ¹	0.03%	0.30%	0.48%	0.49%	0.27%	0.15%	0.27%
Average Monthly Distribution Rate ²	-3.19%	-0.93%	-0.56%	-0.71%	-0.89%	-1.47%	-1.05%

Table 2: Net Transfer Statistics by Age

1 Net transfers as a percentage of AUM.
2 Withdrawals as a percentage of AUM.

DETAILED ANALYSIS AND RESULTS

Across this case example, average monthly net transfer rates are modest for all age groups. Transfer activity is highest among participants aged 40–59 and lowest among the youngest (<30) and oldest (70+) cohorts. Distribution patterns show a different profile:

- The under-30 group has the highest distribution rate,
- Distributions are moderate for participants in their 30s through 50s, and then rise again among participants over age 70.

These results suggest that, at least for the case studied, transfer and distribution behavior can vary across age groups, but further data would be needed to draw broader conclusions about age-related patterns in the wider stable value population.

KEY TAKEAWAYS FOR THE STABLE VALUE INDUSTRY

The analysis highlights certain recurring behavioral patterns that help explain how stable value cash flows respond to market conditions, rate environments, and participant structure.

CASH FLOWS MUST BE DECOMPOSED TO BE UNDERSTOOD.

Participant cash flows are the sum of distinct components: in-plan transfers, contributions, and distributions. These flows reflect different participant decisions, react to different drivers, and carry different behavioral signals. When combined, their effects blend together; when decomposed, they reveal relationships that explain how participants use stable value funds across market environments.

TRANSFERS CONSISTENTLY EXHIBIT A FLIGHT-TO-SAFETY PATTERN.

Across major stress periods, higher volatility and negative equity returns correspond to increased transfers into stable value. This behavior remains one of the most predictable features of participant activity and shows a consistent pattern across most sectors, not just a phenomenon concentrated in a few industries.

DISTRIBUTIONS RESPOND TO CREDITING RATE DEFICITS.

The post-2022 period shows that meaningful rate differentials increase outflows, especially when short-term market yields exceed stable value crediting rates.

INACTIVE PARTICIPANTS ARE ONE DRIVER OF DISTRIBUTION VARIABILITY.

Plans with a high share of inactive balances experience higher and more volatile distribution activity, making the active-inactive split one determinant of liquidity risk.

AGE MAY PLAY A ROLE IN SHAPING FLOW PATTERNS.

In the anonymous case study example, transfer and distribution activity differs across age groups, though broader data would be needed to determine how consistently these patterns appear across the full stable value population.

UNDERSTANDING BEHAVIORAL CHANNELS IMPROVES LIQUIDITY PLANNING.

Recognizing how market stress and participant demographics influence transfers and distributions provides a clearer framework for anticipating cash-flow patterns and managing plan-level liquidity exposures.

APPENDIX

The data covered for this study has 345 Individual Plans sourced from 11 different stable value managers. The total amount of book value reported as of the last available month was \$228 billion. A summary is described in this appendix. The reported plans, which were grouped by each manager, did not have the same start date and end date. The earliest start dates provided by each manager and the latest end dates are also shown below. (It should be noted that the book values are as of end of month):

Source	Plans	Dates	Stable Value Fund Balances
Manager 1	9	Jan 07 – Jun 25	\$1.8B
Manager 2	44	Nov 06 – Jun 25	\$14.0B
Manager 3	78	Feb 03 – Jun 25	\$36.8B
Manager 4	52	Dec 06 – Jun 25	\$56.9B
Manager 5	68	Feb 01 – Jun 25	\$44.6B
Manager 6	25	Aug 01 – Jun 25	\$6.5B
Manager 7	7	Jan 02 – Jun 25	\$13.8B
Manager 8	9	Feb 04 – Dec 23	\$13.3B
Manager 9	22	Nov 97 – Jun 25	\$19.1B
Manager 10	17	Jul 04 – Jun 25	\$13.7B
Manager 11	14	Feb 02 – Jun 25	\$7.5B
Total	345		\$228B

Table 3: Individual Plans Data summary

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