Insights
Fixed Income

Q2 2023

Systematic Value Calculation For Fixed Income ETFs

The Step-by-Step Calculation and Hypothetical Example

What is Systematic Value?

Fixed income ETFs have provided investors of all profiles, from large institutions to retail investors, an alternative tool to access the cash bond market. For insurance companies in particular, the use of fixed income ETFs has been steadily growing. This increased use has been driven by recent statutory guidance relating to how insurers account for National Association of Insurance Commissioners (NAIC) designated fixed income ETFs. This new methodology is known as Systematic Value.

Fixed income ETFs represent a portfolio of fixed income securities. Like equity ETFs, these securities trade as a single security on a stock exchange. The continuous and transparent pricing of fixed income ETFs on an exchange, often associated with equities, has transformed the traditional fixed income trading landscape. These equity like characteristics have also presented a new consideration for statutory accounting purposes, since fair value treatment of equities differs from traditional accounting practices for individual bonds.

Fair value accounting generally refers to the accounting of an asset based on the current market price. For fixed income ETFs, the Net Asset Value (NAV) is used. The NAV represents the value of each ETF share's portion of the fund's underlying bonds and cash at the end of each trading day. This treatment subjects an insurer's balance sheet to potential volatility as the fixed income ETF's NAV changes alongside shifting market conditions, just as the market price would for an individual bond.

In April 2017, the NAIC voted to adopt "Systematic Value" (SV) as an option for accounting for NAIC-designated fixed income ETFs. SV is a modified amortized cost accounting method which will allow fixed income ETFs to more closely mirror the effective interest method applied to individual bonds. While the process involves adjustments to book value at the time of reporting (at least quarterly), it aims to significantly reduce the mark-to-market volatility of fair value (NAV) reporting for fixed income ETFs.

This development is an important step towards increased adoption of fixed income ETFs. Insurers now have statutory accounting framework clarity and access to a powerful portfolio management tool in the form of the ETF structure.

Important Events and Procedures NAIC-rated fixed income ETFs are to be reported on Schedule D, Part 1 and insurers must designate which funds they choose to account for using SV on their statutory financial statements. If the ETF holding is not designated for SV, it will default to fair value NAV reporting. Importantly, once an election of SV or a default of fair value is made, it cannot be changed unless the position is liquidated and then repurchased outside of the wash sale rule window.

Insurers interested in electing the SV method should contact their accounting software vendor for implementation questions. Insurers may also direct questions to the SPDR Insurance ETF Team at USSPDR_Insurance@ssga.com for questions relating to aggregate cash flow files for SPDR ETFs.

How Does Systematic Value Work?

The SV method allows insurers to adjust book value based on differences between forward looking cash flows and fund distributions. The Internal Rate of Return (IRR) or "book yield" is calculated based on projected cash flows of an ETF's underlying holdings. Deviations between the book yield and actual ETF dividend distribution result in a book value adjustment in each period.

Figure 1, demonstrates the SV method calculation process for an ETF purchased in April 2020 and reported monthly through June 2021. The initial purchase price of $30.63 reflects transaction costs.

Figure 1
Systematic Value (SV) Accounting Calculation Example

1	**Determine Effective Book Yield**	Determine the "effective book yield" by calculating the Internal Rate of Return (IRR) using a schedule of projected cash flows (provided by third-party accounting software data vendor, or ETF Provider) and the book value. The internal rate of return is illustrated in *Figure 2* as the calculated book yield of 1.73% at time of purchase.
2	**Calculate Monthly Effective Interest** Effective Book Yield from prior month x Prior Month Ending Book Value/12	The initial book value is the net purchase price — previously referenced in this example at $30.63. The book yield of 1.73% multiplied by the initial book value of $30.63 and divided by 12 results in the monthly effective interest calculation of $.0442 for month end April 29, 2020.
3	**Establish Book Value Adjustment** Effective Interest — Actual ETF Distribution	The difference between the monthly effective interest calculation $.0442 and the actual ETF distribution of $.0421 resulted in a book value adjustment of $.0021.
4	**Adjust Book Value per Share for End of Period Systemic Value Calculation** Prior Period Ending Book Value + Book Value Adjustment	The initial book value of $30.63 plus the book value adjustment of $.0021 results in the systemic value, or ending book value per share, of $30.6321 on April 29, 2020.

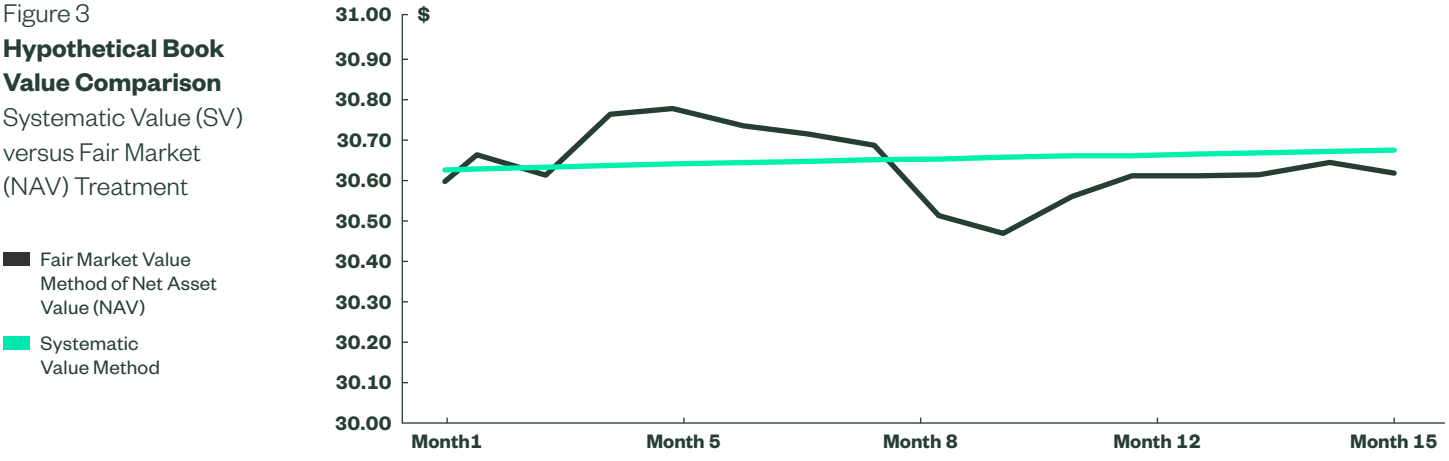
Figure 2
Systematic Value (SV) Accounting Calculation Table

Date	NAV ($)	Systematic Value ($)	Book Yield (%)	Effective Interest ($)	Distribution ($)	Book Value Adjustment ($)
Initial Purchase Date	30.6004	30.6300	1.73	0.0000	0.0000	0.0000
Month 1	30.6652	30.6321	1.78	0.0442	0.0421	0.0021
Month 2	30.6157	30.6358	1.79	0.0455	0.0419	0.0036
Month 3	30.7636	30.6396	1.77	0.0458	0.0419	0.0039
Month 4	30.7776	30.6429	1.75	0.0451	0.0418	0.0033
Month 5	30.7356	30.6458	1.78	0.0447	0.0418	0.0029
Month 6	30.7156	30.6483	1.77	0.0455	0.0431	0.0024
Month 7	30.6882	30.6518	1.77	0.0452	0.0417	0.0035
Month 8	30.5176	30.6530	1.81	0.0452	0.0440	0.0012
Month 9	30.4745	30.6570	1.83	0.0464	0.0423	0.0040
Month 10	30.5641	30.6603	1.84	0.0467	0.0435	0.0032
Month 11	30.6144	30.6604	1.88	0.0470	0.0470	0.0001
Month 12	30.6144	30.6640	1.89	0.0479	0.0443	0.0037
Month 13	30.6166	30.6664	1.92	0.0482	0.0458	0.0024
Month 14	30.6468	30.6694	1.95	0.0490	0.0460	0.0030
Month 15	30.6208	30.6722	1.95	0.0497	0.0470	0.0028

For illustrative purposes only.

This step-by-step process is calculated on a recurring basis (at least quarterly) as long as the position is held. As illustrated in Figure 3, the SV method in this example resulted in a reduction of volatility relative to fair value accounting treatment. For fair value reporting, the ETF NAV is marked-to-market at each month-end reporting date.

Figure 3
Hypothetical Book Value Comparison
Systematic Value (SV) versus Fair Market (NAV) Treatment



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Contact Us

For questions about the Systematic Value calculation, or how our SPDR ETF offering can potentitally benefit insurers, please reach out to the SPDR Team at USSPDR_Insurance@ssga.com.

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While the shares of ETFs are tradable on secondary markets, they may not readily trade in all market conditions and may trade at significant discounts in periods of market stress.

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