

COVER LETTER

The Valuation of Securities (E) Task Force has made a referral to the Life Actuarial (A) Task Force to consider five questions regarding the potential for obtaining additional measures of company investment risk by adding additional modeling capabilities to the NAIC's Securities Valuation Office. The five questions are copied below for convenience, and also embedded in Attachment 1 along with additional background.

Please send comments to [Scott O'Neal](#).

Referral – VOSTF refers this matter to the above referenced Committees, Task Forces and Working Groups for consideration and requests a response from you by May 15th outlining:

1. Indicate if your group is supportive of creating this capability within the SVO.
2. List the investment analytical measures and projections that would be most helpful to support the work performed by your respective group.
3. Describe how your group would utilize the data and why it would be of value.
4. Are there other investment data or projection capabilities that would be useful to your group that could be provided by commercially available data sources or investment models? And if so, please list them.
5. Any other thoughts you may have on this initiative.

Attachment Listing:

Attachment 1 - Referral on Additional Market and Analytical Information for Bond Investments

Attachment 2 – Blanks Market Data Disclosure

Attachment 3 – Blanks Market Data Options



TO: Elizabeth Kelleher Dwyer, Chair, Financial Conditions (E) Committee
 Marlene Caride, Chair, Financial Stability (E) Task Force
 Bob Kasinow, Chair, Macroprudential (E) Working Group
 Thomas Botsko, Chair, Capital Adequacy (E) Task Force
 Phillip Barlow, Chair, Risk-Based Capital Investment Risk and Evaluation (E) Working Group
 Cassie Brown, Chair, Life Actuarial (A) Task Force
 Judy Weaver, Chair, Financial Analysis (E) Working Group
 Dale Bruggeman, Chair, Statutory Accounting Principles (E) Working Group
 Fred Andersen, Chair, Valuation Analysis (E) Working Group

FROM: Carrie Mears, Chair, Valuation of Securities (E) Task Force

CC: Charles A. Therriault, Director, NAIC Securities Valuation Office (SVO)
 Eric Kolchinsky, Director, NAIC Structured Securities Group (SSG) and Capital Markets Bureau
 Dan Daveline, Director, NAIC Financial Regulatory Services
 Todd Sells, Director, NAIC Financial Regulatory Policy & Data
 Marc Perlman, Managing Investment Counsel, NAIC Securities Valuation Office (SVO)
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 Andy Daleo, Sr. Manager I, NAIC P/C Domestic and International Analysis
 Dave Fleming, Sr. Life RBC Analyst, NAIC Financial Regulatory Affairs
 Jennifer Frasier, Life Examination Actuary, NAIC Financial Regulatory Affairs
 Scott O'Neal, Life Actuary, NAIC Financial Regulatory Affairs
 Eva Yeung, Sr. P/C RBC Analyst/Technical Lead, NAIC Financial Regulatory Affairs

RE: Referral on Additional Market and Analytical Information for Bond Investments

DATE: February 13, 2023

Summary – The Investment Analysis Office (IAO) staff recommended in its Feb. 25, 2022, memorandum to the Valuation of Securities (E) Task Force (VOSTF) (attached hereto, Blanks Market Data Disclosure v2.pdf) that it would like additional market-data fields added to the annual statement instructions for bond investments. This was, in part, based upon the NAIC's adoption in 2010 of the recommendations of

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the Rating Agency (E) Working Group (RAWG), which was formed following the Great Financial Crisis of 2007-2008 to study the NAIC's reliance on rating agencies, and the IAO staff's recent findings in its Nov. 2021 memo regarding disparities between rating agencies. RAWG recommended that: 1) regulators explore how reliance on rating agencies can be reduced when evaluating new, structured, or alternative asset classes, particularly by introducing additional or alternative ways to measure risk; and 2) consider alternatives for regulators' assessment of insurers' investment risk, including expanding the role of the NAIC Securities Valuation Office ("SVO"); and 3) VOSTF should continue to develop independent analytical processes to assess investment risks. These mechanisms can be tailored to address unique regulatory concerns and should be developed for use either as supplements or alternatives to ratings, depending on the specific regulatory process under consideration.

The NAIC's need for alternative measures of investment risk has only increased since RAWG made its recommendations, as privately issued and rated complex structured finance transactions have become commonplace without adequate ways of identifying them. The SVO recommended the following market data fields to be added to the annual statement instructions: Market Yield, Market Price, Purchase Yield, Weighted Average Life, Spread to Average Life UST, Option Adjusted Spread, Effective Duration, Convexity and VISION Issue ID. Please refer to the attached memo for more detail on each data field.

In comments received from industry there were question as to how the SVO, VOSTF and/or other regulators who would receive the analytic data included in the proposal would utilize that information and why it is of value to them. The SVO was also asked to consider industry's recommendation that the NAIC be responsible for calculating this analytical information by utilizing commercially available data sources and investment models instead of having each individual insurance company incur the costs to implement system changes. The SVO shared their thoughts on the alternatives in the Jul. 14, 2022, memorandum to the VOSTF (attached, Blanks_Market_Data_Options_v3.pdf).

Capabilities like this within the SVO would permit it to calculate for regulators all the analytic values previously mentioned for any Schedule D investment along with additional measures such as key rate duration (a measure of interest rate sensitivity to maturity points along the yield curve), sensitivity to interest rate volatility, principal and interest cash flow projections for any security or portfolio for any given interest rate projection, loss estimates for any security for any given scenario and many others measures.

Referral – VOSTF refers this matter to the above referenced Committees, Task Forces and Working Groups for consideration and requests a response from you by May 15th outlining:

1. Indicate if your group is supportive of creating this capability within the SVO.
2. List the investment analytical measures and projections that would be most helpful to support the work performed by your respective group.
3. Describe how your group would utilize the data and why it would be of value.
4. Are there other investment data or projection capabilities that would be useful to your group that could be provided by commercially available data sources or investment models? And if so, please list them.
5. Any other thoughts you may have on this initiative.

Please contact Charles Therriault or Marc Perlman with any questions.

VOSTF_Referral_Bond_Risk_Measures_2023-02-13.docx



TO: Carrie Mears, Chair, Valuation of Securities (E) Task Force
Members of the Valuation of Securities (E) Task Force

FROM: Charles A. Therriault, Director, NAIC Securities Valuation Office (SVO)
Marc Perlman, Managing Investment Counsel, NAIC Securities Valuation Office (SVO)

CC: Eric Kolchinsky, Director, NAIC Structured Securities Group (SSG) and Capital Markets Bureau

RE: Additional Market Data Fields for Bond Investments

DATE: February 25, 2022

The SVO proposes adding additional market-data fields for bond investments to the annual statement instructions based on 2010 adopted recommendations of the Rating Agency (E) Working Group (RAWG) and the IAO staff's findings regarding the discrepancies between ratings, presented in its Nov. 2021 memo.

The RAWG was formed after the Financial Crisis of 2008 and was charged with gathering and assessing information on:

1. *The problems inherent in reliance on ratings, including impact on the filing exempt ("FE") process and Risk-Based Capital ("RBC");*
2. *The reasons for recent rating shortcomings, including but not limited to structured security and municipal ratings;*
3. *The current and potential future impact of ratings on state insurance financial solvency regulation; and*
4. *The effect of the use of NRSRO ratings on public confidence and public perception of regulatory oversight of the quality of insurance.*

The RAWG made the following summary recommendations in their Apr. 28, 2010, report that was adopted by the Financial Condition (E) Committee (emphasis added):

1. **Regulators explore how reliance on ARO (Approved Ratings Organization) ratings can be reduced when evaluating new, structured, or alternative asset classes, particularly by introducing additional or alternative ways to measure risk;**
2. **Consider alternatives for regulators' assessment of insurers' investment risk, including expanding the role of the NAIC Securities Valuation Office ("SVO"); and**

3. *When considering continuing the use of ratings in insurance regulation, the **steps taken by the NRSROs in correcting the causes that led to recent rating shortfalls**, including the NRSROs' efforts in implementing the recommended structural reforms, should be taken into account.*

As the IAO staff demonstrated with the analysis in its Nov. 29, 2021, memo regarding ratings discrepancies, not all credit rating provider (CRP) ratings reflect a reasonable assessment of a security's risk, indicating that rating shortfalls persist today. The NAIC has not made additional progress in reducing reliance on CRPs and the IAO proposed several steps in its memo to accomplish that objective. As noted by the RAWG and reflected in the IAO's memo, there persists a situation where "... ratings are neither consistent nor uniform for individual securities, nor across different types and classes of securities..." However, the role of the SVO has not been expanded to include "... evaluating credit and other risks of securities."¹

One step towards introducing alternative ways to measure a security's risk would be to require insurers to report various analytical measures about each security including metrics such as its current market yield, interest rate sensitivity, spread relative to risk-free securities such as United States Treasuries and average remaining life. The more a security's market yield and spread differ from similarly rated securities, the more likely it is that the implied market-perceived risk of that security differs from the risk indicated by the credit rating assigned to it. The yield difference or spread in basis points can potentially help identify securities whose risk assessment warrants further review by the SVO, examiners or other regulatory groups, for example, a AAA rated security with a yield of 5%. Other fields that measure a security's price sensitivity to interest rate movements may also help to identify market-perceived risk inconsistent with the assigned credit rating. These additional market data fields would align with the RAWG's referral to the Task Force and SVO Initiatives (EX) Working Group, as noted in their following detailed recommendations (emphasis added):

1. *Referral to the NAIC Valuation of Securities (E) Task Force: VOS should continue to **develop independent analytical processes to assess investment risks**. These mechanisms can be tailored to address unique regulatory concerns and should be developed for **use either as supplements or alternatives to ratings**, depending on the specific regulatory process under consideration.*
2. *Referral to the NAIC Valuation of Securities (E) Task Force: ARO ratings have a role in regulation; however, since **ratings cannot be used to measure all the risks that a single investment or a mix of investments may represent in an insurer's portfolio**, NAIC policy on the use of ARO ratings should be **highly selective and incorporate both supplemental and alternative risk assessment benchmarks**.*
3. *Referral to the NAIC's SVO Initiatives (EX) Working Group: NAIC should evaluate whether to **expand the use of SVO and increase regulator reliance on the SVO for evaluating credit and other risks of securities**.*

Recommendation: The SVO recommends the following market data fields and related descriptions be added to all the annual statement instructions, through a referral to the Blanks (E) Working Group, for all bonds reported on Schedule D, Part 1 (those within scope of SSAP No. 26R – Bonds and SSAP No. 43R – Loan-Backed and Structured Securities). To allow sufficient time for insurers to update their systems, the SVO further recommends that the changes be implemented as electronic only fields effective beginning with the reporting year ending December 31, 2023.

- Market Yield – The Market Yield is the internal rate of return discount rate that makes the net present value (NPV) of all expected cash flows equal to zero in a discounted cash flow analysis. Therefore, Fair

¹ Evaluating the Risks Associated with NAIC Reliance on NRSRO Credit Ratings – Final Report of the RAWG to the Financial Conditions (E) Committee, April 28, 2010

Value, which is already reported, is the present value (PV) of all expected cash flows discounted at the Market Yield.

- Market Price – The Market Price per unit of Par Value, which is already reported, is reflected in the Fair Value as of the financial statement date. The Market Price, which excludes accrued interest, when multiplied by Par Value and divided by 100 will be equal to the Fair Value.
- Purchase Yield – The Purchase Yield is the internal rate of return discount rate that makes the net present value (NPV) of all expected cash flows equal to zero in a discounted cash flow analysis as of the Acquired Date. Therefore, Actual Cost is the present value (PV) of all expected cash flows discounted at the Purchase Yield as of the Acquired Date.
- Weighted Average Life – The Weighted Average Life is the average length of time that each dollar of unpaid principal remains outstanding. The time weightings used in weighted average life calculations are based on payments to the principal. The calculation is "weighted" because it considers when the payments to the principal are made—if, for example, nearly all of the principal payments are made in five years, WAL will be close to five years. Weighted average life does not consider payments to interest on the loan. This value is recalculated at each statement date for the remaining principal payments.
- Spread to Average Life UST - The spread is the difference between the interpolated U.S. Treasury bond yield that matches the reported debt security's Weighted Average Life. Spreads between interpolated U.S. Treasuries and other bond issuances are measured in basis points, with a 1% difference in yield equal to a spread of 100 basis points.
- Option Adjusted Spread - The option-adjusted spread (OAS) is the measurement of the spread of a fixed-income security rate and the risk-free rate of return (typically U.S. Treasury yield), which is then adjusted to take into account an embedded option and expressed in basis points. The spread is added to the fixed-income security price to make the risk-free bond price the same as the bond. The option-adjusted spread considers historical data such as the variability of interest rates and prepayment rates. These calculations are complex since they attempt to model future changes in interest rates, prepayment behavior of mortgage borrowers, and the probability of early redemption.
- Effective Duration - This is a duration calculation for bonds that have embedded options. This measure of duration takes into account the fact that expected cash flows will fluctuate as interest rates change and is, therefore, a measure of risk given the security's Fair Value. As a formula, Effective Duration = $(P(1) - P(2)) / (2 \times P(0) \times Y)$, where $P(0)$ = the bond's Market Price per \$100 worth of par value, $P(1)$ = the price of the bond if the yield were to decrease by Y percent, $P(2)$ = the price of the bond if the yield were to increase by Y percent, and Y = the estimated change in yield used to calculate $P(1)$ and $P(2)$.
- Convexity - This is a measure of the curvature, or the degree of the curve, in the relationship between bond prices and bond yields. Convexity demonstrates how the duration of a bond changes as the interest rate changes.
- VISION ISSUE ID: The NAIC VISION system security ID reported in AVS+.

<https://naiconline.sharepoint.com/teams/SVOVOSTaskForce/Shared Documents/Meetings/2022/2022-04 - Spring National Meeting/04 - Blanks Referral Analytical Risk Measures/2021-053.01 Blanks Market Data Disclosure v2.docx>



TO: Carrie Mears, Chair, Valuation of Securities (E) Task Force
Members of the Valuation of Securities (E) Task Force

FROM: Charles A. Therriault, Director, NAIC Securities Valuation Office (SVO)
Marc Perlman, Managing Investment Counsel, NAIC Securities Valuation Office (SVO)

CC: Eric Kolchinsky, Director, NAIC Structured Securities Group (SSG) and Capital Markets Bureau

RE: Possible Options for Additional Market Data Fields for Bond Investments

DATE: July 14, 2022

Summary - The SVO proposed adding additional market-data fields for bond investments to the annual statement instructions in its memo dated Feb. 25, 2022, titled "Additional Market Data Fields for Bond Investments" that was discussed at the 2022 Spring National Meeting. The recommendation was based, in part, on 2010 adopted recommendations of the Rating Agency (E) Working Group (RAWG) and the NAIC Investment Analysis Office's (IAO) staff's findings regarding the discrepancies between ratings, presented in its Nov. 29, 2021 memo, "Rating Issues and Proposed Changes to the Filing Exemption Process." In this memo the SVO further outlines the regulatory benefits and proposes two possible approaches.

The benefits of collecting additional market-data for each insurer bond investment are several:

- Assist in SVO identification of securities with credit rating provider (CRP) ratings which may be inconsistent with a security's actual overall risk.
- Greater transparency for regulators into the risks and characteristics of insurer investments.
- Incorporation of insurer investment portfolio analysis into the examination process.
- Availability of more Level 1 and 2 Inputs which will be included in the AVS+ pricing data for all securities compared to the mostly Level 3 Inputs for only some securities today.
- Allow state insurance regulators to assess the capabilities of an insurer's investment management or risk management processes by reviewing the quality and accuracy the market data fields.
- Provide NAIC staff with the capability to run cash flow simulations on insurer investments.

Regarding the first bullet, the SVO would use this market-data information to help identify securities with credit rating provider (CRP) ratings that may be inconsistent with the security's actual overall risk. The SVO and SSG have raised concerns over the years about a number of asset classes (e.g. residential

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mortgage backed securities (RMBS), commercial mortgage backed securities (CMBS), public and private fund investments, principal protected securities (PPS) including CLO Combo Notes, regulatory transactions, residual interests, and now collateralized loan obligations (CLO), and structure equity and funds) and specific securities in other asset classes where a rating agency rating often does not adequately reflect the investment risk for NAIC purposes. The SVO needs this analytical information so that it can identify and take potential action on investment risk assessment inaccuracies. Without this data and potentially other information in the future, coupled with some level of discretion over NAIC Designations derived from ratings, the SVO and regulators will remain in the dark about these risks. Additionally, the incentive for significant risk-based capital arbitrage utilizing CRP ratings will likely continue to increase and rating agencies will effectively remain a de-facto “super regulator” in that any investment they assign a rating to is automatically accepted by the NAIC without any regulatory discussion, analysis, oversight or consideration as to how the rating agency’s decisions align to the NAIC’s statutory framework.

Inconsistent and potentially inaccurate assessments of investment risk is a critical issue not only for the Valuation of Securities (E) Task Force but for other state insurance regulatory groups that are interested in identifying and analyzing investment risks, whether it be at the individual security, asset class, legal entity or industry level. The following are just a few groups that have active work streams involving investment risk: Life Actuarial (A) Task Force, Capital Adequacy (E) Task Force and its Working Groups, Statutory Accounting Principles (E) Working Group, Financial Stability (E) Task Force, Macroprudential (E) Working Group and Financial Analysis (E) Working Group. The proposed market data fields will benefit each of these groups in their work assessing insurer investments and portfolio risks.

The requested market data fields other than purchase yield, which should be available from any investment accounting system, are all at the security issue level (i.e. CUSIP). Any insurer system that can receive security issue level data such as a market prices, credit ratings, bond factors, cashflows, or NAIC Designations should be able to accommodate these proposed security issue-level data fields. The SVO acknowledges this change will require time for insurer system providers to accommodate these new data fields into their data structures and Schedule D reporting applications. However, these data fields are very common in the management of a bond portfolio, and it would be a significant enterprise risk deficiency if an insurer’s investment managers did not have them.

Some alternate measures of risk (e.g. Sharpe Ratio and Sortino Ratio) were mentioned during the Task Force discussion. These metrics, however, would require insurers to calculate the total return and the standard deviation of those returns for each security they own in order to produce and report these metrics which would be significantly more costly and more appropriate for assessing relative value and less applicable for assessing investment risk.

Alternatives – The SVO was asked to consider industry’s recommendation that the NAIC produce these fields. Below are our thoughts on each alternative.

- **NAIC Produced Analytics** – The SVO can take on the responsibility for producing the analytical data elements requested in this proposal. To do so it would require enhancements to the SVO’s existing systems (VISION, AVS+ and STS), and vendor pricing data, investments in new systems to provide the modeling, more staff for the incremental and on-going support of these systems and processes, new data feeds to support the modeling software, and new data bases and reporting capabilities to provide the information to regulators. Enhancements would also

need to include the ability for insurers to provide electronically to the SVO the full security structure of any security that the modeling software does not know about. We strongly believe that the benefits to be gained by state regulators, the SVO and other NAIC groups with interests in investment risk of bringing this modelling capability in-house greatly outweigh, in the long run, the initial costs and effort to make these capabilities operational.

- **Pros:**
 - Market analytical information would be independently and consistently produced.
 - The SVO's pricing data would need to include more Level 1 and 2 Inputs for all securities versus primarily Level 3 Inputs for only some securities today.
 - Regulators would eventually be able to ask NAIC staff to model the risks or cash flows of any bond security or insurer bond portfolio, including, stress testing those securities and portfolios.
 - Regulators would have significantly greater transparency into the risks and characteristics of insurer investments.
 - Analytical analysis of insurer investment portfolios could be incorporated into the examination process.
 - The overall cost to insurers through any increased fee would likely be much less than each insurer building out its own capability to provide the data.
- **Cons:**
 - The NAIC would need to make significant enhancements to VISION, AVS+, and STS, and develop new reporting data bases.
 - The NAIC will need to license a security analytic modelling system and provide it with the data it requires, some of which may require new data licenses. This includes full access to vendor applications like Bloomberg or Aladdin.
 - The NAIC will incur additional fees for higher level of security pricing data. The NAIC will also need additional staff to develop and support the technology enhancements and to support the on-going modeling of securities and portfolios.
 - It may take longer for the NAIC to build this capability.
 - Insurers would still need to report some of this information on their Schedule D filings from data published through AVS+.
 - Insurers would need to provide the SVO with full security structure modeling and supporting data (e.g. collateral, payments, actions) for any security the analytic modelling system does not have within its data base.
- **Insurer Produced Analytics** – Insurer investment managers should already have the market data fields requested in this proposal. Insurers would need to get this information into their systems that produce their Schedule D filings. This option would require more up-front work on the part of the insurers and less by the NAIC. The uses of the data, however, whether by regulators, the SVO or other interested

NAIC groups, could be significantly more limited than in the first option, because of the inconsistency in data between insurers.

- **Pros:**
 - Insurers already have this information as part of their investment management or risk management processes.
 - State insurance regulators could assess the capabilities of an insurer's investment management or risk management processes by reviewing the quality and accuracy the market data fields.
 - The timeframe to implement would likely be shorter than the SVO having to build out this capability.
- **Cons:**
 - Insurer security pricing is very inconsistent today which will lead to a high degree of variability in these analytical values.
 - The modeling software and assumptions used by insurers to produce these analytical value can vary significantly which will also lead to a high degree of variability in the values.
 - Insurers and their system providers will need to develop new interfaces to ingest this data and produce it in their Schedule D filing. That time frame could vary significantly by vendor and insurer.
 - State insurance regulators would not be able to request the modeling of any investment security or portfolio.
 - Insurers would directly bear the expense of these changes which will likely be greater than it would be if the NAIC produced this information.

Next Steps – The SVO continues to strongly believe that these market data fields are an important first step in finding alternative ways to measure insurers investment risk and reducing the NAIC reliance rating agency ratings. As noted by the RAWG and reflected in the IAO's memo, there persists a situation where *"... ratings are neither consistent nor uniform for individual securities, nor across different types and classes of securities..."* yet the role of the SVO has not been expanded to include using these alternatives in *"... evaluating credit and other risks of securities."* The objective of this request is to begin addressing these investment risk issues but this may not be the only information needed.

Both alternatives will involve a commitment of resources either by the NAIC or industry. The major question before the Task Force is whether it has a preferred source for these market data fields: the NAIC's SVO or insurer reporting? The SVO believes that the first option would provide the most standardization in data and utility to regulators, the SVO and other interested NAIC groups and would be worth the slightly longer time and cost needed to develop the capabilities.

If, as the SVO recommends, the Task Force prefers the NAIC's SVO as the source of this analysis, then the next step would be a referral to the Financial Condition (E) Committee to request their sponsorship for this initiative and, if provided, begin a fiscal request. If Financial Condition (E) Committee declines to sponsor the initiative or if insurer reporting is the preferred source, we would recommend reverting to insurer reporting and directing the SVO staff to prepare the Blanks referral.

<https://naiconline.sharepoint.com/teams/SVOVOSTaskForce/Shared Documents/Meetings/2022/2022-08-11 - Summer National Meeting/07 - Blanks Referral Analytical Risk Measures/2021-053.XX Blanks Market Data Options.docx>