



AMERICAN ACADEMY *of* ACTUARIES

**Report on Capital Requirements for Hybrids
From the American Academy of Actuaries' Invested Asset Work Group**

**Presented to the National Association of Insurance Commissioners'
Hybrid RBC (E) Working Group**

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The following report contains a recommendation for the capital requirements for Hybrid securities. This report was prepared by the Life Capital Adequacy Subcommittee's Invested Asset Work Group. The Work Group would also like to thank the following individuals and organizations for their assistance and contributions in preparing this report: Jill Schildkraut-Katz, Mary Kuan, Julia Lawler, Tom White, Tom McGuire, Chris Anderson, Kevin Conery, Matti Peltonen, Jim Everett, Chris Evangel, Bob Carcano, and other staff members of the SVO.

Background

On October 3, 2006 the National Association of Insurance Commissioners' (NAIC) Hybrid RBC (E) Working Group approved an official charge to the American Academy of Actuaries' Invested Asset Work Group (AIAWG) to review appropriate capital charges for Hybrids. The official charge follows:

“By Nov. 17, 2006, the American Academy of Actuaries (AAA) will develop and present to the Hybrid RBC (E) Working Group, a work plan for reviewing the existing RBC charges for Hybrids, including preferred stocks and surplus notes. The work plan will incorporate input from regulators, the NAIC SVO and interested parties (including various investment stakeholders and experts).”

“This charge will be completed via interim meetings or conference calls as scheduled by the AAA using staff resources identified by the AAA. The AAA will provide interim reports and an eventual final report and recommendation at the Hybrid RBC (E) Working Group's quarterly NAIC meetings or other interim meetings or conference calls as scheduled by said Working Group. By the fall 2007 NAIC National Meeting, the AAA's final report will identify those Hybrids, including preferred stocks and surplus notes, for which the AAA recommends changes from existing RBC treatment.”

The Invested Asset Work Group accepted this charge from the NAIC Hybrid RBC Working Group and committed to provide an independent review of the risks inherent to the assets generically referred to as Hybrids (“Hybrids”).

The AIAWG is recommending to the NAIC the risk-based capital treatment for Hybrids for life insurers, health insurers, and property & casualty insurers. The expectation from the NAIC Hybrid Working Group is that the three risk-based capital formulas will treat Hybrids identically. The AIAWG received written support from the Health and Casualty Practice Councils and have included representatives from those Practice Councils to assist with this charge.

The work plan for the AIAWG was presented to the NAIC Hybrid RBC (E) Working Group in December 2006. The remainder of this document is a synopsis of the AIAWG's findings and the group's recommended risk-based capital treatment for Hybrids. The report is organized as follows:

- I. Executive Summary and Recommendations
- II. Methodology
- III. Definition of Hybrids
- IV. Features of Hybrids
- V. Risks of Hybrids
- VI. Comparison of NRSRO Risk Assessment and SVO Classification Processes
- VII. Methods for Calculating Required Capital

I. Executive Summary and Recommendations

Hybrids are an evolving asset class. The first generation (pre-1992) included traditional preferreds or preference shares; the second generation (1993 – 2003) included structured securities such as trust preferreds and mandatorily convertible securities; and the third generation (2003 and beyond) includes second generation structured securities with additional features such as coupon deferral, long maturity periods, and alternate forms of payment to the investor.

Hybrids, as a general class of securities, are similar to preferred equity, versus debt or common equity. A primary distinction between equity and debt is that debt, like these Hybrids, contains a maturity schedule, while common equity does not contain a schedule of principal repayment.

Hybrids are rated by the Nationally Recognized Statistical Rating Organizations (NRSROs). Each of the major rating agencies (e.g., Moody's, Standard & Poor's, Fitch, AM Best) provides ratings that are opinions on the credit quality of individual obligations, including Hybrids. The AIAWG recognizes that the NRSRO rating methodologies on Hybrids have continued to evolve along with developments in the Hybrid market. In general, NRSRO ratings address the possibility that a financial obligation may not be honored as promised. Long-term obligation ratings reflect both the likelihood of default and any financial loss that may be suffered in the event of default. Such an analysis focuses on credit risk, which by definition may not capture all non-credit investment risks that are pertinent for an investor; for example, an investor may also be concerned about extension or market risks. This is the case for all securities, not just Hybrids.

Aside from providing ratings on Hybrids, agencies may evaluate “debt-like” and “equity-like” characteristics in the context of determining how Hybrids should be treated in an analytical framework when evaluating the issuer of the Hybrid. “Equity-like” features may provide the issuer of the Hybrid with more equity credit. The rating agencies have indicated that such an analysis does not speak to how much “equity” risk an investor takes when purchasing the Hybrid. Although the relationship is not symmetrical, more “equity credit” provided to the issuer generally translates into more investment risk assumed by the holder of the Hybrid.

While the AIAWG recognizes that the NRSRO ratings do not capture all investment risks, we believe that most *observed* investment risks are captured in the current Life RBC formula. The C1 component captures the risk of asset default (called R1 for P&C and H1 for Health, within this document this risk will be referred to as C1 for simplicity) and the C3 component captures the extension risk via the C3 Phase 1 Cash Flow Testing component and the additional C3 Phase 1 charge for callable securities. The P&C and Health RBC formulas do not contain a component corresponding to the Life C3 component.

The AIAWG recommends that the RBC for Hybrids should be based on the same factors used for preferred stock. Furthermore, the AIAWG recommends that the short-term RBC solution involving notching be reversed since illogical results can be produced (e.g., Hybrids that are higher in the capital structure can carry a higher RBC charge than those with lower ratings due to the effect of notching on the NAIC rating basis).

With respect to preferred stock, the AIAWG reviewed the basis for the C1 default factors. The current factors were reviewed and presented to the NAIC's Capital Adequacy Task Force (CADTF) in May 2004. As stated in the report, the Life Capital Adequacy Subcommittee recommended, and the CADTF agreed that the revisions to the rating methodologies used by the NRSROs, the required capital factors for preferred stock (where the C1 charge is based on the NRSRO rating) are sufficient. The AIAWG supports this recommendation on capital charges for preferred stock.

The AIAWG recommendation is based, in part, on a comparative analysis of Hybrid risks versus other types of securities and how investment risks are captured in the NAIC RBC formulas. In addition, the recommendation is based on available empirical data on the risks of Hybrids that have materialized. Although we appreciate and share the concern over the complexity of Hybrids and the potential risks that could materialize, we have not been able to obtain any credible empirical data to support higher capital requirements.

The purpose of RBC is to identify weakly capitalized insurance companies. The RBC formula is primarily factor-based and is a fairly simple instrument used for estimating risks. The current factor-based RBC formula does not capture all investment risks explicitly; perhaps implicitly, on average. Market and event risks, generally accepted as not reflected in the NRSRO rating for Hybrids, are not reflected in the NRSRO rating for *any* security. Therefore, within the current RBC framework, we do not think that Hybrids pose any unique risk due to market changes or event risk. We understand that the Hybrid market continues to evolve with ever more complicated structures being issued. However, many of the risks contained in Hybrids are also present in other securities (e.g., coupon deferrals in private placement bonds, extension risk in CDOs, CMOs, ABS, MBS, ABCP, Auction Market rates, etc.) whose risks may not be fully or explicitly captured in the current RBC formula.

Additional Recommendations:

1. The AIAWG recommends the further study that would involve establishing a process to gather, analyze, and monitor Hybrid experience. Given that there is little historical experience for Hybrids at this time, the group feels it is important to begin a more formal process to gather such experience as it unfolds. Additionally, a process should be established to identify Hybrids in the annual statement to facilitate the monitoring/tracking of Hybrid experience. See Appendix A for recommendations regarding Hybrid experience studies.
2. The AIAWG believes it is appropriate to remind companies of the importance of accurately capturing Hybrid risks and features in the projection of cash flows. Since life companies model Hybrids for asset adequacy and regulatory capital calculations, these

companies must ensure the risks to Hybrids' cash flows are adequately captured. We understand that certain simplifying assumptions are made in modeling these types of securities. As initial guidance, we have provided some discussion in Appendix B with considerations for modeling Hybrids.

II. Methodology

The overall approach of our analysis followed the plan presented to the NAIC Hybrid Working Group in December 2006. Input from interested parties, including insurance companies, trade associations, Nationally Recognized Statistical Rating Organizations (NRSROs) and the Securities Valuation Office (SVO), was gathered to provide a more comprehensive perspective on Hybrids.

Our review focused on risks to the investor, not to the issuer. We started with a blank slate in reviewing Hybrids in order to understand the features and risks of Hybrids. As such, our review focused on a comparative evaluation of Hybrid risks, relative to the risks of other types of securities. The definition of Hybrids, along with the various features and risks, were compared to those found in other securities. While the SVO classification has played a significant role in recent RBC developments with respect to Hybrids, the AIAWG focused on the underlying risks rather than financial statement classification. Also, the review focused on evaluating the risks of Hybrids captured in the current RBC formula, in light of the stated purpose of regulatory capital for insurance companies.

Our review did not encompass a quantitative evaluation or modeling of the risks given the limited statistical experience on Hybrids. Results of any modeling exercise are driven by the inputs, and given the lack of historical data all inputs would be subjective and not supported by any credible statistics.

III. Definition of Hybrids

Hybrids are those securities whose proceeds are accorded some degree of equity treatment to the issuer by one or more of the NRSROs and/or which are recognized as regulatory capital by the issuer's primary regulatory authority. Hybrids are subordinated in the capital structure and are sometimes referred to as capital securities. Examples of Hybrids include preferred securities, surplus notes, preferred stock, trust preferreds, Yankee Tier 1 & 2, and other securities with long term maturities and deep subordination. Securities that do not have a credit component, such as common stock, are not included in this definition.

In discussing this charge with the Hybrid RBC Working Group, the AIAWG indicated it would review surplus notes only from the perspective of the investor, or when an insurer has invested funds in a surplus note issued by another insurer. The AIAWG will not review the credit given in Total Adjusted Capital (TAC) for surplus notes as part of this particular charge. In addition, the AIAWG will not review pure convertible bonds (vs. securities with convertible features) as part of this charge since mandatory convertibles are classified as equity and optional convertibles are classified as debt for RBC purposes.

We gathered some statistics on the size of the Hybrid market as an investment class for insurance companies. Based on 2006 information provided by the New York State Insurance Department and/or the SVO, the following statistics are relevant to putting the risk associated with insurers' investments in Hybrids in perspective:

- For Life companies invested in Hybrids, Hybrids represent approximately 1.8% of total invested assets. For P&C companies, Hybrids represent approximately 0.9% of total invested assets. The impact to Health companies is even less as Hybrids account for only ½% of total Hybrid investments.
- Of the Hybrids held by insurers, Life companies held approximately 90% of all Hybrid investments.
- The data included 414 Life companies. Among Life companies, fourteen companies have more than 10% of assets invested in Hybrids, with the largest percentage at 39%. Twenty four companies have between five and ten percent of assets invested in Hybrids, with the remaining 376 Life companies holding between zero and five percent.
- The data included 380 P&C companies. Among P&C companies, two companies have more than 10% of assets invested in Hybrids, with the largest percentage at 12%. Sixteen companies have between five and ten percent of assets invested in Hybrids, with the remaining 362 holding between zero and five percent.

IV. Features of Hybrids and Comparison to Other Security Classes

Hybrids fall within the capital structure anywhere between common equity and senior debt. Accordingly, the economic risks fall somewhere between common equity and senior debt. For the purpose of setting capital requirements, where a Hybrid security falls on this debt/equity continuum is of crucial importance. Hybrids contain many features that are common to other asset classes. The principal features contained in Hybrids that affect the risk and therefore, the capital requirements, are described below.

- A. Subordination:** Distribution of funds in a bankruptcy depends on where the investor's claim stands in the priority hierarchy. Subordination defines where a particular security falls in the priority hierarchy. Subordinated debt falls behind senior debt in priority, while preferred stock falls behind all debt, but preferred stock is senior in priority to common equity.

Hybrids vary in the degree of subordination in the capital structure depending on how they are structured in relation to other securities offered by the issuer. Hybrids are subordinate to senior debt but ahead of common "class A" equity. Varying degrees of subordination are also found in other asset classes, such as asset backed securities. Many asset backed structures have a priority hierarchy for the investors ranging from senior levels to successive subordinated levels and ending with equity level investors.

The degree of subordination is reflected in the NRSRO rating that is assigned to the Hybrid.

B. Callability: Traditional debt securities can be structured as “straight” debt with guaranteed payment of interest over a fixed term and repayment of principal at a fixed date. Traditional debt can also be structured with an embedded “call” option to the issuer. This feature gives the issuer the right to redeem the bond for a fixed price at fixed call dates. Generally this option allows the issuer to redeem the bond in scenarios where interest rates are lower and refinancing costs may be more favorable. From the perspective of a security holder, callability is generally regarded as an interest rate risk. The callability risk exists as receiving money from redemptions in low interest rate environments is less favorable to the investor since reinvestment opportunities are less favorable.

A wider variation of call and redemption provisions for subordinated securities like Hybrids is observed. Traditional call provisions can exist; however, there may be a requirement to replace the called securities with securities at least as junior in the capital structure. Subordinated debt, for example, would include a requirement that senior debt is paid in full prior to retiring the subordinated debt. Preferred stock calls usually occur at par value, though some are callable at par plus a premium.

Call provisions are found in many Hybrids. For example, some Hybrids have step-up provisions where after the call date, the credit spread increases by 100 basis points or more or becomes a floating rate instrument with a stepped-up spread to LIBOR. For such Hybrids, the call risk is more a function of the issuer’s credit than the overall level of interest rates observed in the market. Newer generation Hybrids may contain replacement language which requires the replacement of called or redeemed securities with capital at least as junior in the capital structure. This replacement language is often used to provide the issuer more equity credit from the rating agencies.

C. Deferral: Deferral characteristics define the issuer’s ability to defer payments of interest or dividends. For senior debt, this ability is extremely limited in that missed coupons trigger a default within a short time frame. Compared to debt, a corporation can raise or lower common equity dividends with few limitations in order to make the interest payments on Hybrids.

Preferred stock and other Hybrids can defer the payment of interest or dividends to the investor. Obligations to make up missed payments may be cumulative or non-cumulative. With cumulative deferral, the issuer is required to pay all missed payments with interest. In newer Hybrid structures, non-cash cumulative features are now in existence, where the risk to the investor lies in between the cumulative and non-cumulative features. Non-cash cumulative instruments are more marketable than non-cumulative, so as Hybrids grow as an asset class, experience may differ.

Newer Hybrid structures contain alternative coupon settlement mechanisms (ACSM). With an ACSM, the issuer can settle missed payments through the issuance of other securities.

Newer structures may contain replacement capital covenants (RCC). These covenants can be intentional or binding. Intentional covenants have been standard in Hybrids for

some time. These covenants allow an issuer to issue alternative forms of capital to make up the Hybrid payments.

Many of the above features, such as the RCCs, ACSMs and non-cumulative deferrals, may be used to provide the issuer of the Hybrid with more “equity credit.” Importantly, such features may not impact the rating assigned by a NRSRO.

Allowable deferral periods can range in length from two or three years up to ten years or more. Deferrals may be contingent on the treatment of other securities issued by the issuer such as the cessation of common dividends before or coincident with the cessation of Hybrid coupons. Additionally, deferrals may be mandatory (based on defined triggers) or optional. Rating agencies may take the deferrals into account in the rating process. For a Hybrid security with a meaningful deferral trigger and a priority of claim above preferred stock, Moody’s will rate the security one or more notches below the subordination based rating.

- D. Maturity:** A wide range of maturity dates can be found across the various Hybrid designs. Yankee Tier 1 and Upper Tier 2 securities are usually perpetual with no stated maturity. Newer generation Hybrids such as trust preferred securities or ECAPS have been issued with maturities in the 60-80 year range. Some Hybrids contain maturity dates, both initial and final maturity dates that can be extended by issuer. Note that some Hybrids, such as those with call provisions followed by coupon step-ups (discussed earlier), have “effective” maturity dates that are much earlier than the stated maturity date.

By comparison, the maturity of common equity is permanent, effectively having an infinite maturity. Perpetual preferred stock has no stated maturity. Senior debt is generally issued with a fixed final maturity from less than one year to thirty years for the vast majority of debt securities. Subordinated debt, in our experience, is generally issued with maturity of ten years or less.

- E. Convertibility:** Convertibility is characterized by the existence of provisions permitting or requiring conversion of debt-like securities into equity. Convertible bonds are Hybrids in that they contain both debt-and-equity-like features. Traditional convertible bonds typically specify a fixed ratio of shares, effectively defining a price at which the holder will convert bonds to shares. However, if such price is not attained, the security remains debt-like. At the other extreme, mandatory convertibles specify a defined exchange into equity at or before a specified conversion date. Convertible preferred stock is exchangeable at the option of the investor and sometimes at the option of the issuer as well. As with other convertibles, the value of this option is tied to the value of the common stock. In general, a higher likelihood and shorter time frame to equity conversion results in greater equity “credit” by the rating agencies.

- F. Features in Newer Hybrids:** Much of the concern with Hybrids arose from features that are becoming common in Hybrids issued in the last couple of years. We have described many of these features above. However, we also note that newer Hybrid structures are

more complex and likely contain more credit risk than earlier issues, which are reflected in the ratings of these securities.

Foreign issuers are becoming more common. Since Hybrids are structured with tax considerations and with consideration of the issuer's capital structure, foreign issues can contain greater extension risk as coupon step-ups are not common in foreign issues. We also note that newer Hybrid structures provide greater protection for the investor. Many investors now demand change of control covenants and other features to mitigate the extension risk (e.g., interest rate step-ups and scheduled maturities).

V. Risks of Hybrids and Comparison to Other Security Classes

The risks associated with investment securities include, but are not limited to, credit, price, liquidity, supply and demand, and regulatory. Many of the risks embedded within Hybrids can be found within bonds, preferred stocks, common stocks, mortgage backed securities (MBS), private placements, and other asset classes. At first glance, some Hybrid risks may appear to be more equity-like than debt-like. However, after further evaluation, one can conclude that some of the equity-like risks may be mitigated by other factors.

Additional information on the various risks is described below.

- A. Credit Risk (Subordination):** Credit risk is the risk that the issuer will default by failing to repay principal and interest in a timely manner. Credit risk for the investor is a function of the likelihood of the issuer defaulting on the obligation (default probability) and the amount of the obligation expected to be recovered (recovery rate).

The credit quality of a security is affected by a variety of qualitative and quantitative factors. For bonds and Hybrid type securities, the rating agencies reflect the degree of credit risk in an issuer's capital structure by "notching". Notching primarily reflects the subordination levels of the liabilities upon bankruptcy. The likelihood of default is generally assumed to be the same across all liabilities of an entity while the expected recovery rate varies by subordination level.

Determining the credit risk associated with asset-backed securities is more involved and depends on many factors such as the type of structure (degree of funding/support), underlying credit of the collateral, credit enhancement method, etc.. Asset-backed securitizations generally have a hierarchy/priority schedule that defines the order of subordination. The hierarchy begins with senior investors (although after fees to the trustee and service/asset manager) and flows down (termed the "waterfall") to successive subordinated investors ending with the equity investors. As with debt and preferred stock, the rating agencies publish rankings according to their default potential.

In the ratings process, the NRSROs evaluate each of the factors affecting the default severity for an individual Hybrid security. The AIAWG believes that the NRSRO rating process adequately captures the risk of default.

B. Call and Early Redemption Risk: Call risk is generally characterized as the risk that the security will be redeemed earlier than expected in a falling interest rate environment. Early redemption risk is similar to call risk in that cash flows may occur earlier than expected and at a time when reinvestment opportunities offer lower yields. Call or early redemption risk is present with Hybrids, corporate bonds, residential mortgages and asset-backed securities. Call risk depends on the level of interest rates, but can also depend on the unique circumstances of the individual issuer.

With many securities, the call feature allows the issuer to redeem the security before the scheduled maturity date. Callable securities often trade in the market at the call date if the call option is in the money (lower interest rate environments) and to a later date if the option is out of the money (higher interest rate environments). Thus, for many securities, the call risk is primarily related to the level of interest rates. The same is true for residential mortgages, for example. As rates fall, mortgage prepayments increase due to refinancing and as rates rise, payments extend.

Some assets, including Hybrids, may contain call provisions where the risk of being called is not closely related to the level of interest rates. Hybrids with step-up coupons after the call date often trade to the call date regardless of the level of rates. In fact, many Hybrids are marketed, and priced, for the redemption of the security at the call date. This redemption is expected, regardless of the level of interest rates. Investors expect that for such Hybrids, “non-economic” calls will happen. (Note that if a Hybrid issuer is in or rapidly heading toward financial distress, the security would likely not be called.)

For comparison, bonds with “make-whole” provisions are also not directly tied to interest rate movements. Bonds with make-whole call features are much less likely to be called as interest rates fall. Commercial mortgages with prepayment and yield maintenance penalties also provide substantial call protection to the investor as rates drop. Consequently, insurers investing in Hybrids are familiar with managing many types of assets whose call features are tied to both economic and non-economic events.

C. Deferral Risk: Preferred stock and other Hybrids may suspend dividends/coupons without triggering a default. The deferral of Hybrid coupons depends on the terms and covenants of the Hybrid. Deferral can be invoked if an issuer’s capital falls below stated minimums, the issuer reports negative earnings for a continued period of time, enters into liquidation, or fails to comply with regulations. This deferral risk is seen mostly in Hybrids and preferred securities and is primarily based on the credit quality of the issuer.

Deferral of Hybrid coupons to date has been highly correlated with the credit quality of the issuer, rather than the specific feature of the security (such as step-ups, etc.). Hybrids issued by regulated companies, such as banks or insurers, may exhibit lower risk of deferring coupons, as the regulators have the ability to step in as company health deteriorates. However, this presumed mitigant with regulated companies is based on the presumption that the regulatory rules that would force deferral are meaningful and action is taken before the issuer’s health has significantly deteriorated.

Based on our review of newer Hybrid structures, the AIAWG believes that the mandatory deferral feature in Hybrids may be the one feature that could create any meaningful risk for investors. Of all the features in Hybrids, the mandatory deferral feature is unique to Hybrids and has not been tested in a volatile credit environment.

The nature of the deferral option in a Hybrid security is considered by the rating agencies in determining the credit notching of a security. The AIAWG believes that the NRSRO ratings process sufficiently captures the deferral risk. Also, if unfavorable experience materializes, we also expect that the NRSROs will modify the ratings process accordingly.

D. Extension Risk: This is the risk that cash flows will extend beyond what was expected in a rising interest rate environment. The delay of the return of principal causes the investor to miss the opportunity to invest proceeds at higher yields.

Some Hybrids contain initial scheduled maturity dates and initial final scheduled maturity dates that can be extended by the issuer, subject to certain conditions. These conditions may include balance sheet and income metrics that reflect potential issuer credit problems. Many Hybrids are now issued with very long maturity dates (e.g., sixty to eighty years). Consequently, the extension provision will have little bearing on the investor's risks. However, as Hybrids age, the materiality of this provision can change and should be monitored over time.

The intention of most Hybrid issuers is to call the security at the call date. The probability of the issuer not calling the Hybrid is extremely low due to the negative market implications for not calling the Hybrid as expected.

There are certain features within Hybrids that affect the level of extension risk. These features and likely impact on extension risk is summarized as follows:

- Replacement capital covenants: increase extension risk
- Coupon step-ups at first or final call date: decrease extension risk
- Switch to a floating rate at call date: decrease extension risk
- Improved credit quality of issuer at call date: decrease extension risk

Ultimately, the likelihood of extension is influenced by the issuer's cost of capital at call date.

Some callable bonds also contain extension risk. In low rate environments, these securities will trade to the earliest call date and in high rate environments, will trade to a later date. This also occurs in other asset classes such as residential mortgages where as market rates rise prepayment speeds fall, thereby extending cash flows.

While we do not believe the extension risk is significant for Hybrids, the extension risk is not captured in the NRSRO process.

- E. Liquidity Risk:** Liquidity risk relates to the ability to trade assets efficiently and without causing major market price fluctuations.

Treasury securities are quite liquid whereas other asset classes such as commercial mortgages, private placements, and some Hybrids may not be as liquid. Most Hybrids are very liquid, especially in favorable economic times. Hybrids are included in market indices such as the Lehman Index, thereby enhancing their liquidity. However, as with other assets, in distress environments, investors may shy away from complex asset structures and/or assets that are subordinate in claim status thereby impacting the liquidity.

- F. Price Volatility:** The volatility of the market price of a security depends on many factors such as the level of interest rates, liquidity, credit quality, and the embedded options. These factors apply to all assets, not just Hybrids. Note that some Hybrids, such as those with coupon step-ups after the call date, may exhibit lower price volatility with respect to interest rate movements than other callable securities or those securities with early redemption risk.

- G. Regulatory /Event Risk:** Event risk is the risk that regulatory changes and other events impact the perceived value of a security. This applies to all assets. Regulatory bodies can change the reporting, valuation, taxation, and other aspects of securities, having a profound effect on the value of securities. However, we do not consider the event risk to be significant for Hybrids and no more significant than for other asset types.

VI. Comparison of NRSRO Risk Assessment and SVO Classification

Essentially, the risk assessment performed by NRSROs and the classification process followed by the SVO satisfy different purposes. Every Hybrid issuance is rated by one or more of the NRSROs and is also classified by the SVO. The purpose of the NRSRO analysis is to estimate the expected default and losses given default while the SVO classifies a Hybrid security for purposes of determining its placement in one of three schedules in the NAIC Annual Statement.

SVO classification is one of “more like”¹; in effect the SVO is applying a specific taxonomy to place Hybrids into one of three existing categories:

- Debt-like risk,
- Preferred Equity-like risk, or
- Common Equity-like risk,

The SVO classification is based on a range of standardized risk metrics, and economic and legal portraits. The SVO classification is not based upon estimating ultimate loss costs and grouping securities by expected loss costs.

¹ Report on Transparency of the NAIC Securities Valuation Office, memorandum to Alfred W. Gross, Chair and Members of the NAIC Financial Condition (E) Committee, dated November 30, 2006.

NRSRO risk assessment is based, in part, on estimating ultimate loss costs and grouping securities by expected loss costs. In effect, the NRSROs are seeking to “underwrite” (classify) an individual financial security for its appropriate risk. As such, a \$100 million pool of Hybrids initially rated single “A” should have similar ultimate loss costs to that of a \$100 million pool of corporate bonds initially rated single “A”.

A. SVO Perspective:

Based on discussions with the SVO and review of published documents, the SVO’s purpose is contained in the SVO’s Purposes and Procedures Manual. As stated in the manual:

“Under financial reporting practices adopted by the NAIC and used by all of the states, investment securities must be reported in statutory financial statements as debt, preferred stock or common equity. In furtherance of this financial reporting objective, the provisions of the SVO Purposes and Procedures Manual (“P&P Manual”), provide that Hybrids should be analyzed in accordance with what are referred to as the “debt/equity guidelines” set forth in the P&P Manual and “classified” as more like debt, preferred stock or common equity”.²

The SVO has stated some unique concerns with Hybrids. In particular, the SVO has stated that “Default studies ignore equity risks associated with deeply subordinated instruments.”³ Furthermore, “Hybrids are intended to prevent default to senior holders and hence to be drawn down first. Deferrals are not considered to be a default by the NRSRO’s.”

B. NRSRO Perspective:

Based on discussions with rating agencies and review of their published documents, the NRSROs have made numerous statements about the risks of Hybrids and their risks compared to other securities. Among the more salient comments:

- “Preferred stock carries greater credit risk than debt in two important ways: the dividend is at the discretion of the issuer and the preferred represents a subordinated claim in the event of bankruptcy. Accordingly, preferred is generally rated below subordinated debt.”⁴
- “Hybrids combine debt and equity characteristics. They are structured as subordinated bonds with equity features, such as perpetual or long-dated maturities, or an absence of obligatory fixed period payments.”⁵
- “Crucially, like equity, Hybrids are loss absorbing.”⁶

² Ibid.

³ Classification of Securities, The NAIC Analytical Model Applied to Hybrids, (A presentation to the American Academy of Actuaries by the Securities Valuation Office of the NAIC. March 7, 2007).

⁴ S&P 2002 Corporate Ratings Criteria.

⁵ Guide to Hybrids – Part 2: Corporate Hybrids, 18 Jul 2006 – in association with Fitch Ratings.

- “With the agencies recognizing the equity characteristics of corporate Hybrids and attributing equity credit to such securities, Hybrids were decisively differentiated from conventional debt.”⁷
- “The agencies’ methodologies seek to account for the mix of variables that define each individual Hybrid including maturity, deferability of payments and seniority. As a consequence and despite the market’s attempts at standardization, each individual Hybrid will have specific and possibly unique characteristics, requiring careful consideration both by the agencies and by investors.”⁸
- “For issuers with senior unsecured ratings or corporate family ratings, if applicable, at Ba2 or higher, Moody’s notching guidelines will continue to suggest that senior subordinated, subordinated and junior subordinated debt be rated one notch below senior unsecured debt; and preferred stock be rated two notches below senior unsecured debt.”⁹
- “For most issuers with corporate family ratings, notching for subordination is determined by Moody’s LGD [Loss Given Default] methodology...”¹⁰
- The NRSROs evaluate credit risk at the overall issuer level, and apply a “notching” methodology for subordinated securities of the corporate entity. This reflects their assumption that the probability of default is generally the same across all securities of an issuer while the expected recovery rates vary by subordination level.

The SVO has a significantly different task than that of the NRSROs, and given the specific framework for classification that the SVO must follow, we do not believe that the SVO classifications are intended to classify Hybrids relative to expected loss costs.

VII. Methods for Calculating Required Capital

In recommending an appropriate method for calculating required capital, we considered the following methodologies:

- Factor-Based: (current methodology for fixed income / unadjusted equity charges in the NAIC RBC model)
- Factor-Based with adjustment for company experience (current methodology for mortgages)
- Principles-Based Approach (current methodology for certain types of C-3 risk)

Required capital for insurers is intended to identify weakly capitalized companies. The current factor-based RBC formula does not capture all investment risks explicitly. At best, the formula

⁶ Ibid.

⁷ Ibid.

⁸ Ibid.

⁹ “Moody’s Set to Issue Revised Guidelines for Hybrids”, Press Release, New York, February 06, 2007.

¹⁰ Ibid.

implicitly captures the more significant investment risks, on average. Market and event risks, generally accepted as not reflected in the NRSRO rating for Hybrids, are not reflected in the NRSRO rating for *any* security. Therefore, within the current RBC framework, we do not think that Hybrids pose any material unique risk due to market changes or event risk.

We considered the merits of applying a “principles-based approach” (PBA) in the calculation of required capital for Hybrids. Similar to the PBA used in calculating the C3 charge, a company would model its asset holdings and capture the unique risk profile of all securities in its portfolios. While we conceptually support the application of PBA for determining capital requirements, we recognize that introducing PBA to the determination of capital charges for assets would be a significant paradigm shift in the current NAIC RBC framework. Also, note that our support for a PBA would only be meaningful if applied to the entire asset portfolio in order to capture the diversification benefit of all securities in the portfolio.

There are many practical issues associated with implementing a PBA. Some of these issues include the lack of historical experience and a company’s ability to project future cash flows on Hybrids and all other assets. In addition, implementing a PBA for determining required capital for market risks would involve significant effort by the company and regulators.

Based on our extensive review of Hybrids and the risks posed to investors, the AIAWG is recommending that the capital requirements for Hybrids revert to the capital treatment prescribed prior to year end 2006, when the short-term solution was adopted. For the C1 capital charge, the AIAWG believes that the current RBC factors for preferred stock are sufficient for Hybrids. The preferred stock C1 factors are based on the NRSRO rating and adequately capture the default and recovery costs for Hybrids.

For Life companies with investments in Hybrids, the C3 capital calculation will capture the interest related extension and call risks. If a company assumes Hybrids are part of the asset portfolio backing the tested liabilities, then the C3 capital charge will reflect the extension risks of Hybrids. If a company does not include Hybrids in the asset portfolio backing the tested liabilities, then the extension risk is partially captured in the C3 Phase 1 charge for callable securities.

The AIAWG recognizes that the C3 charge only exists within the Life RBC formula. As such, the required capital for a Hybrid held by a Life company will be greater than a Hybrid security held by a P&C or Health company. While this inconsistency is troublesome, we believe the additional capital requirement for Life companies will not create any disruption in the investment in Hybrids. Given that the vast majority of Hybrid securities are held by Life companies (more than 90%), we do not recommend adding the C3 component to either the P&C or Health formulas.

APPENDIX A

Proposed Process to Gather, Analyze, and Monitor Hybrid Experience

To better understand how the unique characteristics of Hybrids impact their financial performance, an experience study would be of great value. However, at this time, a comprehensive study of Hybrid experience is not readily available. The dearth of Hybrid experience studies is due to the relative newness of the Hybrid market; additionally, we note that as the Hybrid market has been evolving rapidly, new Hybrid features would not be captured in an experience study of older Hybrids.

In designing an experience study, it is necessary to identify key Hybrid features to see how they impact default and recovery rates. Given that a default at a holding company normally occurs across all obligations of an issuer, recovery rates for Hybrids are most likely to be affected in the event of a default.

In designing a study, it would be helpful to monitor:

- Losses on Hybrids as compared to other classes of corporate debt for a given issuer.
- Losses on Hybrids as compared to other similarly rated corporate debt across all issuers.
- The pricing volatility of Hybrids as compared to other debt instruments of the same issuer.

To gain more information from the study, Hybrids can be further separated into separate classes based on various features. Below we identify certain Hybrid features. This is not an exhaustive list, but a starting point for the design of a study to better understand Hybrids.

- Meaningful mandatory deferral trigger/optional deferral/no deferral
- Underlying instrument – preferred/subordinated debt/senior debt.
- Callability
- Maturity
- Cumulative versus non-cumulative deferral versus ACSM

Some questions that could also be addressed in a study include the following:

- Do Hybrids get called at their call date? Does it make a difference whether or not there is a step-up?
- If there is intent-based replacement language, does the issuer replace the security with the same or more equity-like security at the call date?
- What is the issuer's behavior with a replacement capital covenant?
- What are the circumstances under which an issuer elects to defer (i.e., under an optional deferral provision)? How are the deferred payments settled (cum, non-cum, alternative coupon settlement mechanism settlement).
- When the triggers are breached, do the payments get deferred? If so, how are the payments settled?
- In bankruptcy, are claims treated as they are designed to be treated?

APPENDIX B

Modeling Hybrids in Asset Adequacy Analysis and C-3 RBC

The determination of reserve adequacy and C-3 capital requirements often requires projecting cash flows, market values, and book values of assets. Asset classes include, but are not limited to, corporate bonds, municipal bonds, commercial mortgages, CMOs, ABSs, Hybrids, preferred stock, and common stock. The cash flows and market values of assets are impacted by market rates, options embedded in the assets, the business environment, and many other factors. Statutory balance sheet values are less subject to variability from these factors and perhaps more impacted by the credit rating of the assets.

In modeling the above amounts, the actuary needs to be aware of various risks embedded in the assets such as credit risk, early redemption risk, extension risk, liquidity risk, prepayment risk, and other risks. The following discusses how the actuary might address these risks for Hybrids versus other asset classes.

Credit Risk

When modeling reserve adequacy and C-3 capital requirements, the actuary needs to reflect credit (default) risk in environments ranging from healthy/growing environments up to and including moderately adverse environments. Credit risk in distress environments need not be addressed as it is reflected in C-1 capital requirements.

Modeling of credit risk varies. Some actuaries model credit risk on a stochastic basis. Most do not. In any event, credit risk is most likely based on default rates which vary by credit quality. Credit quality is often based on NRSRO or NAIC rating. Hybrids are rated to reflect their underlying credit characteristics, as are other asset classes, and should be treated in a similar manner by the actuary.

Call Risk/Early Redemption Risk

Many securities, including Hybrids, are callable. The call feature allows the issuer to redeem the security before the scheduled maturity date. Call risk is generally characterized as the risk that the security will be redeemed earlier than expected by the issuer in a falling interest rate environment. Early redemption risk is similar to call risk in that cash flows may occur earlier than expected. This can occur with residential mortgages and various asset-backed securities when interest rates fall and cash flows (pre-payments) occur earlier than expected.

Callable securities trade in the market to the call date if the call option is in the money and to a later date if the option is out of the money. Thus when modeling callable securities or securities that can be prepaid, the actuary generally needs to determine when it is economically advantageous for the issuer to call the security (lower rate environments) and when it is advantageous to assume a later date (higher rate environments). As rates fall, the model should reflect an increase in mortgage prepayments due to refinancing. As rates rise, payments would be projected to extend.

Many callable Hybrids have punitive or step-up provisions after the call date where the credit spread increases by 100 basis points or more. For such assets, the market expects, and prices for,

redemption at the call date. To be conservative, redemption at the step-up date should be reflected in the modeling of the cash flows. Note that for such assets, the call risk is more related to the issuer's credit risk than the level of market rates. (Actuaries who dynamically model credit risk might deviate from this assumption in distress credit environments and assume that the asset is not called.)

For Hybrids that do not have punitive provisions after the call date, the actuary may or may not treat these assets similarly to the treatment of callable bonds, residential mortgages, and other asset classes where the timing of cash flows is largely dependent on the level of market rates. The modeling of Hybrid cash flows will depend on whether or not the actuary believes callability is a function of interest rate levels. It is not uncommon to model some callable assets as not being called as rates decline. Bonds with make-whole call provisions are much less likely to be called if the cost to the issuer is significant, as is often the case. The modeling of the call risk may vary by security and be based on such things as historical experience, market expectations, and the particular provisions embedded within a security.

Note that the modeled statutory balance sheet values of these assets may assume different dates for cash flows. For example, the statutory balance sheet values for Hybrids and bonds amortize any initial premium or discount to the "worst" date. In other words, premiums are amortized to the earliest call date and discounts are amortized to the scheduled maturity date.

Extension Risk

Extension risk is the risk that cash flows will extend beyond what was expected in a rising interest rate environment. The delay of the return of principal causes the investor to miss the opportunity to invest proceeds at higher yields.

Callable bonds have extension risk. Bonds may initially be modeled to trade to the earliest call date but later modeled to trade to a later date due to a rise in market rates. Similar modeling could apply to other asset classes, such as residential mortgages where as market rates rise, prepayment speeds are assumed to fall, thereby extending cash flows.

Callable Hybrids without step-up provisions may be modeled similar to callable bonds. As rates rise, Hybrids which were trading to a call date may be assumed to trade to a later date, thereby extending the cash flows. Note that this extension may not be true for all such Hybrids. Many Hybrid issuers intend to call the security at the call date, regardless of the level of interest rates, and the market price would reflect this. The actuary may or may not consider this in the modeling.

As indicated earlier, for Hybrids with punitive step-up rates an extension would likely occur due to specific issuer credit reasons rather than the general level of interest rates.

Extension risk can also occur if a Hybrid is expected to be called but is not and cash flows are extended in a down/falling rate environment. As indicated earlier, for Hybrids with punitive step-up rates the extension would likely occur due to specific issuer credit reasons rather than the general level of interest rates. For Hybrids without step-ups, the actuary may assume that redemption is a function of the level of interest rates and occurs when it is economically advantageous.

Some Hybrids contain initial scheduled maturity dates and initial final scheduled maturity dates that can be extended by the issuer, sometimes subject to certain conditions. These conditions may include balance sheet and income statement financial metrics that reflect potential issuer credit problems. An actuary modeling credit on a stochastic or migration basis may want to reflect the extension option being invoked in certain credit scenarios. For extension options that do not contain such conditions, the actuary may want to model the extension based on when it appears economically advantageous for the issuer. Note that most Hybrids have maturity dates that are generally quite far out in the model projection period and variation in cash flows at such points in time may not materially impact on the results.

Liquidity Risk

Liquidity risk relates to the ability to trade assets efficiently and without causing major changes in their market prices.

Actuaries may model less liquid assets as not being available for sale when projecting cash flows. Examples include assets such as commercial mortgages, private placements, and some Hybrids. Determination of such assets would be up to the actuary, presumably after discussions with investment experts. Most Hybrids are very liquid, especially in favorable economic times. Hybrids are included in market indices such as the Lehman Index and this enhances their liquidity. However, as with other assets, in distress environments investors may shy away from complex asset structures and/or assets that are subordinate in claim status thereby impacting the liquidity.

Coupon Deferral

Many Hybrids contain an option for the issuer to defer coupon payments for up to 5 or even 10 years without triggering default. The coupons may or may not be cumulative and alternative coupon payments may or may not be applicable. Some Hybrids have certain requirements that must be met before coupons are deferred. These include meeting various balance sheet/income statement financial metrics as well as conditions that affect other securities of the issuer such as common stock dividends (often called stoppers and pushers).

For Hybrids that are currently deferring coupons, the actuary should gather more information about the securities in order to determine how they should be incorporated in the modeling. Experience to date has shown that deferral of coupons is rare and highly correlated with default. Such assets are likely to be below investment grade and much of the risk is default based.

Since deferral of coupons is highly correlated with default, it is unlikely that actuaries are modeling deferrals unless they are also modeling dynamic credit risk.

Price Volatility

Modeled volatility of asset prices, including Hybrids, depends on the sophistication of the model. Asset prices vary by many factors, including factors that are generally outside of an actuary's model such as accounting and tax law changes, and supply and demand.

Hybrid price volatility should be modeled in a manner consistent with the underlying security provisions. Note that some Hybrids, such as those with coupon step-ups after the call date, may

exhibit lower price volatility with respect to interest rate movements than other callable securities or those with early redemption risk.

Regulatory Risk/Event Risk

This is the risk that regulatory changes, mergers, etc. impact the future cash flows of the various asset classes. This risk is presumably captured in the C4 capital and therefore, not included directly in the C3 and asset adequacy models.