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NEUBERGER BERMAN

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Corporate Hybrid Bonds for Insurance Investors

To overcome the low-yield problem, European insurers are eager to identify assets that offer the right balance between quality and return. The corporate hybrid bond market—subordinated investment-grade bonds issued by high-quality industrial and utility companies—is such an asset class. Of late, this subsector of the credit market has gained meaningful momentum and has attracted attention from quality-sensitive insurance investors worldwide. In our conversations with insurance investors, however, we often find that there are misconceptions about this asset class. The most common misconceptions concern (1) differences between corporate hybrid bonds and other assets, (2) Solvency II Solvency Capital Requirement (SCR) Level and (3) tail-risk severity. This paper addresses each of these questions. It then moves onto a Corporate Hybrid Bond "buy-and-maintain" portfolio case study and its applications for insurance companies.

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Introduction to corporate hybrids: features, history and market trends

Corporate hybrid bonds, unlike traditional investment grade bonds:

- Are *subordinate* to senior bonds in the issuer's capital structure
- Have coupon payments that are potentially *deferrable* at the option of management
- Are long-dated or perpetual but *callable* at the option of management—typically 5–7 years from issuance.

If left outstanding beyond this initial period, the coupon will be contractually ramped up, and the issue loses the favorable rating agency treatment that was typically the key reason for issuing the instruments in the first place.

FIGURE 1: EXAMPLES OF STRUCTURES – CORPORATE HYBRID BONDS

ISIN and Description	XS1797138960 IBESM 2–5/8 Perp Corp	DE000A2GSFF1 EVKGR 2–1/8 07/07/77 Corp
Currency	Euro	Euro
Moody's Rating of the Bond	Baa3	Baa3
Moody's Rating of the Issuer	Baa1 (Iberdrola Intl BV)	Baa1 (Evonik Industries AG)
Issue Date	03/26/2018	07/07/2017
Maturity	Perpetual	07/07/2017
Coupon	2.625% Annual, Act/Act	2.125% Annual, Act/Act
Call Schedule	1st Call Date March 26, 2024; and callable annually thereafter until March 26, 2168	First Call Date August 7, 2022 and callable daily thereafter until November 7, 2022; and callable annually thereafter until November 7, 2076
Call Price	100	100
Coupon Ramp-Up Scheme	EURIBOR ICE SWAP + 2.06% after March 26, 2024 EURIBOR ICE SWAP + 2.31% after March 26, 2029 EURIBOR ICE SWAP + 3.06% after March 26, 2044	EURIBOR ICE SWAP + 1.95% after March 26, 2024 EURIBOR ICE SWAP + 2.20% after March 26, 2029 EURIBOR ICE SWAP + 2.95% after March 26, 2044

Source: Bloomberg.

This asset class has enjoyed considerable growth since 2012–13, helped by the "standardization" of bond terms. In earlier years, the corporate hybrid bond market was insignificant in size, and bonds employed a variety of less investor-friendly structures. The rationale for an increasing number of non-financial companies issuing these bonds is multifold: to reduce their Weighted Average Cost of Capital (WACC) while improving their rating agency position;[1] avoid ownership dilution when financing for capex and/or M&A (especially if valuation is depressed); and to maintain balance sheet flexibility.

Comparison with some other asset classes

Corporate hybrid bonds benefit from an analytical equity component under the rating agencies' assessment of credit quality. Under Solvency II, these bonds incur only spread and interest rate SCR. Investors tend to either manage them together within the wider investment grade index, or allocate to a sleeve within a larger multisector credit mandate. Separately managed mandates are generally not yet well known to European insurance investors.

	Corporate hybrids	Contingent convertibles ("CoCos")	Convertible bonds
Issuer	Non-financial issuers	Banks	Non-financial issuers
Included in major fixed income indices?	Yes	No	No
Can be converted to equity?	No	Yes	Yes
Has SCR equity risk?	No	Yes	Yes
Coupon deferrable?	Yes	Yes	No

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Solvency Capital Requirement (SCR) Under the Solvency II Standard Formula

SCR spread risk is the dominant SCR component for corporate hybrids and often the only SCR component that is of interest to insurance investors.[2] The SCR spread risk for all credit bonds is calculated using a regulatory-defined table of bond duration vs. credit rating.[3] The longer the duration, and the lower the rating, the higher the SCR.

The *rating* of a corporate hybrid bond is usually two to three notches lower than the rating of the issuer's corresponding senior investment grade bonds. For example, if a company—and its senior bonds—is rated A-, then corporate hybrids are expected to be rated BBB/BBB-. Still, most of the corporate hybrid universe falls within the investment grade bucket.[4]

The *duration* of a corporate hybrid bond is a more complicated matter. We have seen abundant real-life examples where insurers apply first call date-based spread duration in calculating the SCR of corporate hybrids. Because of the complexity of corporate hybrid bonds (susceptible to extension risk and subordination risk), the duration data that are available from large data vendors are usually calibrated using market information and thus take into account the likelihood of them not being called. Since these bonds are almost always called on their first call date, their durations end up close to that date.

There are still some disagreements in the industry as to duration calculation. European Insurance and Occupational Pensions Authority (EIOPA) Guidelines[5] say, "When determining the duration of bonds and loans with call options, undertakings should take into account that they may not be called by the borrower in the event that its creditworthiness deteriorates, credit spreads widen or interest rates increase."

We believe that, in the spirit of Solvency II being a principle-based, realistic regime, and observing that the first call date is close to the actual end of life of these bonds, companies should feel justified in using the first call date to calculate the SCR.

SCR interest rate risk is low for corporate hybrids, because of their longer-term floating rate nature. Corporate hybrids tend to reset to a fixed rate based on five-year swaps at the first call date and to a floating rate based on three-month Libor from the second call date. Their cash flows are effectively floating after the initial (approximately five-year) period after issuance, and thus the portfolio interest rate SCR is small (1 – 2% standalone typically) and not really affected by whether calls are taken into account or not.

Figure 2 shows that the yield-on-SCR of corporate hybrid bonds beats that of senior investment grade and high yield bonds by a comfortable margin. Figure 3 shows that at the whole index level, the same yield pickup phenomenon holds.

FIGURE 2: RETURN-ON-SCR OF SAMPLE CORPORATE HYBRIDS VS. NORMAL IG AND HY BONDS

ISIN and Description	XS1797138960 IBESM 2 – 5/8 Perp Corp	DE000A2GSFF1 EVKGR 2 – 1/8 07/07/77 Corp	A hypothetical 4y duration A bond[6]	A hypothetical 4y duration BBB bond[7]	A hypothetical 4y BB HY bond[8]
Duration[9]	4.435	3.194	4.0	4.0	4.0
Credit Quality Step (CQS)[10]	3	3	2	3	4
Spread SCR[11]	11.1%	8.0%	5.6%	10.0%	18.0%
Yield[12]	0.95%	0.79%	0.01%	0.47%	1.11%
Yield-on-SCR	8.6%	9.9%	0.0%	4.7%	6.2%

Source: Bloomberg. Data as of January 9, 2020.

FIGURE 3: CURRENT CORPORATE HYBRID YIELDS VS. OTHER OPPORTUNITIES IN EUROPEAN CREDIT

Index Name	Yield-to-Worst	Duration	Average Rating	Market Value (USD billion)
Global Corp. Hybrid Universe	1.71%	3.8yrs	BBB-	198
ICE BofA Euro Corporate Index	0.48%	5.2yrs	A-	2,946
Bloomberg Barclays Euro Credit 10yr + Index	1.09%	12.0yrs	A-/BBB+	235
ICE BofA Euro High Yield BB Index	1.75%	3.5yrs	BB	241

Source: Bloomberg. Data as of January 8, 2020.

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Admittedly, the corporate hybrid bond universe is still a relatively concentrated and less liquid space compared to the broader investment grade credit universe. However, the illiquidity premium is usually a sweet spot for insurers who are patient enough, due to their illiquid liabilities and countercyclical investor nature; also, the concentration level of a buy-and-maintain corporate hybrid bond portfolio will generally be tolerable and not lead to a meaningful concentration SCR charge. Furthermore, the corporate hybrid bond market, at close to $200 billion, is already comparable in size to the European high yield BB segment on a standalone basis, and is significantly more liquid by various measures.

Resilience of corporate hybrid bonds during periods of stress

Corporate hybrid bonds are higher beta and noticeably more volatile compared to traditional investment grade bonds. Nonetheless, with most issuers (such as large, northern European utilities and telecommunication companies) having highly defensive characteristics, and given the strong mitigating qualities that prevent issuers from either extending the duration beyond the first call date or exercising the coupon deferral mechanism, we believe most corporate hybrids will prove highly resilient, even during crises.

In fact, crises may offer attractive opportunities to invest in corporate hybrids issued by high-quality investment grade companies. Volkswagen's involvement in the "Dieselgate" scandal is one such example. In September 2015, when the news broke that Volkswagen had been gaming global emission testing regulation, its hybrid bond spreads widened by over 300 basis points. The market panic was subsequently spurred by media speculation that the company would face fines in the €50–70 billion range in the U.S. alone. As a result, investors were selling first and doing the fundamental work later. After a period of extreme volatility, the market gradually started to realize that Volkswagen's strong underlying credit fundamentals ensured that the company would remain highly incentivized and able to call its hybrids at their first call date—despite the fact that the company's wrongdoing eventually ended up costing the group around €25–30 billion.

On other occasions, crises might also lead to companies issuing hybrid bonds to defend their credit ratings. For instance, BHP Billiton, one of the largest and most profitable global mining companies, decided to pursue a large multitranche and multicurrency corporate hybrid issuance in late 2015, at a time when metal commodity prices were collapsing on fears of a severe downturn in China, the largest buyer of metals. At that time, rating agencies had BHP either on negative outlook or under negative credit watch. Since BHP issued its corporate hybrids to strengthen its capital structure, it managed to defend its single-A senior unsecured rating status, and has seen its operational and financial performance improve year after year. BHP's corporate hybrids' performance has also been progressing very well, and today the company has an even stronger balance sheet and liquidity position to face the next potential commodities downturn with, in our view, comfortable financial headroom.

Notably, we believe that extension risk is limited for most corporate hybrid bonds as they have been structured to lose their favorable treatment—the 50% equity content—by Standard & Poor's at the first call date. Hence, the economic rationale remains in favor of calling S&P-rated corporate hybrid bonds as long as the issuer's senior spread does not exceed the corporate hybrid reset spread. To be clear, corporate hybrid bonds reset at the first call date based on swap rates plus the initial hybrid margin. Similarly, the level at which a company issues senior debt depends on the underlying swap rate plus senior the senior spread. Thus, given that a hybrid issue would no longer benefit from the 50% equity content by S&P after the first call date, the relative cost of keeping the hybrid outstanding is directly correlated to the overall level of corporate spreads; and the greater the rise in corporate spreads, the greater the probability of extension risk in the hybrid security.

For example, consider the U.K. electricity transmission operator National Grid, which as a result of an exceptionally strong business risk profile is able to access the 10-year senior bond-market at swaps+30 bps. In contrast, its corporate hybrid with a first call date in 2025 has a reset of 348 bps. As such, investors are exposing themselves to the risk that National Grid will experience a deterioration in its credit rating from single-A to well into high-yield territory, and, as a consequence, that its senior cost of debt will rise in excess of the reset at 348 bps. Only under such circumstances, from a purely economic point of view, would the company consider extending the duration of its hybrid beyond the first call date. In practice, however, such an outcome is highly unlikely to occur. Notably, the company has maintained a low-A rating since 2006, when it was downgraded from mid-A. Furthermore, considered in the context of the asset class on average, the margin of safety should be regarded as material. The average reset stands at 353 bps, which means that, on average, senior investment-grade debt would need to widen in excess of this level for the average issuer to consider extending its hybrid bond. Such severe widening was not observed during the 2008–09 global financial crisis nor during the 2011–12 euro zone crisis for the majority of the issuers in the corporate hybrid investment universe.

Furthermore, the bond documentation outlines that an issuer's option to defer the coupon is only possible if shareholder remuneration is suspended. In any case, deferred coupons would remain due on a cumulative basis—usually with interest-on-interest also due—which would keep credit metrics broadly unchanged, while only making a small temporary cash saving (typically a company's hybrid coupon account for greater than 4% of group cash generation). *Therefore, suspending the coupons would only make sense in the event of a severe liquidity-stress—which undoubtedly should be considered unlikely for large investment-grade institutions.*

It is worth noting that insurance regulatory capital requirements are designed to buffer against "1-in-200 years" scenarios. We would not expect severe situations such as the 2008 crisis to repeat themselves every decade; and in any lesser situations that we anticipate, corporate hybrid bonds are unlikely to experience deferrals on a noticeable scale. So, the real risk presented to investors is still the idiosyncratic risk at an individual issuer level—the same as for plain vanilla senior investment grade credit. In a sense, investors in corporate hybrid bonds earn an "unexpected default risk premium" due to the inflated fear of market downside risk, much the same way as equity put writers earn a skewed protection premium. We would expect corporate hybrids to fare better in an economic-value-driven strategic asset allocation than in a regulatory-capital-based analysis.[13]

Case Study: Buy-and-maintain corporate hybrids model portfolio

Insurers tend to favor buy-and-maintain investing for their core fixed income holdings, which offers significant advantages to strategies of a smaller total market capacity, such as corporate hybrids. Here we set up a model portfolio with certain characteristics that shows that, although the space is concentrated, if managed in the right manner, it does offer a highly compelling opportunity for insurance investors, either as a separate mandate or as a sleeve in a larger multisector credit mandate.

We would perceive such a portfolio as suitable for backing a non-life insurance or a reinsurance book, or used as a yield enhancement bucket for backing a longer-dated life insurance book. When setting up a tailored portfolio, a large-ticket (re)insurer could avoid issuers that present overlapping credit risk exposure to their liability side; while for a household non-life insurer, there will be more diversification benefit because many of the issuers are defensive in nature.

INVESTMENT GRADE BUY-AND-MAINTAIN MODEL PORTFOLIO

The Global Investment Grade Credit team at Neuberger Berman has created a buy-and-maintain model portfolio with the following characteristics:

Portfolio size (EUR m)	500	**Option adjusted spread**	184bps
Duration (years)	3.51	**Average % of amount outstanding bought**	2.0%
Average rating	BBB/BBB-	**No. of bonds**	40
Yield (€)	1.60%	**No. of issuers**	24
Yield ($)	3.80%		

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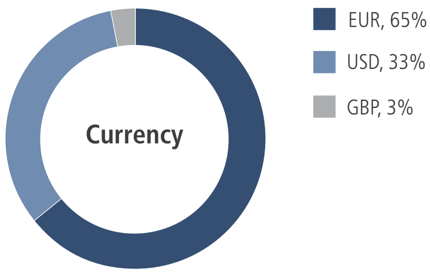
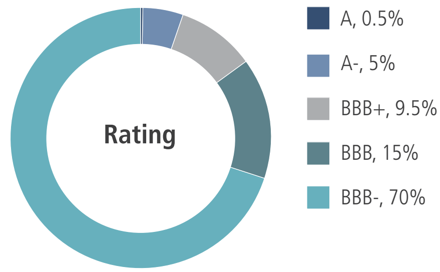
FIGURE 4: MODEL PORTFOLIO CHARACTERISTICS





Country	
Germany	25.5%
Australia	3.0%
U.K.	13.5%
France	17.5%
Belgium	5.0%
Canada	8.5%
Italy	5.0%
U.S.	7.5%
Spain	5.0%
Denmark	4.5%
Sweden	5.0%

Sector	
Basic Materials	3.0%
Communications	7.0%
Consumer, Cyclical	10.0%
Consumer, Non-Cyclical	13.0%
Diversified	3.5%
Energy	13.0%
Real Estate	0.0%
Utilities	39.0%

As can be seen, this is an extremely high-quality portfolio comprised of solely investment-grade-rated corporate hybrid bonds issued in the three most liquid currencies. The duration-to-call is 3.51 years and the yield-to-call in both euros and USD is highly attractive.

The bonds were chosen for their quality and in particular were screened with regard to our confidence that they would be called on the first call date. Assessing the call probability for each corporate hybrid issue is a key difference when compared with running a typical buy-and-maintain portfolio containing only senior issues. In assessing call probability, we strongly favor bonds that lose their equity content from S&P at the first call date over those that do not. We also look carefully at the coupon reset and consider under what circumstances it would be in the issuer's favor not to call. We stress-test this, looking back at periods including the global financial crisis and the European sovereign crisis and make sure that we are comfortable that even in very challenging circumstances, the call probability is extremely high.

Where we have implemented solutions such as this for insurance companies, it is typically either part of their investment grade credit allocation or an alternative to their high yield or emerging market allocations.

It should also be noted that we have also facilitated a fully cross-currency swapped buy-and-maintain mandate such that the investor has certainty of cash flows over the life of the portfolio.

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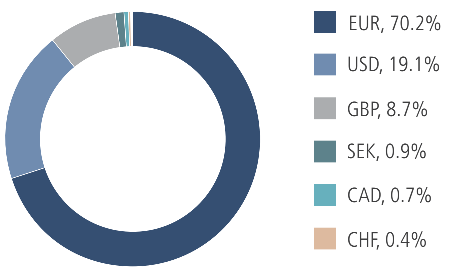
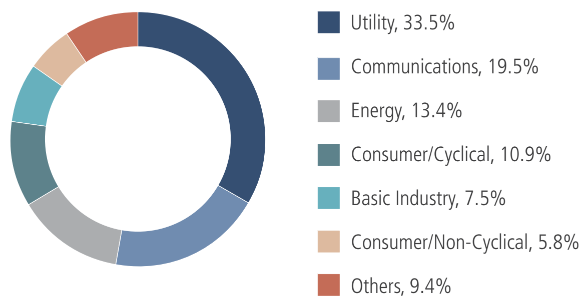
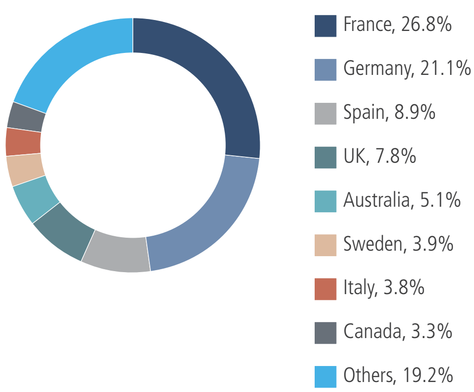
Appendix 1: Rated Credit Bonds' SCR[14]

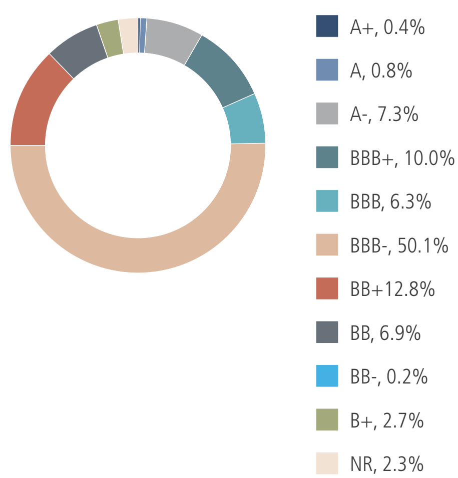
Credit Quality	Step	0		1		2		3		4		5 and 6	
Duration /Yrs	SCR Spread formula	a	b	a	b	a	b	a	b	a	b	a	b
(0, 5]	b x duration	–	0.9%	–	1.1%	–	1.4%	–	2.5%	–	4.5%	–	7.5%
(5, 10]	a + b x (duration – 5)	4.5%	0.5%	5.5%	0.6%	7.0%	0.7%	12.5%	1.5%	22.5%	2.5%	37.5%	4.2%
(10, 15]	a + b x (duration – 10)	7.0%	0.5%	8.5%	0.5%	10.5%	0.5%	20.0%	1.0%	35.0%	1.8%	58.5%	0.5%
(15, 20]	a + b x (duration – 15)	9.5%	0.5%	11%	0.5%	13.0%	0.5%	25.0%	1.0%	44.0%	0.5%	61.0%	0.5%
[20,)	Min (a + b x (duration – 20), 1)	12.0%	0.5%	13.5%	0.5%	15.5%	0.5%	30.0%	0.5%	46.6%	0.5%	63.5%	0.5%

Appendix 2: Breakdown of the Corporate Hybrids Universe by Currency, Rating, Sector and Country[15]









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RISK CONSIDERATIONS

Market Risk: The risk of a change in the value of a position as a result of underlying market factors, including among other things, the overall performance of companies and the market perception of the global economy.

Liquidity Risk: The risk that the Strategy may be unable to sell an investment readily at its fair market value. In extreme market conditions this can affect the Strategy's ability to meet redemption requests upon demand.

Credit Risk: The risk that bond issuers may fail to meet their interest repayments, or repay debt, resulting in temporary or permanent losses to the Strategy.

Interest Rate Risk: The risk of interest rate movements affecting the value of fixed-rate bonds.

Concentration Risk: The strategy's investments may be concentrated in a small number of investments and its performance may therefore be more variable than the performance of a more diversified strategy.

Counterparty Risk: The risk that a counterparty will not fulfil its payment obligation for a trade, contract or other transaction on the due date.

Operational Risk: The risk of direct or indirect loss resulting from inadequate or failed processes, people and systems, including those relating to the safekeeping of assets or from external events.

Derivatives Risk: The Strategy is permitted to use certain types of financial derivative instruments (including certain complex instruments). This may increase the Strategy's leverage significantly which may cause large variations in the value of your share.

Currency Risk: Investors who subscribe in a currency other than the base currency of the Strategy are exposed to currency risk. Fluctuations in exchange rates may affect the return on investment.

[1]Corporate hybrids typically count for half equity credit in a rating agency valuation structure, while being cheaper to issue than common equity from an investor-required-return perspective.
[2]Because the interest rate risk component can be hedged away by liabilities and/or interest rate derivatives at a balance sheet level.
[3]EU 2015/35 or EU 2016/467.
[4]See Appendix for breakdown of corporate-hybrid universe by currency, rating, sector and country.
[5]EIOPA guidelines on the treatment of market and counterparty risk exposures in the Standard Formula.
[6]Source: Bloomberg. Yield of this hypothetical IG bond is based on the EUR Europe Corporate A BVal Yield Curve as of 9 January 2020.
[7]Source: Bloomberg. Yield of this hypothetical IG bond is based on the EUR Europe Industrials BBB BVal Yield Curve as of 9 January 2020.
[8]Source: Bloomberg. Yield of this hypothetical IG bond is based on the EUR Europe Industrials BB BVal Yield Curve as of 9 January 2020.
[9]"Mid OAS Effective Duration" field in Bloomberg; based on First Call Date.
[10]0=AAA, 1=AA, 2=A, 3=BBB, 4=BB, 5=B, etc.
[11]See Appendix for a complete rating x duration spread SCR table.
[12]"Mid Yield to Next Call" field in Bloomberg, as of January 9, 2020.
[13]See another Neuberger Berman white paper, *The Solvency Sharpe Ratio: Insurance SAA*, January 2020.
[14]Solvency II Standard Formula, Source: EU 2016/467 Article 2 Correcting Provisions.
[15]Source: Bloomberg Barclays as of 31 December 2018.

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