

Article Title: Criteria | Structured Finance | General: Special-Purpose Vehicle Margin Requirements For Swaps--Methodology And Assumptions Data: (EDITOR'S NOTE: —On Nov. 8, 2022, we republished this criteria article to make nonmaterial changes. See the "Revisions And Updates" section for details.)

OVERVIEW AND SCOPE 1. The criteria are primarily relevant to structured finance transactions. 2. These criteria address the operational and structural considerations resulting from bilateral margin-posting requirements on derivatives for special-purpose vehicles (SPVs). In particular, developments in derivative regulation in different jurisdictions may impose such requirements on SPVs. 3. Margin requirements would be most relevant to SPVs in U.S. structured finance transactions that enter into derivative contracts from September 2017, with the exception of SPVs that are subsidiaries of captive finance companies, which benefit from an exemption. In other jurisdictions, we understand that the SPVs typically seen in structured finance transactions would generally be exempt from posting margin, based on their counterparty classification and the size of their derivative exposures. In particular, covered bond issuers in Europe are explicitly exempt from margin requirements if they meet a set of conditions that include, in particular, a legal framework that sets a minimum overcollateralization level of 2%. 4. As the regulations on margin requirements for derivative contracts are still evolving in different jurisdictions, we may amend or supplement our criteria if these regulations or their implementation changes. 5. Where an SPV is required to post collateral on a derivative, these criteria apply globally to the following asset classes: All structured finance securities; Covered bonds; and Corporate and government issues that we consider to have structured finance characteristics (for example, project finance transactions, catastrophe bonds, gas pre-pay financings, stand-alone tax-exempt single- and multifamily housing bonds, equipment trust certificates, municipal pools, and industrial development bonds). Key Publication Dates Original publication date: Oct. 10, 2017 Effective date: Oct. 10, 2017 These criteria address payment mechanics, legal and regulatory risk, operational and administrative risk, and counterparty risk as set out in "Principles Of Credit Ratings," published on Feb. 16, 2011. 6. The criteria supplement our counterparty criteria framework, "Counterparty Risk Framework: Methodology And Assumptions," published on March 8, 2019 (the "counterparty criteria"), as well as our "Global Derivative Agreement Criteria," published on June 24, 2013. METHODOLOGY 7. The criteria address: The sizing of any liquidity support to allow an SPV to meet its margin-posting requirement; The operational considerations of margin posting for an SPV; and The analysis of the counterparty risk introduced when an SPV relies on a third party to provide liquidity support, including the potential credit-enhancement impact of having to repay the liquidity provider for amounts drawn and subsequently used for termination payments, as applicable. Structural Considerations Sizing an SPV's potential exposure to margin requirements 8. If an SPV is required to post margin to a derivative counterparty, it will likely need some form of liquidity support, since SPVs typically do not have access to additional liquid assets beyond the securitized assets, and cash flows from securitized assets are unlikely to provide sufficient liquidity if any, given the payment period to meet potential posting amounts required. 9. In our view, such support could materialize either through a committed loan facility that could provide funding as needed, or from the SPV's dedicated cash reserves. In either case, we consider that the support mechanism should be available at closing. 10. If the support is limited to a certain fixed amount, we expect this limit to be sized to enable the SPV to post margin over the entire life of the transaction. Sizing the maximum posting amount entails estimating the SPV's largest out-of-the-money value over the entire life of the swap. 11. We expect that, where margin requirements are applicable to the relevant swaps, an SPV will typically post variation margin (that is, the mark-to-market of the swap), and not initial margin. To the extent that an SPV were also required to post initial margin, this amount would be fixed at closing and could therefore be sized independently from developments in market rates over the life of the swap. 12. We expect that a calculation agent (or other transaction participant) would quantify at closing the largest potential out-of-the-money position for the SPV over the life of the swap (that is, the maximum posting amount), and that liquidity support would be sized to cover this amount. In order to determine whether this amount is commensurate with a given rating level, we propose to: First, review the assumptions in this sizing calculation; and Second, benchmark the result against our own internal model. 13. Under the criteria, we review the assumptions that the calculation agent has applied in its calculation of the maximum exposure of the counterparty to the SPV. Specifically: For interest-rate swaps, the potential projected paths of the term structure of

interest rates and how they compare with the most extreme historical observations for the relevant rates. For cross-currency swaps, the combination of currency exchange rates and interest rate scenarios in the relevant countries and how they compare to the most extreme historical observations for the relevant rates. Any assumptions made with regard to the amortization of the derivative's notional balance.

14. In order to calculate the SPV's maximum out-of-the-money position over the life of the swap, we expect the calculation agent to simulate a range of swap valuations on each future valuation date, and then select on each valuation date the SPV's posting requirement that is consistent with the 99th percentile. This will create a curve for the potential future values of the SPV's out-of-the-money positions at each valuation date. The curve represents an upper boundary for the calculated out-of-the-money positions for the SPV in the stressed rate scenarios that we consider. Under these criteria, the maximum point on this curve will be the maximum out-of-the-money position that the SPV will be required to post against. Liquidity support should be sized accordingly.

15. Considering that market participants may use different interest and foreign-exchange rate models, in order to assess the maximum out-of-the-money position over the life of the swap determined by the calculation agent, we will focus on the projected interest and foreign-exchange rates of each model underlying the swap valuation exercise. We expect the 99th percentile upper boundary of interest rates simulated by the calculation agent to reach levels no lower than with the most extreme historical observations (see chart 1). For example, U.S. interest rates reached 20% in the 1980s. We would expect simulated U.S. interest rates to follow a path no lower than that illustrated in chart 1. We also expect the simulation to capture the eventuality of negative interest rates. We consider the levels commensurate with the most extreme historical observations to be appropriate considering the undiversified market risk an SPV is exposed to over a long time horizon (the weighted average life of the swap) given that typically it engages in very few derivative contracts at any one time. Chart 1

16. For cross-currency swaps, to capture the potential volatility of foreign-exchange rates, the criteria contemplate that the simulated foreign-exchange rate should shift in the direction that puts the SPV in an out-of-the-money position, to a level dependent on the tenor of the swap. For example, 2.0x is the highest rate observed historically (and 0.5x the lowest rate observed), for a swap with a 15-year time horizon (see the example in chart 2). Chart 2

17. Under these criteria, we will benchmark the size of liquidity support against a threshold informed by the output of our internal model. This model produces a proxy for the SPV's maximum potential out-of-the-money position by calculating the net present value of cash flow streams, reflecting idealized swaps of different tenors and extreme market rate evolutions.

18. We will assess whether the size of the liquidity support fits within a specific quantile range informed by the output produced by our internal model. The criteria consider quantile ranges for this comparison, rather than specific quantiles, as some of our internal model assumptions may differ from those used by the calculation agent. In particular, our analysis may consider different values than the current market value for the starting point of the relevant market rate, in order to factor in sudden changes in rate movements. In addition, the calculation agent's calculation may capture detailed terms of the specific swap contract, whereas our own model considers only three idealized swaps (fixed-floating, floating-floating, and foreign exchange).

19. We select a quantile range that is dependent on the rating on the liabilities, as shown in the table below. For investment-grade ratings, the quantile will generally range between 90% and 100%, inclusive. We may apply qualitative adjustments to the quantiles or our assumptions if the swaps have characteristics that are specific to the transactions and not reflected in our internal benchmark model.

RATING ON THE NOTES	QUANTILE RANGE USED FOR BENCHMARKING
'BBB-' and above	At least 90%
'BB+' and below	At least 80% and below 90%

20. If we assess that the available liquidity support may be below the ranges outlined above for a given rating, we will generally assume that the SPV will become unable to fund further margin payments during the life of the transaction. We make this assumption, in particular, in the following cases: If the sizing of the liquidity support is below the 80th percentile of our model output; If the calculation agent's assumptions are not commensurate with the levels of stress discussed in previous paragraphs; or If we have not received sufficient information to support that the assumptions are commensurate with the levels of stress discussed in previous paragraphs.

21. In cases where we assume that the SPV will become unable to fund further margin payments, we analyze the transaction assuming that the derivative may be terminated after the liquidity support has been exhausted, and that the deal remains unhedged thereafter. Our rating will

reflect our assessment of the SPV's ability to service the notes on this basis; the possibility of events of default on the notes, triggered by a failure to pay the swap; and any repayments due to the liquidity support provider, depending on the priority of these repayments in the waterfall. However, we would not assign a rating in the aforementioned cases if failure to post margin payments is also an event of default on the notes, because the likelihood of defaulting on the notes would be linked to the likelihood of failing to post margin payments. 22. Based on the extreme interest rate or foreign-exchange rate scenario we considered in calculating the maximum potential out-of-the-money position for the SPV over the life of the transaction, we consider that the amount sized at closing is consistent with the rating scenario that we expect the notes to withstand. However, we may undertake an additional review of the supported rating during the life of the transaction if the relevant market rates evolve significantly beyond the starting parameters we considered at closing. Operational Considerations 23. To assess an SPV's operational capacity to meet bilateral margin-posting requirements in our analysis, we would consider: The availability of a model for calculating the SPV's daily margin position and variation margin; The role of an administrator, such as a calculation agent or trustee, or other party responsible for calculating margin, posting margin, and accepting margin as required by the regulations; and The use, if any, of a third-party agent to confirm or dispute margin requests by the counterparty. Restrictions on incurring additional indebtedness 24. We view as relevant to our analysis of insolvency remoteness whether there are restrictions on an SPV's ability to incur indebtedness in addition to the rated debt. Third-party funding, such as a margin loan facility, would generally require additional costs and a return of funding that are usually repaid ahead of investors. In order to assess whether this affects our asset isolation analysis, we will determine whether such payments are subordinated or senior, and whether there is sufficient credit enhancement to repay the liquidity provider any drawn amounts used to pay termination payments under the swap, in application of our criteria articles "Structured Finance: Asset Isolation And Special-Purpose Entity Methodology," published on March 29, 2017 (see paragraphs 27-29), and "U.S. Structured Finance Asset Isolation And Special-Purpose Entity Criteria," published on May 15, 2019. Counterparty Risk Considerations Application to margin loan facilities 25. Third-party liquidity is only mentioned sporadically in the U.S. regulations. Based on our understanding of the regulations, we believe that third-party liquidity is allowed to facilitate an SPV's compliance with margin requirements. 26. When a margin loan facility provider serves as the counterparty to facilitate the SPV's ability to post variation margin, the rating on the notes may exceed the rating on the counterparty if the counterparty commits, upon the downgrade of the counterparty rating below the minimum eligible counterparty rating, to pre-fund/draw-to-cash the obligation, within the remedy period, if it has not replaced itself with an eligible counterparty. Note that our counterparty criteria generally consider that either a replacement commitment or a draw-to-cash commitment may mitigate the counterparty risk of a liquidity facility provider. In contrast, under these criteria, the replacement commitment would only mitigate the counterparty risk of the margin loan facility provider if it is combined with a commitment to draw-to-cash within the remedy period, if no replacement counterparty has been found. This is because such margin loan facilities do not yet exist, and we do not have any evidence of counterparty replacement. 27. Generally, the minimum eligible counterparty ratings for the margin loan provider and the applicable remedy period would be those described in the "Nonderivative Counterparties" section of our counterparty criteria under the column "Limited exposure" of table 1. 28. If the counterparty commits to draw-to-cash the obligation, the amount drawn should account for the maximum collateral posting requirement over the life of the swap, in order to support a rating on the notes that is higher than the counterparty rating. 29. Should the margin loan facility provider fail to replace itself or draw-to-cash following a downgrade below the applicable trigger, the rating on the notes will generally be linked to the rating on the margin loan facility provider, in the absence of further elements that mitigate the risk. 30. The use of a liquidity facility to meet margin-posting requirements requires that we analyze whether there is sufficient credit enhancement to cover the obligation to repay any liquidity draws that are used to pay termination payments, if these repayments under the liquidity facility are not subordinated to the rated notes. In particular, we will assume that a swap terminates and the SPV will have used drawn amounts to make a termination payment to the swap counterparty. We will assess the principal and interest payments due to the facility provider under "Global Framework For Payment Structure And Cash Flow Analysis Of Structured Finance Securities," published Dec. 22, 2020. 31. Generally, fees

due by the SPV to the margin loan facility provider may be either capped and senior in the transaction's priority of payments, or uncapped and subordinated. We will assess any margin loan fees payable under "Global Framework For Payment Structure And Cash Flow Analysis Of Structured Finance Securities." 32. The margin loan facility may be provided in various forms (for example, as liquidity agreements, guarantees, and letter-of-credit agreements). We would typically look for unconditional, irrevocable instruments with limited "outs," allowing the margin facility provider to only terminate the facility in very limited circumstances that we would deem remote to the rating scenario. We expect the instruments not to expire until either the final payment on the notes, or the date that the original swap would have terminated. Application to swap counterparties 33. Under regulatory margin requirements, where applicable, the swap counterparty will start posting to the SPV from the day the swap is effective. Therefore, the swap counterparty will post the higher of the regulatory requirement, and any other amount contemplated in the transaction documentation. Our counterparty criteria include provisions addressing the segregation of collateral--as well as asset eligibility considerations and collateral posting formulae--that we consider to support, in conjunction with a replacement framework, an elevation of the supported structured finance rating above the counterparty rating. Senior termination payments 34. Currently, our counterparty criteria state that if the derivative counterparty is in-the-money, but is the defaulting party or sole affected party, the impact of a termination payment owed to the counterparty is typically mitigated (for example, by subordination). Furthermore, the counterparty should agree that any early termination payment due will be subject to the transaction's priority of payments. Our counterparty criteria consider subordination of termination payments as one of the incentives for the counterparty to replace itself within the remedy period. 35. Under regulatory margin requirements, where applicable, we understand that these subordination provisions may no longer be available to the SPV. Therefore, in this case, no adjustment would apply under our counterparty criteria on account of senior termination payments. The liquidity impact of the termination payment, if owed by the SPV to the counterparty upon termination of the swap, is mitigated by the posting of collateral by the SPV up to the termination date. Also, the senior ranking of termination payments does not affect the likelihood that a counterparty replacement will occur in this case. On the one hand, the senior ranking of termination payments may reduce the counterparty's incentive to replace itself. On the other hand, as the SPV is required to post margin in favor of the swap counterparty, this may further enhance the likelihood of finding a replacement within the remedy period. Therefore, we believe that the ability of a downgraded counterparty to replace itself will, on balance of these factors, be maintained or enhanced, thereby reducing the likelihood of a counterparty payment default while the swap is outstanding. 36. This paragraph has been deleted. REVISIONS AND UPDATES This article was originally published on Oct. 10, 2017. The criteria became effective upon publication. Changes introduced after original publication: On Dec. 3, 2019, we republished this criteria article to make nonmaterial changes. We updated the contact information and criteria references, and we removed information in paragraphs 1 and 3 that was related to the initial publication of the criteria or that was contextual description that was no longer relevant. We also removed the description of the impact on outstanding ratings. On Nov. 30, 2020, we republished this criteria article to make nonmaterial changes. In paragraph 24, we removed an outdated criteria reference and replaced it with "U.S. Structured Finance Asset Isolation And Special-Purpose Entity Criteria," published May 15, 2019. In paragraph 27, we updated a reference to a table in the counterparty criteria and removed noncriteria text. We also removed two outdated references from the "Related Criteria" section. On Nov. 23, 2021, we republished this criteria article to make nonmaterial changes to update criteria references. On Nov. 8, 2022, we republished this criteria article to make nonmaterial changes to update the contact list. RELATED CRITERIA AND RESEARCH Related Criteria Global Framework For Payment Structure And Cash Flow Analysis Of Structured Finance Securities, Dec. 22, 2020 U.S. Structured Finance Asset Isolation And Special-Purpose Entity Criteria, May 15, 2019 Counterparty Risk Framework: Methodology And Assumptions, March 8, 2019 Structured Finance: Asset Isolation And Special-Purpose Entity Methodology, March 29, 2017 Global Framework For Assessing Operational Risk In Structured Finance Transactions, Oct. 9, 2014 Global Derivative Agreement Criteria, June 24, 2013 Criteria For Assigning 'CCC+', 'CCC', 'CCC-', And 'CC' Ratings, Oct. 1, 2012 Principles Of Credit Ratings, Feb. 16, 2011