

## OCC Lending Limits Final Rule

Transaction Type	Credit Exposure	Calculation Examples under Final Rule
<b>Derivatives</b>		
Interest Rate Swap	<p>Institutions that have an approved model can use the model to determine the attributable credit exposure.</p> <p>If no model, institutions must use either the Conversion Factor Matrix Method or the Current Exposure Method.</p> <p><u>Conversion Factor Matrix Method:</u> Attributable credit exposure is locked-in or fixed at the PFE on day 1 by simply multiplying notional principal amount by a conversion factor provided in table. No requirement to calculate daily mark-to-market or re-calculate PFE.</p> <p><u>Current Exposure Method:</u> Attributable credit exposure is calculated by adding the current exposure (the greater of zero or the MTM value) and the PFE (calculated by multiplying the notional amount by a specified conversion factor taken from Table 4 of the Advanced Approaches Appendix of the capital rules, which varies based on the type and remaining maturity of the contract) of the derivative transaction.</p>	<p><u>Non-modeled bank:</u> Bank A without an approved model executes a \$10 million, 5-year, interest rate swap. It receives a fixed rate and pays floating. The current mark-to-market is \$0.</p> <p><u>Under the Conversion Factor Matrix Method,</u> the PFE factor for this swap is 6%. Bank A “locks-in” attributable exposure of \$600,000 (\$10 million x 6%), the day-one PFE amount.</p> <p><u>Under the Current Exposure Method (CEM),</u> exposure is equal to the current mark-to-market, plus an “add-on” determined by multiplying the notional amount times a factor appropriate for the swap’s maturity. The factor for a 5-year swap is 0.5 percent. Bank A’s attributable exposure would be \$50,000 (0+(\$10 million x 0.5%)).</p>
Credit Derivative	<p><u>To Counterparty</u><sup>39</sup> Institutions that model derivatives exposures determine the attributable exposure based on the model, provided there is an effective margining arrangement. They add in to the amount calculated under the model any net credit exposure under an effective margining arrangement with respect to which the counterparty is not required to fully collateralize.</p> <p>Institutions that use the Conversion Factor Matrix Method or CEM for other derivative transactions, or that model but do not have an effective margining arrangement, calculate the attributable exposure as the sum of all net notional protection purchased amounts across reference entities.</p> <p><u>To Reference Entities</u><sup>40</sup> Institutions calculate the exposure as the</p>	<p><u>Modeled bank with effective margining arrangement:</u> Bank A buys and sells credit protection from and to Bank B on Firms X, Y and Z. There is an effective margining arrangement between the banks with a collateralization threshold of \$2,000,000. Banks A and B use their models to determine their counterparty credit exposures and add to the calculation \$2,000,000.</p> <p><u>Non-modeled bank or bank without effective margining arrangement:</u></p> <p><u>Example 1</u> Bank A buys and sells credit protection from and to Bank B on Firms X, Y and Z. Bank A’s net notional protection purchased from Bank B is \$50 for Firm X and \$100 for Firm Y. Bank A’s net protection sold to Bank B is \$35 for Firm Z. The lending limits exposure of Bank A</p>

<sup>39</sup> The protection buyer is exposed to the counterparty risk of the seller; the buyer expects payment from the seller if there is a default. Technically, the seller also bears a degree of counterparty credit risk; this risk is not being captured by the lending limits.

<sup>40</sup> Upon default of the reference entity, the protection seller must make a payment to the buyer.

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	<p>net notional protection sold amount. The net protection sold amount is the gross notional protection sold on a reference entity less the amount of any eligible credit derivative purchased on that reference entity from an eligible protection provider.</p>	<p>to Bank B is a <u>counterparty credit exposure</u> of \$150. (Bank A also has a lending limits exposure to Firm Z of \$35 due to <u>reference entity exposure</u>.)</p> <p><u>Example 2</u></p> <p>Bank C sells credit protection on Firms 1 and 2. Bank C's gross notional protection sold is \$100 for Firm 1 and \$200 for Firm 2. Bank C also purchases \$25 of protection on Firm 2 from an eligible protection provider (EPP) via an eligible credit derivative. The lending limits exposure of Bank C to Firm 1 is \$100 and to Firm 2 is \$175. If Bank C models its exposures and has an effective margining agreement with the EPP, its counterparty exposure to the EPP for this transaction, as well as all other derivatives transactions in the same netting set, is calculated by the model. If Bank C has no effective margining agreement with the EPP or does not model, its counterparty exposure to the EPP is \$25.</p> <p><u>Example 3</u></p> <p>Bank D funds a loan to Borrower Inc. in the amount of \$100,000. Bank D purchases protection on Borrower Inc. in the amount of \$40,000 from an eligible protection provider (EPP) via a single-name credit derivative that meets the requirements of § 32.2(m)(1) through (7). The amount of \$40,000 does not exceed 10% of Bank D's capital and surplus. Bank D's counterparty exposure to Borrower Inc. is \$60,000 for lending limits purposes (\$100,000 - \$40,000). Bank D, a bank whose use of models for legal lending limits purposes has been approved by the appropriate Federal banking agency, has an effective margining agreement with the EPP and so will model the counterparty exposure to the EPP on this credit derivative transaction as part of a portfolio of derivative transactions with the EPP.</p>
<b>Securities Financing</b>		
Reverse Repurchase Agreement (asset repo)	<p>Institutions that have an approved model can use the model to determine the attributable credit exposure.</p> <p>Banks that do not have an approved</p>	<p><u>Using the Basic Method:</u></p> <p>Bank executes a reverse repo in which it lends \$100 and receives as collateral 7-year Treasury securities worth \$102 that have a haircut, based on Table 2 of the</p>

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	<p>model can determine attributable credit exposure using either the Basic Method or the Basel Collateral Haircut Method.</p> <p><u>Basic Method:</u> Attributable credit exposure for lending limit purposes is the product of the haircut associated with the collateral received and the amount of cash transferred.</p> <p><u>Basel Collateral Haircut Method:</u> Attributable credit exposure for lending limit purposes is determined pursuant to Sections 32(b)(2)(i) and (ii) of the Advanced Approaches Appendix of the capital rules.</p>	<p>final rule, of 4%. Attributable exposure is \$4 (\$100 x 4%).</p> <p><u>Using the Basel Collateral Haircut Method:</u> Bank executes a reverse repo in which it lends \$100 and receives as collateral 7-year Treasury securities worth \$102 that have a haircut of 4%, based on Table 3 of Section 32(b)(2) of the Advanced Approaches Appendix of the capital rules. Attributable exposure is <math>(\\$100 - \\$102) + (\\$100 \times 0\%) + (\\$102 \times 4\%) = \\$2.08</math>.</p>
Repurchase Agreement	<p>Institutions that have an approved model can use the model to determine the attributable credit exposure.</p> <p>Banks that do not have an approved model can determine attributable credit exposure using either the Basic Method or the Basel Collateral Haircut Method.</p> <p><u>Basic Method:</u> Attributable credit exposure for lending limit purposes is the difference between the market value of securities transferred less cash received (i.e., the net current credit exposure).</p> <p><u>Basel Collateral Haircut Method:</u> Attributable credit exposure for lending limit purposes is determined pursuant to Sections 32(b)(2)(i) and (ii) of the Advanced Approaches Appendix of the capital rules.</p>	<p><u>Using the Basic Method:</u> Bank executes a repo in which it borrows \$100, pledging 7-year Treasury securities worth \$102. Attributable exposure is \$2, the amount of net current credit exposure.</p> <p><u>Using the Basel Collateral Haircut Method:</u> Bank executes a repo in which it borrows \$100, pledging 7-year Treasury securities worth \$102 that have a haircut of 4%, based on Table 3 of Section 32(b)(2) of the Advanced Approaches Appendix of the capital rules. Attributable exposure is <math>(\\$102 - \\$100) + (\\$100 \times 0\%) + (\\$102 \times 4\%) = \\$6.08</math>.</p>
Securities Borrowing Transaction	<p>Institutions that have an approved model can use the model to determine the attributable credit exposure.</p> <p>Banks that do not have an approved model can determine attributable credit exposure using either the Basic Method or the Basel Collateral Haircut Method.</p> <p><u>Basic Method:</u> If collateral is cash, treat the same as reverse repo: Attributable credit exposure for lending purposes is the product of the haircut associated with the collateral received and the amount of cash transferred.</p>	<p><u>Using the Basic Method, cash as collateral:</u> Bank borrows \$100 par value 7-year Treasury securities that have a fair value of \$102. The bank pledges \$100 in cash. The haircut associated with the security is 4%, based on Table 2 of the final rule. The attributable exposure is \$4 (\$100 x 4%).</p> <p><u>Using the Basic Method, securities as collateral:</u> Bank borrows \$100 par value 7-year Treasury securities (with fair value \$101) and pledges 5-year bank eligible corporate bonds with a par value of \$100 and fair</p>

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	<p><u>If collateral is securities:</u> Attributable credit exposure for lending limit purposes is the product of the higher of the two haircuts associated with the two securities and the higher of the two par values of the securities.</p> <p><u>Basel Collateral Haircut Method:</u> Attributable credit exposure for lending limit purposes is determined pursuant to Sections 32(b)(2)(i) and (ii) of the Advanced Approaches Appendix of the capital rules.</p>	<p>value of \$102. The haircut on the borrowed security is 4% and the haircut on the pledged security is 6%, based on Table 2 of the final rule. The attributable exposure is \$6 (<math>\\$100 \times 6\%</math>), based upon the higher of the two security haircuts and the higher of the two par values (here the par values were the same).</p> <p><u>Using the Basel Collateral Haircut Method, cash as collateral:</u> Bank borrows \$100 par value 7-year Treasury securities that have a fair value of \$102. The bank pledges \$100 in cash. The haircut associated with the security is 4%, based on Table 3 of Section 32(b)(2) of the Advanced Approaches Appendix of the capital rules. The attributable exposure is <math>(\\$100 - \\$102) + (\\$100 \times 0\%) + (\\$102 \times 4\%) = \\$2.08</math>.</p> <p><u>Using the Basel Collateral Haircut Method, securities as collateral:</u> Bank borrows \$100 par value 7-year Treasury securities (with fair value \$101) and pledges 5-year bank eligible corporate bonds with a par value of \$100 and a fair value of the \$102. The haircut on the borrowed security is 4% and the haircut on the pledged security is 6%, based on Table 3 of Section 32(b)(2) of the Advanced Approaches Appendix of the capital rules. The attributable exposure is: <math>(\\$102 - \\$101) + (\\$102 \times 6\%) + (\\$101 \times 4\%) = \\$11.16</math>.</p>
Securities Lending Transaction	<p>Institutions that have an approved model can use the model to determine the attributable credit exposure.</p> <p>Banks that do not have an approved model can determine attributable credit exposure using either the Basic Method or the Basel Collateral Haircut Method.</p> <p><u>Basic Method:</u> If collateral received is cash, treat the same as a repo: The attributable credit exposure for lending limit purposes is the net current credit exposure.</p> <p>If the collateral received is other securities: The attributable credit exposure for lending limit purposes is the product of the higher of the two haircuts associated with the two securities and the</p>	<p><u>Using the Basic Method, cash as collateral:</u> Bank lends \$100 par value 7-year Treasury securities with fair value of \$102 and receives \$100 in cash collateral. Attributable exposure is \$2, the net current credit exposure.</p> <p><u>Using the Basic Method, securities as collateral:</u> Bank lends \$100 par value 7-year Treasury securities with fair value of \$101 and receives as collateral a 5-year bank eligible corporate bond with a \$100 par value and \$102 fair value. The haircuts on the loaned and borrowed securities are 4% and 6%, respectively, based on Table 2 of the final rule. Attributable exposure is \$6 (<math>\\$100 \times 6\%</math>), based upon the higher of the two security haircuts and the higher</p>

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	<p>higher of the two par values of the securities.</p> <p><u>Basel Collateral Haircut Method:</u> Attributable credit exposure for lending limit purposes is determined pursuant to Sections 32(b)(2)(i) and (ii) of the Advanced Approaches Appendix of the capital rules.</p>	<p>of the two par values (here the par values were the same).</p> <p><u>Using the Basel Collateral Haircut Method cash as collateral:</u> Bank lends \$100 par value 7-year Treasury securities with fair value of \$102 and receives \$100 in cash collateral. The haircut on the security is 4%, based on Table 3 of Section 32(b)(2) of the Advanced Approaches Appendix of the capital rules. Attributable exposure is <math>(\\$102 - \\$100) + (\\$100 \times 0\%) + (\\$102 \times 4\%) = \\$6.08</math>.</p> <p><u>Using the Basel Collateral Haircut Method, securities as collateral:</u> Bank lends a \$100 par value 7-year Treasury security with a fair value of \$101 and receives a 5-year bank eligible corporate bond as collateral, with a \$100 par value and \$102 fair value. The haircuts on the loaned and borrowed securities are 4% and 6%, respectively, based on Table 3 of Section 32(b)(2) of the Advanced Approaches Appendix of the capital rules. Attributable exposure is <math>(\\$101 - \\$102) + (\\$102 \times 6\%) + (\\$101 \times 4\%) = \\$9.16</math>.</p>