

2. A bank's net open position in each currency (and gold) is calculated by summing:

a. The net spot position (i.e., all asset items less all liability items, including accrued interest earned but not yet received and accrued expenses, denominated in the currency in question);

b. All foreign exchange derivative instruments and other off-balance-sheet positions that are affected by changes in exchange rates are included in the measurement system under section IV.C. of this Appendix E (except for options and their associated underlyings, which are included in the measurement system under the treatment discussed in section IV.E. of this Appendix E). Forward currency positions should be valued at current spot market exchange rates. For a bank in which the basis of its normal management accounting is to use net present values, forward positions may be discounted to net present values as an acceptable way of measuring currency positions for regulatory capital purposes;

c. Guarantees (and similar instruments) that are certain to be called and are likely to be irrevocable;

d. Net future income/expenses not yet accrued but already fully hedged (at the discretion of the bank). A bank that includes future income and expenses must do so on a consistent basis without selecting expected future flows in order to reduce the bank's position; and

e. Any other item representing a profit or loss in foreign currencies.

3. For measuring a bank's open positions, positions in composite currencies, such as the ECU, may be either treated as a currency in their own right or split into their component parts on a consistent basis. Positions in gold are measured in the same manner as described in section IV.D. of this Appendix E.<sup>39</sup>

4. The capital requirement is determined by converting the nominal amount (or net present value) of the net open position in each foreign currency (and gold) at spot rates into the reporting currency. The capital requirement is 8.0 percent of the sum of:

a. The greater of the sum of the net short open positions or the sum of the net long open positions (absolute values); and

b. The net open position in gold, regardless of sign.<sup>40</sup>

5. Where a bank is assessing its foreign exchange risk on a consolidated basis, it may be technically impractical in the case of some marginal operations to include the currency positions of a foreign branch or subsidiary of the bank. In such cases, the internal limit in

each currency may be used as a proxy for the positions, provided there is adequate ex post monitoring of actual positions complying with such limits. In these circumstances, the limits should be added, regardless of sign, to the net open position in each currency.

#### D. Commodities Risk

1. *Measurement methods.* This section provides a minimum capital requirement to cover the risk of holding or taking positions in commodities. There are two methods under the standardized approach for measuring commodity market risk—the simplified method and the maturity method. These methods are only appropriate for banks that conduct a limited amount of commodities business. All other banks must adopt an internal measurement system conforming to the criteria in section III. of this Appendix E.

2. *Base capital requirement.* Under both the simplified and maturity methods, each long and short commodity position (spot and forward) is expressed in terms of the standard unit of measurement (such as barrels, kilos, or grams). The open positions in each category of commodities are then converted at current spot rates into U.S. currency, with long and short positions offset to arrive at the net open position in each commodity. Positions in different categories of commodities may not, generally, be offset.<sup>41</sup> Under either method, the base capital requirement is 15.0 percent of the net open position, long or short, in each commodity.<sup>42</sup>

3. *Simplified method.* To protect a bank against basis risk, interest rate risk, and forward gap risk, each category of commodity is also subject to a 3.0 percent capital requirement on the bank's gross positions, long plus short, in the particular commodity. In valuing gross positions in commodity derivatives for this purpose, a bank should use the current spot price. The total capital requirement for commodities risk is the sum of the 15.0 percent base charges for each net commodity position and the 3.0 percent requirements on the gross commodity positions.

4. *Maturity method.* a. Under this method, a bank must slot each long and short commodity position (converted into U.S. currency at current spot rates) into a maturity ladder. The time-bands for the maturity ladder are: from zero to one month, one up to three months, three up to six months, six up to twelve months, one up to two years, two up to three years, and over three years. A separate maturity ladder is used for each category of commodity. Physical

commodities are allocated to the first time-band.

b. In order to capture forward gap and interest rate risk within a time-band (together sometimes referred to as curvature/spread risk), offsetting long and short positions in each time-band are subject to an additional capital requirement. Beginning with the shortest-term time-band and continuing with subsequent time-bands, the amount of the matched short position plus the amount of the matched long position is multiplied by a spread rate of 1.5 percent.

c. The unmatched net position from shorter-term time-bands must be carried forward to offset exposures in longer-term time-bands. A capital requirement of 0.6 percent of the net position carried forward is added for each time-band that the net position is carried forward.<sup>43</sup> The total capital requirement for commodities risk is the sum of the 15.0 percent base capital requirement for each net commodity position and the additional requirements for matched positions and for unmatched positions carried forward. An example of this calculation is in Attachment IV to this Appendix E.

5. *Commodity derivatives.* Commodity derivatives and other off-balance-sheet positions that are affected by changes in commodity prices are included in the measurement system under section IV.D. of this Appendix E (except for options and the associated underlying, which are included in the measurement system under the treatment discussed in section IV.E. of this Appendix E). Commodity derivatives are converted into notional commodity positions. Under the maturity method, the positions are slotted into maturity time-bands as follows:

a. Futures and forward contracts relating to individual commodities are incorporated in the measurement system as notional amounts (of, for example, barrels or kilos) that are converted to U.S. dollars at current spot rates and are assigned a maturity according to expiration date;

b. Commodity swaps where one side of the contract is a fixed price and the other side is the current market price are incorporated as a series of positions equal to the notional amount of the contract at current spot rates, with one position corresponding to each payment on the swap and slotted in the maturity ladder accordingly. The positions are long positions if the bank is paying a fixed price and receiving a floating price, and short positions if the bank is receiving a fixed price and paying a floating price;<sup>44</sup> and

c. Commodity swaps where the sides of the transaction are in different commodities are included in the relevant reporting ladder. No offsetting is allowed unless the commodities are in the same sub-category.

<sup>39</sup> Where gold is part of a forward contract (quantity of gold to be received or to be delivered), any interest rate or foreign currency exposure from the other side of the contract should be included in measurement system in section IV.A. (as a zero coupon instrument) and IV.C. of this Appendix E.

<sup>40</sup> For example, a bank has the following net currency positions: Yen=+50, DM=+100, GB=+150, FFR=-20, USS=-180, and gold=-35. The bank would sum its long positions (total=+300) and sum its short positions (total=-200). The bank's capital requirement for foreign exchange market risk would be: (300 (the larger of the summed long and short positions) +35 (gold)) ×8.0%=\$26.80.

<sup>41</sup> However, offsetting is permitted between different sub-categories of the same commodity in cases where the sub-categories are deliverable against each other.

<sup>42</sup> When the funding of a commodity position opens a bank to interest rate or foreign exchange exposure the relevant positions should be included in the measures of interest rate and foreign exchange risk described in sections IV.A. and IV.C. of this Appendix E. When a commodity is part of a forward contract, any interest or foreign currency exposure from the other side of the contract should be appropriately included in the measurement systems in sections IV.A. and IV.C. of this Appendix E.

<sup>43</sup> For example, if \$200 short is carried forward from the 3-6 month time-band to the 1-2 year time-band, the capital charge would be \$200×.006×2=\$2.40.

<sup>44</sup> If one of the sides of the transaction involves receiving/paying a fixed or floating interest rate, that exposure should be slotted into the appropriate repricing maturity band in section IV.A. of this Appendix E.