

## Appendix A – Bilateral Settlement Details and Processes for Category A1 Collateral in MEPS+

### 1 Collateralised Loan - Obtaining USD funds using SGD cash

1.1 To obtain USD funds using SGD cash, the successful Eligible Counterparty shall enter into a Collateralised Loan with the Authority.

1.2 The opening leg of the Collateralised Loan shall comprise the following transactions which will occur simultaneously on the Value Date:

- (a) a transaction where the Authority lends to the successful Eligible Counterparty the USD Principal (“**USD Loan Transaction**”); and
- (b) a back-to-back transaction where the Authority borrows from the successful Eligible Counterparty an equivalent amount in SGD (“**Effective SGD Amount**”) (“**SGD Borrowing Transaction**”), to serve as collateral for the USD Loan Transaction, with the Effective SGD Amount to be determined as follows:

$$\begin{aligned} & \bullet \text{ Effective SGD Amount (rounded to 2 decimal places)} \\ & = \text{USD Principal} \\ & \times \frac{\text{USDSGD FX spot rate as defined in Clause 11.1 of the Agreement}}{\left(1 - \frac{\text{Haircut}}{100}\right)} \end{aligned}$$

where the Haircut for the SGD cash collateral is set out in a MASNET circular or in notices transmitted via any other written communication modes stipulated in Clause 27 of the Agreement.

1.3 At the closing leg of the Collateralised Loan,

- (a) On Maturity Date (M), the successful Eligible Counterparty shall credit into the Authority’s USD account with the FRBNY, the USD Principal and the USD Interest<sup>1</sup> by 11.00am (New York Time); and
- (b) One (1) Business Day after the Maturity Date (M+1), and provided that the Authority has received prior confirmation from the FRBNY that the USD Principal and the USD Interest have been credited into the Authority’s USD account with the FRBNY, the Authority shall return the Effective SGD Amount to the successful Eligible Counterparty.

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<sup>1</sup> Refer to Section 3 in this Appendix A for calculation of USD Interest.

## 2 Repo - Obtaining USD funds using SGS Bonds, SGS T-bills, MAS Bills and/or MAS FRN (“Category A1 Securities”)

2.1 To obtain USD funds using the Category A1 Securities, the successful Eligible Counterparty shall enter into a Repo with the Authority. The Repo shall comprise the following transactions:

(a) opening leg – a transaction where the successful Eligible Counterparty sells Category A1 Securities to the Authority (the “Sale”) and receives USD Principal from the Authority on the Value Date; and

(b) closing leg – a transaction where, on the Maturity Date, the successful Eligible Counterparty repurchases from the Authority the Category A1 Securities which were transferred to the Authority pursuant to the Sale by paying the Closing Leg Settlement Amount to the Authority.

For the purpose of the Sale referred to in Paragraph 2.1(a), the amount of Category A1 Securities to be transferred by the successful Eligible Counterparty to the Authority to obtain the USD Principal (the “Effective SGD Nominal Amount”) shall be computed as follows:

- *Effective SGD Nominal Amount of Category A1 Securities for opening leg settlement (rounded up to the nearest one thousand)*

$$= \frac{\text{SGD}}{\text{Nominal Amount}} \times \frac{100}{\text{Effective Price of the Category A1 Securities}}$$

- *SGD Nominal Amount (rounded to 2 decimal places)*

= *USD Principal × USDSGD FX spot rate as defined in Clause 11.1 of the Agreement*

2.2 The Effective Price of the Category A1 Securities on the Trade Date shall be defined as follows:

(a) Repos involving SGS Bonds<sup>2</sup>

- *Effective Price of the SGS Bonds (rounded to 2 decimal places)*  
= *Initial dirty price (rounded to 2 decimal places) × (1 –  $\frac{\text{Haircut}}{100}$ )*

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<sup>2</sup> The formula is for bonds with normal interest period of 6 months during the cum-interest period. For other formulae (e.g. ex-dividend period), please refer to Appendix I of the [Rules and Market Practices of the Singapore Government Securities Market](#).

where the Haircut for the SGS Bonds is set out in a MASNET circular or in notices transmitted via any other written communication modes stipulated in Clause 27 of the Agreement.

- *Initial dirty price (rounded to 2 decimal places) = P + AI*

where

P is the closing clean price of the SGS Bonds one (1) Business Day prior to the Trade Date as published on the Authority's website<sup>3</sup>.

AI is the accrued interest per S\$100 face value, and shall be calculated as at the Value Date of the Repo as follows,

$$AI = \left( \frac{\text{coupon rate in \%}}{2} \right) \times \left( \frac{N}{E} \right)$$

where

N is the number of calendar days between the first day of the current coupon period of the SGS Bonds (inclusive) and the Value Date (exclusive); and

E is the number of calendar days in the current coupon period of the SGS Bonds where the Value Date occurs; and

(b) Repos involving SGS T-bills or MAS Bills

- *Effective Price of the SGS T-bills or MAS Bills (rounded to 3 decimal places)*

$$= \text{Initial clean price (rounded to 3 decimal places)} \times \left( 1 - \frac{\text{Haircut}}{100} \right)$$

where the Haircut for the SGS T-bills and MAS Bills are set out in a MASNET circular or in notices transmitted via any other written communication modes stipulated in Clause 27 of the Agreement.

- *Initial clean price (rounded to 3 decimal places)*  
 $= 100 - \left( \frac{N}{365}, \text{rounded to 10 decimal places} \right) \times Y$

where

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<sup>3</sup> For SGS Bonds, refer to <https://eservices.mas.gov.sg/statistics/fdanet/BondPricesAndYields.aspx>

N is the number of calendar days from the Value Date (inclusive) to the maturity date of the SGS T-bills or MAS Bills (whichever is applicable) (exclusive); and

Y is the closing yield of the SGS T-bills or MAS Bills (whichever is applicable) one (1) Business Day prior to the Trade Date as published on the Authority's website<sup>4</sup>; and

(c) Repos involving MAS FRN

- *Effective price of the MAS FRN (rounded to 2 decimal places) =*

$$\text{Initial dirty price (rounded to 2 decimal places)} \times \left(1 - \frac{\text{Haircut}}{100}\right)$$

where the Haircut for the MAS FRN is set out in a MASNET circular or in notices transmitted via any other written communication modes stipulated in Clause 27 of the Agreement.

- *Initial dirty price (rounded to 2 decimal places) = P + AI*

where

P is the closing clean price of the MAS FRN one (1) Business Day prior to the Trade Date as published on the Authority's website<sup>5</sup>; and

AI is the accrued interest per S\$100 face value, and shall be calculated as at the Value Date of the Repo as follows,

$$AI = \text{Coupon Rate in \%} \times \left(\frac{N}{E}\right)$$

where

N is the number of calendar days between (i)(A) the issue date of the MAS FRN (if no coupon has been issued) or (B) the first day of the current coupon period of the MAS FRN (if a coupon has been previously issued) (inclusive), and (ii) the Value Date (exclusive);

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<sup>4</sup> For SGS T-bills, refer to <https://eservices.mas.gov.sg/statistics/fdanet/TreasuryBillPricesAndYields.aspx>. For MAS Bills, refer to <https://eservices.mas.gov.sg/statistics/masbills/MASBillsPricesAndYields.aspx>.

<sup>5</sup> For MAS FRN, refer to <https://eservices.mas.gov.sg/statistics/frn/FRNBenchmarkIssuePrices.aspx>

E is determined as follows–

- i. if N falls between the issue date and the second interest payment date, E is the number of calendar days between the issue date (inclusive) and the second interest payment date (exclusive) of the MAS FRN; or
- ii. if N falls between the X interest payment date and X+2 interest payment date of the MAS FRN, E is the number of calendar days between the X interest payment date (inclusive) and the X+2 interest payment date (exclusive), where X is any even positive integer;

AI should be floored at zero (0) if the computed value is negative;

*Coupon Rate in %*

= *Compounded SORA in % (rounded to 4 decimal places)*  
+ *Cut-off Spread in %*

where

Cut-off Spread (%) is the Cut-off Spread published for the respective MAS FRN Auction , expressed in percentage terms;

*Compounded SORA in % (rounded to 4 decimal places)*

$$= \left( \left( \frac{\text{End SORA Index}}{\text{Start SORA Index}} - 1 \right) \times \frac{365}{\text{End SORA Date} - \text{Start SORA Date}} \right) \times 100$$

where

End SORA Date is two (2) Business Days (based on “SORA Publication Date”) prior to the Value Date;

where

SORA Publication Date is the SORA Publication Date set out in the Singapore Overnight Rate Average (SORA) Table, as can be found on the MAS website<sup>6</sup>;

End SORA Index is the SORA Index on the End SORA Date;

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<sup>6</sup> <https://eservices.mas.gov.sg/Statistics/dir/DomesticInterestRates.aspx>

where

SORA Index is the SORA Index set out in the Singapore Overnight Rate Average (SORA) Table, as can be found on MAS website<sup>7</sup>;

If the actual End SORA Index is not available on the Trade Date, the End SORA Index is forecasted based on the last available SORA Index and SORA, according to the following formula:

$$\begin{aligned} & \text{SORA Index}_i \\ &= \text{SORA Index}_{i-1} \times \left(1 + \frac{\text{SORA Index}_{i-1} \times n_{i-1}}{365}\right) \end{aligned}$$

where

“SORA Index<sub>i</sub>” = The index for date i, calculated and published on date i, rounded to 10 decimal places;

“SORA<sub>i-1</sub>” = The SORA rate for Singapore business day i-1, published on Singapore business day i; and

“n<sub>i-1</sub>” = The number of calendar days for which SORA<sub>i-1</sub> applies. This is equal to the number of calendar days between Singapore business day i-1 and Singapore business day i;

Start SORA Date is two (2) Business Days (based on “SORA Publication Date”) prior to the issue date of the MAS FRN (if no coupon has been issued) or the first day of the current coupon period of the MAS FRN (if a coupon has been previously issued); and

Start SORA Index is the SORA Index on the Start SORA Date.

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<sup>7</sup> <https://eservices.mas.gov.sg/Statistics/dir/DomesticInterestRates.aspx>

- 2.3 While a combination of different issues of Category A1 Securities can be used for Repos to obtain USD funds, the Category A1 securities that are proposed to be used by the successful Eligible Counterparty from each issue shall have a nominal value of at least S\$1 million.
- 2.4 Any coupon payments paid to the Authority arising from the SGS Bonds and MAS FRN in a Repo will be handled in accordance with the terms of the GMRA entered into between the Authority and the successful Eligible Counterparty, unless otherwise agreed in writing between the Authority and the successful Eligible Counterparty.
- 2.5 Eligible Counterparties should refer to the Authority's website<sup>8</sup> for the prices or yields (whichever applicable) of the applicable Category A1 Securities before submitting their bids.

### 3 USD Interest payable on the USD Principal in a Transaction

- 3.1 On Maturity Date of a Transaction, the successful Eligible Counterparty shall pay to the Authority the Closing Leg Settlement Amount arising from the Transaction. The amount of USD Interest payable shall be computed as set out below:

- *USD Interest for Collateralised Loan **OR** Repo*  

$$= \text{USD Principal} \times \frac{\text{Accepted Bid Rate (in bps)}}{10,000} \times \frac{\text{Actual}}{360}$$

where

Actual means the number of calendar days between the Value Date (inclusive) and the Maturity Date (exclusive).

- 3.2 No interest shall be payable by the Authority for the Effective SGD Amount in relation to the SGD Borrowing Transaction, entered into as part of a Collateralised Loan under the Agreement.
- 3.3 No interest shall be payable by the Authority for any Effective SGD Nominal Amount of Category A1 Securities transferred to the Authority to serve as collateral in relation to any Repo to obtain USD funds under the Agreement.

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<sup>8</sup> For SGS Bonds, refer to <https://eservices.mas.gov.sg/statistics/fdanet/BondPricesAndYields.aspx>. For SGS T-bills, refer to <https://eservices.mas.gov.sg/statistics/fdanet/TreasuryBillPricesAndYields.aspx>. For MAS Bills, refer to <https://eservices.mas.gov.sg/statistics/masbills/MASBillsPricesAndYields.aspx>. For MAS FRN, refer to <https://eservices.mas.gov.sg/statistics/frn/FRNAuctions.aspx>

## 4 Processing and Settlement of Transactions

### 4.1 By the Trade Date + one (1) Business Day –

- (a) Where the successful Eligible Counterparty is a MEPS+ participant:
  - i. where SGD cash is used to obtain USD funds, the successful Eligible Counterparty shall send the following confirmations to FD by SWIFT MT320 to MASGSGSG:
    - (a) a confirmation for the USD Principal to be borrowed by the successful Eligible Counterparty from the Authority; and
    - (b) a confirmation for the Effective SGD Amount to be loaned by the successful Eligible Counterparty to the Authority;
  - ii. where Category A1 Securities are used to obtain USD funds, the successful Eligible Counterparty shall send the following confirmations:
    - (a) a confirmation to FD by SWIFT MT320 to MASGSGSG for the USD Principal to be transferred to the successful Eligible Counterparty by FRBNY as instructed by the Authority; and
    - (b) a Repo confirmation by facsimile/email<sup>9</sup> for the Effective SGD Nominal Amount of Category A1 Securities to be transferred from the successful Eligible Counterparty to the Authority;
- (b) Where the successful Eligible Counterparty is a non-MEPS+ participant,
  - i. where SGD cash is used to obtain USD funds, the successful Eligible Counterparty shall send the following confirmations to FD by SWIFT MT320 to MASGSGSG (for a SWIFT member) or facsimile/email (for a non-SWIFT member):
    - (a) a confirmation for the USD Principal to be borrowed by the successful Eligible Counterparty from the Authority; and
    - (b) a confirmation for the Effective SGD Amount to be loaned by the successful Eligible Counterparty to the Authority;

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<sup>9</sup> Refer to Clause 25.2 of the Agreement for the facsimile number and email address.



ii. where Category A1 Securities are used to obtain USD funds, the successful Eligible Counterparty shall:

(a) send to FD a confirmation by SWIFT MT320 to MASGSGSG (for a SWIFT member) or by facsimile/email<sup>10</sup> (for a non-SWIFT member) for the USD Principal to be transferred to the Eligible Counterparty from the Authority;

(b) send to FD a Repo confirmation by facsimile/email<sup>11</sup> for the Effective SGD Nominal Amount of Category A1 Securities to be transferred from the Eligible Counterparty to the Authority; and

(c) if it requires the Authority to transfer the Category A1 Securities on its behalf, free-of-payment from its SGS-Reserve Account with the Authority, to the Authority's SGS-Trade Account, instruct FD via SWIFT MT199 (for a SWIFT member) or by way of a letter that is signed by the authorised signatories of the Eligible Counterparty (for a non-SWIFT member) ("**Instruction Letter**").

4.2 The cut-off time for the successful Eligible Counterparty to send the aforementioned confirmations, Repo confirmations, SWIFT MT199 and Instruction Letter to FD is 10.00am (Singapore Time) on the Trade Date + one (1) Business Day. Failure to send the correct confirmations, Repo confirmations, SWIFT MT199 or Instruction Letter prior to the cut-off time may result in cancellation of the Transactions by the Authority.

4.3 On the Value Date (i.e. Trade Date + two (2) Business Days) –

(a) In the case where SGD cash is used to obtain USD funds, the Effective SGD Amount would be automatically debited from the successful Eligible Counterparty's –

i. RTGS Account, where the successful Eligible Counterparty is a MEPS+ participant, or

ii. Current Account, where the successful Eligible Counterparty is a non-MEPS+ participant.

(b) In the case where Category A1 Securities are used to obtain USD funds –

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<sup>10</sup> Refer to Clause 25.2 of the Agreement for the facsimile number and email address.

<sup>11</sup> Refer to Clause 25.2 of the Agreement for the facsimile number and email address.

- i. Where the Eligible Counterparty is a MEPS+ participant, it shall ensure that the Effective SGD Nominal Amount of Category A1 Securities are transferred from the Eligible Counterparty's SGS-Trade Account with the Authority, to the Authority's SGS-Trade Account based on the SWIFT MT542 instruction to MASGSGSM.
- ii. Where the Eligible Counterparty is a non-MEPS+ participant, it shall ensure that the Effective SGD Nominal Amount of Category A1 Securities have been transferred free-of-payment –
  - (a) from the Eligible Counterparty's SGS-Reserve Account to the Authority's SGS-Trade Account based on the SWIFT MT199 or Instruction Letter to FD; or
  - (b) from the Eligible Counterparty's agent bank's SGS Account to the Authority's SGS-Trade Account free-of-payment, via SWIFT MT542 to MASGSGSM. The Eligible Counterparty shall also provide details of its agent bank to the Authority in the SSI(s) and the Repo confirmations exchanged with the Authority.

4.4 In the event the Authority does not receive (i) the Effective SGD Amount in the case where SGD cash is used to obtain USD funds under a Collateralised Loan, or (ii) the Effective SGD Nominal Amount of Category A1 Securities in the case where these Category A1 Securities are used to obtain USD funds under a Repo, by 4.00pm (Singapore Time) on the Value Date, the successful Eligible Counterparty shall be deemed not to have entered into the Collateralised Loan or Repo, as the case may be, and the Transaction shall be deemed to have been terminated. The successful Eligible Counterparty shall also pay a fee to the Authority for the failed Transaction as stipulated in Clause 13.2 of the Agreement.

4.5 After FD has confirmed the successful receipt of the Effective SGD Amount in the case where SGD cash is used to obtain USD funds, or the Effective SGD Nominal Amount of Category A1 Securities in the case where these Category A1 Securities are used to obtain USD funds, the Authority will instruct the FRBNY to transfer the USD Principal into the successful Eligible Counterparty's USD account, in accordance with the pre-established USD SSI(s), on the Value Date.

4.6 On the Maturity Date (M), the successful Eligible Counterparty shall transfer the USD Principal and the USD Interest to the Authority's USD account with the FRBNY by 11.00am (New York Time) for settlement of the closing leg of the Transaction. In the event of a late repayment of the Closing Leg Settlement

Amount, the successful Eligible Counterparty shall pay a fee to the Authority as stipulated in Clause 13.4 of the Agreement.

- 4.7 One (1) Business Day after the Maturity Date (M+1), and provided that the Authority has received prior confirmation from the FRBNY that the Closing Leg Settlement Amount have been credited into the Authority's USD account with the FRBNY, the Authority shall transfer by 12.00pm (Singapore Time):
- (a) the Effective SGD Amount to the successful Eligible Counterparty's RTGS Account (in the case where the successful Eligible Counterparty is a MEPS+ participant) or to the successful Eligible Counterparty's Current Account (in the case where the successful Eligible Counterparty is a non-MEPS+ participant); and/or
  - (b) the Effective SGD Nominal Amount of Category A1 Securities to –
    - i. the successful Eligible Counterparty's SGS-Trade Account, where the successful Eligible Counterparty is a MEPS+ participant;
    - ii. the successful Eligible Counterparty's SGS-Reserve Account, where the successful Eligible Counterparty is a non-MEPS+ participant; or
    - iii. the SGS Account of the successful Eligible Counterparty's agent bank in accordance with the pre-established SSI(s), where the successful Eligible Counterparty is a non-MEPS+ participant and had instructed its agent bank to transfer the Category A1 Securities from the agent bank's SGS Account to MAS' SGS-Trade Account.