

MAS 649

NOTICE TO BANKS

BANKING ACT, CAP 19

MINIMUM LIQUID ASSETS (“MLA”) AND LIQUIDITY COVERAGE RATIO (“LCR”)

- 1 This Notice is issued pursuant to sections 36 and 38 of the Banking Act (Cap. 19) (“the Act”) and applies to all banks in Singapore. Except where specifically mentioned in the paragraph, the requirements set out in this Notice are issued under section 38.
- 2 A bank incorporated and headquartered in Singapore or a bank which has been notified by the Authority that it is a domestic systemically important bank¹ (“D-SIB”) need only comply with Part II – LCR of this Notice.
- 3 A bank which does not fall within paragraph 2 above may, upon giving prior written notice of at least one month to the Authority, choose to comply with either Part I - MLA or Part II - LCR of this Notice, and the requirements in the relevant part would apply accordingly. While a bank which has chosen to comply with Part I-MLA of this Notice may be choose to comply with Part II- LCR of this Notice subsequently upon giving the requisite notice to the Authority, a bank which has chosen to comply with Part II – LCR of this Notice will have to write in to the Authority for approval to comply with Part I – MLA of this Notice subsequently. The Authority will not ordinarily grant such an approval except in exceptional circumstances.
- 4 A bank which has to comply with Part II of this Notice may, with the Authority’s approval comply with the requirements set out in this Notice on a banking group or country-level group basis. The Authority will subject the bank and the entities which are in the country-level group to an assessment before granting any approval for the bank to comply with this Notice on a country-level group basis.
- 5 The expressions used in this Notice shall, except where expressly defined in this Notice or where the context otherwise requires, have the same meanings as in the Act.
- 5A A bank should ensure its liquidity risk management is sound and commensurate with the size, nature and complexity of its activities, including meeting the guidelines in Appendix 8.

¹ More information on the D-SIB framework can be found at <http://www.mas.gov.sg/~media/MAS/About%20MAS/Monographs%20and%20information%20papers/Apr%202015%20MAS%20Framework%20for%20Impact%20and%20Risk%20Assessment%20of%20Financial%20Institutions.pdf>.

PART I – MLA

Definitions

6 In Part I of this Notice—

“bills of exchange” has the same meaning as in section 3 of the Bills of Exchange Act (Cap. 23);

“business day” means any calendar day on which a bank carries on business;

“computation day” means the business day on which the bank computes the minimum amount of liquid assets that the bank has to maintain on the relevant maintenance day;

“intragroup banking entities” in relation to a bank, means the bank’s head office; branches of the bank’s head office; and bank subsidiaries of the bank’s head office which are not licensed in Singapore.

“maintenance day”, in relation to any computation day, means the day occurring two business days from that computation day;

“MAS Bills” means any debt securities issued by the Monetary Authority of Singapore under the Monetary Authority of Singapore Act (Cap. 186);

“Qualifying Liabilities” means the aggregate of:

- a) all liabilities of the bank² denominated in the relevant currency or currencies, as the case may be, due to non-bank customers, computed on a gross basis;
- b) all liabilities of the bank denominated in the relevant currency or currencies, as the case may be, due to the Authority within one month from the computation day, computed on a net basis (i.e. after the deduction of all claims denominated in the relevant currency or currencies, as the case may be, by the bank on the Authority maturing within one month from the computation day), and where this is a net asset, the net asset amount may be deducted from Qualifying Liabilities;
- c) all liabilities of the bank denominated in the relevant currency or currencies as the case may be, due to other banks (whether licensed in Singapore or not, including intragroup banking entities) within one month from the computation day, computed on a net basis (i.e. after the deduction of all claims denominated in the relevant currency or currencies, as the case may be, by the bank on the other banks maturing within one month from the computation day), and where this is a net asset, the net

² For avoidance of doubt, this excludes any contingent liability of the bank.

asset amount shall not be deducted from Qualifying Liabilities and shall be treated as zero;

- d) 15% of all undrawn commitments denominated in the relevant currency or currencies, as the case may be³;
- e) all liabilities arising from the issue of bills of exchange, other than a bill of exchange which satisfies the requirements set out in Appendix 1; and
- f) all liabilities of the bank arising from the operation of any stored value facility as defined in section 2(1) of the Payment Systems (Oversight) Act (Cap 222A);

but does not include any liability of the bank arising from—

- a) any funds received through repurchase agreements of Singapore Government Securities or MAS Bills;
- b) any funds received through currency, interest rate and foreign exchange swaps;
- c) any issue of subordinated debt, the terms of which comply with the criteria for the treatment of the liabilities as capital in the computation of the bank's capital adequacy ratio under section 10 of the Act, whether or not the entire amount of such liabilities is in fact treated in such computation as capital; and
- d) any funds raised through the discounting of any bill of exchange which satisfies the requirements set out in Appendix 1, with other banks or finance companies in Singapore;

“significant currency” in relation to a bank, means a currency where the aggregate liabilities of the bank denominated in that currency as at the end of the month amounts to 5% or more of the bank's total liabilities;

“Singapore Government Securities” means any security or equivalent instrument issued under the Government Securities Act (Cap 121A) and any Treasury bill or equivalent instrument issued under the Local Treasury Bills Act (Cap. 167);

“Tier-1 liquid asset” means –

³ For the purpose of the Singapore Dollar MLA requirement, where the undrawn commitment is a multi-currency facility involving the Singapore Dollars as a component currency, a bank shall include the entire facility amount as its undrawn commitment for its computation of its Singapore Dollar Qualifying Liabilities. However, if there is a sub-limit for the Singapore Dollars in the facility, the bank may use the sub-limit amount for its computation of its Singapore Dollar Qualifying Liabilities.

- a) notes and coins which are legal tender in Singapore other than assets maintained and held for the purposes of section 40 of the Act;
- b) balances with the Authority other than cash balances maintained for the purposes of section 39 of the Act and assets maintained and held for the purposes of section 40;
- c) for the purposes of the Singapore Dollar MLA requirement, the assets listed in paragraph 7(a), 7(b), 7(c), 7(d) of this Notice; or
- d) for the purposes of the all currency MLA requirement, the assets listed in paragraph 7(a), 7(b), 7(c), 7(d) and 7(e) of this Notice.

“undrawn commitment” means any arrangement of a bank with any person (including other branches of the bank) which would pose liquidity risk to the bank in the event the person or a third party in whose favour the arrangement is made, utilises or calls upon the commitment, such as any unutilised portion of a guarantee, any standby letter of credit, any warranty, any standby credit facility, any forward asset purchase, any underwriting arrangements, any credit protection sold by the bank and any liquidity facilities granted by the bank, but does not include any arrangement where the drawdown or utilisation is subject to the approval of the bank at the point of drawdown, and the bank has the unconditional right to refuse drawdown.

Assets approved as “liquid assets”

- 7 For the purposes of section 38(9) of the Act, the following assets are approved by the Authority as liquid assets:
- a) notes and coins which are legal tender in Singapore, of which are of any currency, including notes and coins which are customary tender in Singapore;
 - b) any Singapore Government Securities (“SGS”) and any SGS held under a reverse repurchase agreement;
 - c) any sukuk issued by Singapore Sukuk Pte Ltd;
 - d) any MAS Bills and any MAS Bills held under a reverse repurchase agreement;
 - e) any debt securities or sukuk⁴ denominated in the relevant currency or currencies, as the case may be, not being a sukuk which is a liquid asset by virtue of subparagraph (c), that is issued by a sovereign or a central bank and assigned a credit

⁴ For the avoidance of doubt, only sukuk which demonstrates characteristics similar to a debt security are approved by the Authority as liquid assets.

rating of at least AA- by Fitch, Inc, or Standard and Poor's Corporation or a credit rating of at least Aa3 by Moody's Investor Services, and includes any such debt securities or sukuk held under a reverse repurchase agreement;

- f) any debt securities or sukuk denominated in the relevant currency or currencies, not being a sukuk which is a liquid asset by virtue of sub-paragraph (c), and not being a debt security or sukuk defined in sub-paragraph (e), that are —
- i) issued by a statutory board in Singapore, with a minimum issue size of SGD 200 million, at 90% of its value;
 - ii) with a minimum issue size of SGD 200 million which satisfies either the long term issue or short term issue credit ratings and at the relevant value set out in Appendix 3;
 - iii) issued by a sovereign, a supranational (i.e. an entity that is both of a governmental and international character), or a sovereign-guaranteed company (where the sovereign or government is not the Singapore Government) and the debt securities or sukuk are assigned a credit rating of AAA by Fitch, Inc, or Standard and Poor's Corporation or a credit rating of Aaa by Moody's Investor Services; or
 - iv) issued by a AAA-rated Public Sector Entity ("PSE")⁵ and accorded a risk weight of zero under MAS Notice 637,

and includes any such debt securities or sukuk held under a reverse repurchase agreement⁶; or

- g) any bill of exchange which satisfies the requirements set out in Appendix 2;

provided always that —

⁵ PSE, or Public Sector Entity, refers to –

- a) a regional government or local authority able to exercise one or more functions of the central government at a regional or local level;
- b) an administrative body or non-commercial undertaking responsible to, or owned by, a central government, regional government or local authority, which performs regulatory or non-commercial functions;
- c) a statutory board in Singapore (other than MAS); or
- d) a town council in Singapore established pursuant to the Town Councils Act (Cap. 392A).

⁶ For the avoidance of doubt, where an issue of such debt securities or sukuk is partially redeemed such that the outstanding issue size falls below SGD200m, those debt securities or sukuk would no longer be approved as liquid assets.

- i) the asset shall be free from any prior encumbrances;
- ii) where the asset is a debt security or sukuk, it shall not be a convertible debt security or sukuk and if the bank holds more than 20% of the total market of a particular issue of debt securities or sukuk (including issues from different tranches), the bank shall only treat as liquid assets, 50% of the value of those debt securities or sukuk; and
- iii) the asset does not arise or result from any contractual or other arrangements with, or investments in, a counterparty related to the bank⁷.

Valuation of Liquid Assets

- 8 When computing the minimum amount of liquid assets to be held by it on any maintenance day, a bank shall use –
- a) in the case of its bills of exchange, the book value of those bills of exchange; and
 - b) in the case of its liquid assets (other than bills of exchange), the marked-to-market value of those liquid assets as of the computation day to which that maintenance day relates.

MLA Framework

- 9 Every bank shall hold, at all times:
- a) liquid assets denominated in any currency amounting to no less than 16% of the value of its Qualifying Liabilities denominated in all currencies (“All currency MLA requirement”); and
 - b) liquid assets denominated in Singapore Dollars amounting to no less than 16% of the value of its Qualifying Liabilities denominated in Singapore Dollars (“Singapore Dollar MLA requirement”)
- 10 Every business day shall be a computation day. On a maintenance day, a bank shall hold the Singapore Dollar MLA requirement and the All Currency MLA requirement, respectively, that was computed on the relevant computation day. Where a day is not a business day, a bank shall hold for that day, the Singapore Dollar MLA requirement and the All Currency MLA requirement of the immediately preceding maintenance day

⁷ A counterparty related to a bank includes a related corporation or associate of the bank, an entity which is treated as part of the bank's group of entities according to Accounting Standards and any subsidiary or associate of any holding company of the Bank. “Holding company” and “subsidiary” have the same meaning as in section 5 of the Companies Act. “[A]ssociate” has the same meaning as in the Fifth Schedule of the Banking Act, save that any reference to “substantial shareholder” shall be replaced by reference to “corporation”. “Accounting Standards” have the same meaning as in section 4(1) of the Companies Act.

which is a business day. Appendix 4 sets out the computation and maintenance schedules for a bank determining its MLA requirements.

Minimum Amount of Tier 1 assets

- 11 A bank shall hold, at all times, at least 50% of its liquid assets held for the purposes of section 38 (9) (“MLA”) in Tier-1 liquid assets.

Utilisation of liquid assets

- 12 A bank shall notify the Authority in writing of its intent to utilise its MLA in a liquidity stress situation prior to the utilisation. The bank shall ensure that the notification is signed by its chief executive, chief financial officer or any equivalent senior management.

- 13 A bank shall—

- a) provide its justification for the utilisation of MLA;
- b) set out the cause of the liquidity stress situation and to provide supporting documents, where available; and
- c) detail the steps which it has taken and is going to take to resolve the liquidity stress situation,

to the Authority within one business day after the utilisation of its liquid assets.

- 14 A bank shall also keep the Authority informed of material developments during the liquidity stress situation.

Submission of liquidity returns

- 15 A bank shall prepare the appropriate liquidity returns set out at Appendix 5 as at the last calendar day of each month.

- 16 A bank shall submit all returns prepared in accordance with paragraph 15 to the Authority electronically through MASNET not later than 10 calendar days after the last day of each month.

PART II – LCR

Definitions

17 In Part II of this Notice—

“30-day LCR horizon” means the 30-day period following the day on which the LCR is computed;

“banking group” refers to the bank and its banking group entities;

“banking group entity” means any subsidiary or any other entity which is treated as part of a bank's group of entities according to Accounting Standards as defined in section 4(1) of the Companies Act (Cap. 50);

“cash management activity” in relation to a bank, means the remittance of payments, collection and aggregation of funds, payroll administration, and control over the disbursement of funds in the context of a relationship where the bank provides products and services to a customer to manage his or its cash flows, assets and liabilities, and conducts financial transactions necessary to the customer's affairs or operations;

“clearing activity” in relation to a bank, means the transmission, reconciliation and confirmation of payment orders; daylight overdraft, overnight financing and maintenance of post-settlement balances; and determination of intra-day and final settlement positions in the context of a relationship where the bank provides a service that enables customers to transfer funds (or securities) through direct participants in domestic settlement systems to final recipient;

“country-level group” in relation to a bank, refers to a group comprising any combination of the bank (first-mentioned bank), any other bank in Singapore or any merchant bank belonging to the same banking group as the first-mentioned bank approved by MAS to be part of the group;

“custody activity” in relation to a bank, means the settlement of securities transactions, the transfer of contractual payments, the processing of collateral, the provision of custody related cash management services, the receipt of dividends and other income, client subscriptions and redemptions, asset and corporate trust servicing, treasury, escrow, funds transfer, stock transfer and agency services, including payment and settlement services (excluding correspondent banking), and depository receipts; in the context of a relationship where the bank provides services for the safekeeping, reporting, processing of assets or the facilitation of the operational and administrative elements of related activities on behalf of customers in the process of their transacting and retaining financial assets;

“external credit assessment institution” or “ECAI” has the same definition as in MAS Notice 637;

“high quality liquid assets” or “HQLA” means any asset (a) approved under section 38(9) as “liquid assets” as listed in paragraph 21, which satisfies the requirements set out in paragraph 22 of this Notice to be included as high quality liquid assets for the purposes of computing the LCR and (b) which is available on the bank’s balance sheet as at the end of the day immediately preceding the 30-day LCR horizon;

“Level 1 HQLA” means any HQLA listed in paragraph 21(a), 21(b), 21(c), 21(d), 21(g), 21(h) or 21(n) of this Notice which satisfies the requirements set out in paragraph 22 of this Notice;

“Level 2A HQLA” means any HQLA listed in paragraph 21(e), 21(i) or 21(o) of this Notice which satisfies the requirements set out in paragraph 22 of this Notice;

“Level 2B(I) HQLA” means any HQLA listed in paragraph 21(j) or 21(o) of this Notice which satisfies the requirements set out in paragraph 22 of this Notice;

“Level 2B(II) HQLA” means any HQLA listed in paragraph 21(f), 21(k), 21(l), 21(m) and 21(o) of this Notice which satisfies the requirements set out in paragraph 22 of this Notice;

“Liquidity Coverage Ratio” or “LCR” refers to a ratio which is computed at the end of each day as follows:

$$\text{LCR} = \frac{\text{HQLA}}{\text{Total net cash outflows}} \times 100\%$$

“small business customer” means any customer that enters into a transaction with a bank with total exposures of less than S\$2 million (on a consolidated basis where applicable) and are managed by the bank as retail exposures⁸; and

“significant currency” in relation to a bank, means a currency where the aggregate liabilities of the bank denominated in that currency as at the end of the month amounts to 5% or more of the bank’s total liabilities.

⁸ “Small business customers” are defined in line with the definition of loans extended to small businesses in footnote 124 of the MAS Notice 637 that are managed as retail exposures and are generally considered as having similar liquidity risk characteristics to retail accounts provided the total aggregated funding raised from one small business customer is less than S\$2 million (on a consolidated basis where applicable). Where a bank does not have any exposure to a small business customer that would enable it to use the definition under footnote 124 of the MAS Notice 637, the bank may include such a deposit in this category provided that the total aggregate funding raised from the customer is less than S\$2 million (on a consolidated basis where applicable) and the deposit is managed as a retail deposit. This means that the bank treats such deposits in its internal risk management systems consistently over time and in the same manner as other retail deposits, and that the deposits are not individually managed in a way comparable to larger corporate deposits.

LCR Framework

18 A bank incorporated and headquartered in Singapore shall maintain at all times, a Singapore Dollar LCR (“Singapore Dollar LCR requirement”) of at least 100% and an all currency LCR (“all currency LCR requirement”) of at least 60% by 1 January 2015, with the all currency LCR requirement increasing by 10% each year to 100% by 2019. Table 1 shows the implementation timetable. Pursuant to section 36 of the Act, the bank shall comply with the LCR requirements on a consolidated (“Group”) level, which consolidates the assets and liabilities of its banking group entities, after excluding the following banking group entities:

- a) any investment in an insurance subsidiary;
- b) any investment in any non-banking group entity if such non-consolidation is permitted under the Accounting Standards as defined in section 4(1) of the Companies Act (Cap. 50)

Table 1: Table for all currency LCR for a bank incorporated and headquartered in Singapore

From	1 January 2015	1 January 2016	1 January 2017	1 January 2018	1 January 2019
Minimum LCR requirement	60%	70%	80%	90%	100%

- 19 Any other bank notified by the Authority that it is D-SIB or a bank that elects to comply with the LCR framework, shall maintain at all times, a Singapore Dollar LCR requirement of 100% and an all currency LCR requirement of 50% by 1 January 2016.
- 20 A bank shall only use liquid assets denominated in Singapore Dollars to fulfil its Singapore Dollar LCR requirement. For avoidance of doubt, the total net cash outflows for the Singapore Dollar LCR requirement shall only include total net cash outflows denominated in Singapore Dollars.

Assets approved as “Liquid Assets”

21 For the purposes of section 38(9) of the Act, the following assets are approved by the Authority as “liquid assets”:

- a) notes and coins in the relevant currency or currencies, as the case may be, including notes and coins which are customary tender in Singapore;
- b) reserves held with MAS and other central banks, to the extent that MAS and the central banks’ policies allow them to be drawn down in times of stress⁹;
- c) any sukuk issued by Singapore Sukuk Pte Ltd;
- d) any marketable security representing a claim on or guaranteed by a sovereign, a central bank, a PSE⁵, the Bank for International Settlements, the International Monetary Fund, the European Central Bank, European Community or multilateral development bank, which satisfies the following conditions:
 - i) it is assigned a 0% risk-weight under MAS Notice 637;
 - ii) it is traded in large, deep and active repo or cash markets characterised by a low level of concentration;
 - iii) it has a proven record as a reliable source of liquidity in the markets (repo or sale) even during stressed market conditions;
 - iv) it is not an obligation of a financial institution or any of its related corporations;
- e) any marketable security representing a claim on or guaranteed by, a sovereign, a central bank, a PSE or a multilateral development bank which satisfies the following conditions:
 - i) it is assigned a 20% risk weight under MAS Notice 637;
 - ii) it is traded in large, deep and active repo or cash markets characterised by a low level of concentration;

⁹ In this context, reserves would include banks’ overnight deposits with the central bank, and term deposits with the central bank that: (i) are explicitly and contractually repayable on notice from the depositing bank; or (ii) that constitute a loan against which the bank can borrow on a term basis or on an overnight but automatically renewable basis (only where the bank has an existing deposit with the relevant central bank). Other term deposits with central banks are not eligible as liquid assets; however, if the term expires within 30 days, the term deposit could be considered as an inflow per paragraph 100.

- iii) it has a proven record as a reliable source of liquidity in the markets (repo or sale) even during stressed market conditions, i.e. a maximum price decline or increase in haircut not exceeding 10 percentage points over a 30-day period of significant liquidity stress;
 - iv) it is not an obligation of a financial institution or any of its related corporations;
- f) any marketable security representing a claim on or guaranteed by a sovereign or central bank which satisfies the following conditions:
 - i) it has a long-term credit rating from a recognised ECAI between BBB+ and BBB- or in the absence of a long term rating, a short-term rating equivalent in quality to the long-term rating; or does not have a credit assessment by a recognised ECAI and is internally rated as having a probability of default (“PD”) corresponding to a credit rating of between BBB+ and BBB-;
 - ii) it is traded in large, deep and active repo or cash markets characterised by a low level of concentration;
 - iii) it has a proven record as a reliable source of liquidity in the markets (repo or sale) even during stressed market conditions, i.e. a maximum price decline or increase in haircut not exceeding 20 percentage points over a 30-day period of significant liquidity stress;
 - iv) it is not an obligation of a financial institution or any of its related corporations;
- g) where a sovereign has a non-0% risk weight as determined in accordance with MAS Notice 637, any sovereign or central bank debt security issued in domestic currencies by the sovereign or its central bank
 - i) if the sovereign or central bank is from a bank’s home country; or
 - ii) if the sovereign or central bank is from a host jurisdiction where a bank has a branch or subsidiary and the bank or its subsidiary takes liquidity risk in that jurisdiction;
- h) where the sovereign has a non-0% risk weight as determined in accordance with MAS Notice 637, any sovereign or central bank debt security issued in foreign currencies by the sovereign or its central bank
 - i) if the sovereign or central bank is from a bank’s home country; or

- ii) if the sovereign or central bank is from a host jurisdiction where a bank has a branch or subsidiary and the bank or its subsidiary takes liquidity risk in that jurisdiction;

up to the amount of a bank's stressed net cash outflows in that specific foreign currency arising from the bank or its subsidiary's operations in the jurisdiction where the bank has a branch or subsidiary;

- i) any corporate debt security, covered bond or sukuk, which satisfies the following conditions:
 - i) in the case of a corporate debt security: it is not issued by a financial institution or any of its related corporations;
 - ii) in the case of a covered bond: it is not issued by the bank itself or any of its related corporations;
 - iii) it has a long-term credit rating from a recognised ECAI of at least AA- or in the absence of a long term rating, a short-term rating equivalent in quality to the long-term rating^{9A}; or does not have a credit assessment by a recognised ECAI but is internally rated as having a PD corresponding to a credit rating of at least AA-;
 - iv) it is traded in large, deep and active repo or cash markets characterised by a low level of concentration;
 - v) it has a proven record as a reliable source of liquidity in the markets (repo or sale) even during stressed market conditions, i.e. a maximum price decline or increase in haircut not exceeding 10 percentage points over a 30-day period of significant liquidity stress;
- j) any corporate debt security or sukuk, which satisfies all of the following conditions:
 - i) it is not issued by a financial institution or any of its related corporations;
 - ii) it has a long-term credit rating from a recognised ECAI between A+ and A- or in the absence of a long term rating, a short-term rating

^{9A} In the event of split ratings, the applicable rating shall be determined according to the method used in Basel II's standardised approach for credit risk as prescribed in Paragraph 7.3.4 of MAS Notice 637. Local rating scales (rather than international ratings) of a recognized ECAI under Paragraph 7.3.53 of MAS Notice 637 can be recognised if corporate debt securities or covered bonds are held by a bank for local currency liquidity needs arising from its operations in that local jurisdiction. This also applies to Paragraphs 21(j) and 21(k).

equivalent in quality to the long-term rating; or does not have a credit assessment by a recognised ECAI and is internally rated as having a PD corresponding to a credit rating of between A+ and A-;

- iii) it is traded in large, deep and active repo or cash markets characterised by a low level of concentration;
 - iv) it has a proven record as a reliable source of liquidity in the markets (repo or sale) even during stressed market conditions, i.e. a maximum price decline or increase in haircut not exceeding 20 percentage points over a 30-day period of significant liquidity stress;
- k) any corporate debt security or sukuk, which satisfies all of the following conditions:
- i) it is not issued by a financial institution or any of its related corporations;
 - ii) it has a long-term credit rating from a recognised ECAI between BBB+ and BBB- or in the absence of a long term rating, a short-term rating equivalent in quality to the long-term rating; or does not have a credit assessment by a recognised ECAI and is internally rated as having a PD corresponding to a credit rating of between BBB+ and BBB-;
 - iii) it is traded in large, deep and active repo or cash markets characterised by a low level of concentration;
 - iv) it has a proven record as a reliable source of liquidity in the markets (repo or sale) even during stressed market conditions, i.e. a maximum price decline or increase in haircut not exceeding 20 percentage points over a 30-day period of significant liquidity stress;
- l) any residential mortgage-backed security (“RMBS”) which satisfies the following requirements:
- i) it is not issued by, and the underlying assets have not been originated by, the bank itself or any of its related corporations;
 - ii) it has a long-term credit rating from a recognised ECAI of AA or higher, or in the absence of a long term rating, a short-term rating equivalent in quality to the long-term rating;
 - iii) it is traded in large, deep and active repo or cash markets characterised by a low level of concentration;

- iv) it has a proven record as a reliable source of liquidity in the markets (repo or sale even during stressed market conditions, i.e. a maximum price decline or increase in haircut not exceeding 20 percentage points over a 30-day period of significant liquidity stress;
 - v) the underlying asset pool is restricted to residential mortgages and does not contain structured products;
 - vi) the underlying residential mortgages are “full recourse” loans (i.e. in the case of foreclosure the mortgage owner remains liable for any shortfall in sales proceeds from the property) and have a maximum weighted average¹⁰ loan-to-value ratio (LTV) of 80% at issuance; and
 - vii) the securitisations are subject to risk retention laws and regulations which require issuers to retain an interest in the assets they securitise.
- m) any ordinary shares, excluding preference shares and treasury shares, which satisfy all of the following requirements:
- i) the shares are not issued by a financial institution or any of its related corporations;
 - ii) the shares are exchange traded and centrally cleared;
 - iii) the shares are a constituent of:
 - (A) the FTSE Straits Times Index (“STI”) or the MSCI Singapore Free Index;
 - (B) if the stock is held in a jurisdiction outside of Singapore to meet liquidity risks in that jurisdiction, an index that the banking supervisor of that jurisdiction recognises for purposes of including the equities as Level 2B HQLA under the applicable regulatory policy; or

¹⁰ Weighted average LTV is computed as follows:

$$\text{weighted average LTV} = \frac{\text{mortgage amount}_1 \times \text{LTV}_1 + \text{mortgage amount}_2 \times \text{LTV}_2 + \dots + \text{mortgage amount}_n \times \text{LTV}_n}{\text{mortgage amount}_1 + \text{mortgage amount}_2 + \dots + \text{mortgage amount}_n}$$

Where n is the number of residential mortgages in the RMBS.

- (C) any other index for which a bank can demonstrate to the satisfaction of the Authority that the stock is as liquid and readily marketable as equities traded on the indices in (A).
 - iv) denominated in the domestic currency of a bank's home jurisdiction or in the currency of the jurisdiction where a bank's liquidity risk is taken;
 - v) traded in large, deep and active repo or cash markets characterised by a low level of concentration; and
 - vi) have a proven record as a reliable source of liquidity in the markets (repo or sale) even during stressed market conditions, i.e. a maximum price decline or increase in haircut not exceeding 40 percentage points over a 30-day period of significant liquidity stress.
- n) any liquid assets recognized as alternative liquid assets in jurisdictions that implement the Alternative Liquidity Approach (ALA)¹¹ and which the banking supervisor of that jurisdiction recognises for purposes of including the liquid assets as Level 1 HQLA, subject to the requirements specified in paragraph 111.
 - o) any liquid assets recognized as alternative liquid assets in jurisdictions that implement the Alternative Liquidity Approach (ALA)¹¹ and which the banking supervisor of that jurisdiction recognises for purposes of including the liquid assets as Level 2 HQLA, subject to the requirements specified in paragraph 111.

Operational requirements

- 22 A bank shall treat a liquid asset as HQLA only if the liquid asset complies with the following operational requirements:
- a) the liquid asset is unencumbered¹² and shall not be pledged whether explicitly or implicitly, to secure, collateralise or credit-enhance any transaction, nor be designated to cover operational costs (such as rents and salaries);
 - b) the liquid asset is to be under the control of the function charged with managing the liquidity of the bank (e.g. the treasurer). In this regard, an asset would only be considered to be under the control of the function if the asset is maintained in a separate pool managed by the function with the sole intent for use as a source of

¹¹ Please refer to paragraphs 55-67 of the "Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring Tools".

¹² "Unencumbered" means free of legal, regulatory, contractual or other restrictions on the ability of the bank to liquidate, sell, transfer or assign the assets.

contingent funds or if the bank is able to demonstrate that the function has the authority and legal and operational capability to monetise the asset at any point in the 30-day LCR horizon and that the proceeds of doing so are available to the function throughout the 30-day LCR horizon without directly conflicting with a stated business or risk management strategy^{12A};

- c) any liquid asset received in reverse repo and securities financing transactions and which has not been rehypothecated and is legally and contractually available for the bank's use (i.e. where the bank can sell or deal with such assets);
- d) any liquid asset which has been deposited with, or pledged to, the central bank or a PSE but which has not been used to generate liquidity may be included as HQLA;
- e) any liquid asset held to meet statutory liquidity requirements at the bank, branch or subsidiary level (where applicable) may only be included as HQLA at the consolidated level only if the expected cash flows as measured by the bank's branch or subsidiary are also reflected in the consolidated LCR. Any surplus of HQLA held at the bank can only be included in the consolidated stock if those HQLA would also be freely available to the consolidated (parent) group in times of stress;
- f) any asset received as collateral for derivatives transactions that are not segregated and are legally available and not yet re-hypothecated may be included as HQLA provided that the bank records an appropriate outflow for the associated risks as set out in paragraph 64;
- g) the portion of liquid assets received as part of a basket of collateral as security for a transaction may be included as HQLA to the extent that it can be monetised separately;
- h) the unused portion of liquid assets which are pledged as collateral, as at the end of the day may be included as HQLA. If a bank is unable to determine which assets are unused, it shall assume that the assets are encumbered in the following order: Level 1 HQLA, Level 2A HQLA, Level 2B(I) HQLA, Level 2B(II) HQLA, non-HQLA eligible assets; and
- i) any liquid asset received as part of a securities borrowing transaction where the liquid assets can be returned or recalled during the next 30 days shall not be included as HQLA.

^{12A} For example, a bank shall exclude from the stock of HQLA those assets where there are impediments to sale, such as large fire-sale discounts which would cause it to breach minimum solvency requirements, or requirements to hold such assets, including, but not limited to, statutory minimum inventory requirements for market making.

Guidelines of HQLA

- 23 A bank should periodically monetise a representative proportion of the assets in the stock through repo or outright sale, in order to test its access to the market, the effectiveness of its processes for monetisation, the availability of the assets, and to minimise the risk of negative signalling during a period of actual stress;

Composition of HQLA

- 24 HQLA shall comprise of Level 1 or Level 2 HQLA.
- 25 There is no limit or haircut applicable on Level 1 HQLA for the purposes of determining a bank's LCR¹³.
- 26 Level 2 HQLA comprises of Level 2A and Level 2B HQLA. Level 2B HQLA comprises of Level 2B(I) and Level 2B(II) HQLA. Level 2B(II), Level 2B and Level 2 HQLA shall comprise a maximum of 5%, 15% and 40% of total HQLA respectively.
- 27 Level 2A HQLA are subject to a 15% haircut on the current market value of each Level 2A HQLA. Level 2B HQLA are subject to a 25% haircut for RMBS, 50% haircut for corporate debt securities (including commercial paper) and sovereign debt securities, and 50% haircut on ordinary shares. Where a liquid asset can be categorised into different categories of HQLA, a bank shall categorise the liquid asset into the HQLA category with the highest haircut except where expressly provided, or where the bank has obtained the approval of the Authority to do otherwise. A bank may apply to the Authority for such approval with evidence supporting the less conservative treatment.
- 28 A bank shall calculate the cap on Level 2 HQLA and Level 2B HQLA after the application of the required haircuts, and after taking into account the unwinding of short-term securities financing transactions and collateral swap transaction maturing within 30 calendar days that involve the exchange of HQLA. In this context, short term transactions are transactions with a maturity date up to and including 30 calendar days.
- 29 If a liquid asset no longer qualifies as HQLA, (e.g. due to rating downgrade), a bank is permitted to keep such liquid assets as HQLA for an additional 30 calendar days. This would allow the bank additional time to adjust its HQLA as needed or replace the liquid asset.
- 30 The Authority may vary the types of HQLA when deemed appropriate. The formula for the computation of HQLA is found in Appendix 6.

¹³ For the purposes of calculating the LCR, Level 1 HQLA shall be measured at an amount no greater than their current market value.

Total net cash outflows

31 Total net cash outflows is defined as total expected cash outflows minus:

- a) total expected cash inflows; or
- b) 75% of total expected cash outflows,

whichever is the lower. Transactions between entities in a country-level group shall not be included for the purposes of computing total net cash outflows.

32 Except where otherwise stated, expected cash outflows and inflows are computed by multiplying the outflow and inflow rates respectively to the outstanding balances of the outflow and inflow items due within 30 days from the computation date. Appendix 7 provides a summary of the outflow and inflow rates that are applied to each category of cash outflows and cash inflows.

33 A bank shall not double count assets and liabilities in the computation of the LCR. If a liquid asset is included as part of HQLA, the cash inflows associated with that liquid asset cannot be counted as part of the total expected cash inflows.

34 Where transactions can be categorised into multiple categories with different inflow or outflow factors, a bank shall adopt the higher outflow factor or lower inflow factor, as the case may be, except where expressly provided otherwise or where the bank has obtained the approval of the Authority to do otherwise.

Cash outflows

(A) Retail deposit cash outflows

35 Retail deposits are deposits placed with a bank by a natural person. Deposits from legal entities, sole proprietorships or partnerships are captured in the wholesale funding categories. Retail deposits that may be included as part of the LCR computation include demand deposits and term deposits, unless otherwise excluded under the criteria set out in paragraphs 40 and 41.

36 Retail deposits are divided into “stable” and “less stable” as described below.

(I) Stable deposits

37 Stable deposits are those which are fully insured¹⁴ by the Singapore Deposit Insurance Corporation Limited (SDIC)¹⁵, or an effective government deposit insurance scheme¹⁶, where:

- a) The depositors have established relationships with the bank such that the deposits highly unlikely to be withdrawn (“established relationships”); or
- b) The deposits are in transactional accounts (e.g. account where salaries are automatically credited).

38 Where a bank has a branch or subsidiary in other jurisdictions carrying on banking business, and has stable deposits that are fully insured by other effective government deposit insurance schemes, the bank shall follow the relevant treatment adopted in the host jurisdiction where the branch or subsidiary operates.

(II) Less stable deposits

39 Less stable deposits are deposits that are not stable deposits.

(III) Retail term deposits

40 A bank shall exclude the cash outflow from a retail term deposit with a residual maturity or withdrawal notice period of greater than 30 days from the total expected cash outflows, if the depositor has no legal right to withdraw the deposit within the 30-day LCR horizon, or if early withdrawal results in a significant penalty that is materially greater than the loss of interest.

¹⁴ Fully insured means that the deposit amount, up to the deposit insurance limit, will be fully paid out by an effective deposit insurance scheme. Deposit balances up to the deposit insurance limit can be treated as “fully insured” or “stable” even if a depositor has a balance in excess of the deposit insurance limit. However, any amount in excess of the deposit insurance limit is to be treated as “less stable”.

¹⁵ The current cash outflow rate for stable deposits fully insured by the Singapore Deposit Insurance Corporation Limited (SDIC) is 5%. This may change to 3% when the insurance scheme meets the additional criteria of (i) the insurance scheme is based on a system of prefunding via the periodic collection of levies on banks with insured deposits and ii) the scheme has adequate means of ensuring ready access to additional funding in the event of a large call on its reserves, e.g. an explicit and legally binding guarantee from the government, or a standing authority to borrow from the government; and access to insured deposits is available to depositors no more than 7 business days once the deposit insurance scheme is triggered.

¹⁶ Effective deposit insurance scheme means – A scheme (i) that guarantees that it has the ability to make prompt payouts, (ii) for which the coverage is clearly defined and (iii) of which public awareness is high. The deposit insurer in an effective deposit insurance scheme has formal legal powers to fulfil its mandate and is operationally independent, transparent and accountable. A jurisdiction with an explicit and legally binding sovereign deposit guarantee that effectively functions as deposit insurance can be regarded as having an effective deposit insurance scheme.

If a bank allows a depositor to withdraw such deposits within the 30-day LCR horizon without applying any penalty that is materially greater than the loss of interest, notwithstanding a clause that says the depositor has no legal right to withdraw, the entire category of such deposits would then have to be treated as either stable or less stable deposits depending on their fulfilment of the criteria in paragraphs 35 to 39.

- 41 Where a bank has a branch or subsidiary in other jurisdictions carrying on banking business, the bank shall apply the cash flow rates outlined in this Notice when it calculates its LCR except for deposits from retail and small business customers where the bank shall follow the relevant treatment adopted in the host jurisdiction where the branch or subsidiary operates, subject to the requirements in paragraph 110.

(B) Unsecured wholesale funding cash outflows

- 42 “Unsecured wholesale funding” is defined as those liabilities and general obligations of persons who are not natural persons and such liabilities and general obligations that are not secured by legal rights to specifically designated assets owned by the person in the event of the bankruptcy, insolvency, liquidation or resolution of the person. Liabilities and obligations related to derivative contracts are explicitly excluded from this definition.

- 43 The unsecured wholesale funding included in the LCR is defined as all funding that is callable within 30 calendar days or that has its earliest possible contractual maturity date situated within this horizon (such as maturing term deposits and unsecured debt securities) as well as funding with an undetermined maturity, and includes all funding with options that are exercisable at the counterparty’s discretion within 30 calendar days. For options exercisable at the bank’s discretion, the bank shall consider reputational factors that may limit the bank’s ability not to exercise the option and its impact on unsecured wholesale funding cash outflows.

- 44 Unsecured wholesale funding that is callable by such counterparties subject to a contractually defined and binding notice period surpassing the horizon of 30 calendar days is not included.

(I) Unsecured wholesale funding provided by small business customers

- 45 Unsecured wholesale funding provided by small business customers is treated the same way as retail deposits i.e. on the same basis as determining stable and less stable deposits and associated cash outflow rates apply⁸.

(II) Operational deposits generated by clearing, custody and cash management activities:

- 46 Only operational deposits from customers with qualifying clearing, custody and cash management accounts with the bank (“qualifying operational deposits”) are allocated a

cash outflow rate of 25%. The portion of operational deposits generated by clearing, custody and cash management activities that is fully covered by any deposit insurance scheme shall receive the same treatment as “stable” retail deposits. To ensure that the banks utilising this treatment are conducting the clearing, custody and cash management activities at the level indicated, banks shall obtain the approval of the Authority to utilise the cash outflow rates set out in this paragraph.

- 47 Qualifying clearing, custody or cash management activities shall meet the following criteria:
- a) the customer is reliant on the bank to perform these services as an independent third party intermediary in order to fulfil its normal banking activities over the next 30 days. For example, this condition would not be met if the bank is aware that the customer has adequate back-up arrangements;
 - b) the bank is providing these services under a legally binding agreement to customers; and
 - c) the customer may only terminate such agreements either by giving prior notice of at least 30 days or paying significant switching costs (such as those related to transaction, information technology, early termination or legal costs) if the operational deposits are withdrawn before 30 days.
- 48 Qualifying operational deposits generated from the qualifying clearing, custody and cash management activities shall meet the following criteria:
- a) the deposits are by-products of the underlying services provided by the bank and not sought out in the wholesale market in the sole interest of offering interest income; and
 - b) the deposits are held in specifically designated accounts and priced without giving an economic incentive to the customer (not limited to paying market interest rates) to leave any excess funds on these accounts. In the case that interest rates in a jurisdiction are close to zero, such accounts are likely to be non-interest bearing. A bank should be particularly aware that during prolonged periods of low interest rates, excess balances (as defined below) could be significant.
- 49 Any excess balances that may be withdrawn while still leaving sufficient funds to fulfil the qualifying clearing, custody and cash management activities do not qualify as operational deposits.
- 50 A bank shall determine the methodology for identifying excess deposits that are excluded from this category. A bank shall conduct the assessment based on the methodology at a sufficiently granular level to adequately assess the risk of withdrawal in an idiosyncratic

stress. The methodology shall take into account relevant factors such as the likelihood that wholesale customers have above average balances in advance of specific payment needs, and consider appropriate indicators (e.g. ratios of account balances to payment or settlement volumes or to assets under custody) to identify those customers that are not actively managing account balances efficiently.

- 51 Operational deposits would receive a 0% inflow assumption for the depositing bank given that these deposits are required for operational reasons, and are therefore not available to the depositing bank to repay other outflows.
- 52 Notwithstanding the inclusion of a deposit into the operational deposit category, if the deposit under consideration arises out of correspondent banking¹⁷ or from the provision of prime brokerage services, a bank shall treat the deposit as if there were no operational activity for the purpose of determining cash outflow rates.

(III) Deposits in institutional networks of cooperative banks:

- 53 An institutional network of cooperative (or otherwise named) banks is a group of legally autonomous banks with a statutory framework of cooperation with common strategic focus and brand where specific functions are performed by central institutions or specialised service providers. A cash outflow rate of 25% may be applied to the amount of deposits of member institutions with the central institution or specialised central service providers that are placed arising from statutory minimum deposit requirements or in the context of common task sharing and legal, statutory or contractual arrangements so long as both the bank that has received the monies and the bank that has deposited the monies participate in the same institutional network's mutual protection scheme against illiquidity and insolvency of its members. As with other operational deposits, these deposits would receive a cash inflow rate of 0% for the depositing bank, as these funds are considered to remain with the centralised institution.
- 54 A bank shall seek the Authority's approval before applying the treatment in paragraph 53. The bank shall not include its correspondent banking activities in this category and such banking activities shall to receive a cash outflow rate of 100%, as would funds placed at the central institutions or specialised service providers for any other reason other than those outlined in paragraph 53 above, or for clearing, custody, or cash management activities.

¹⁷ Correspondent banking refers to arrangements under which one bank (correspondent) holds deposits owned by other banks (respondents) and provides payment and other services in order to settle foreign currency transactions (e.g. so-called nostro and vostro accounts used to settle transactions in a currency other than the domestic currency of the respondent bank for the provision of clearing and settlement of payments). Prime brokerage is a package of services offered to large active investors, particularly institutional hedge funds. These services usually include: clearing, settlement and custody; consolidated reporting; financing (margin, repo or synthetic); securities lending; capital introduction; and risk analytics.

(IV) Deposits contractually pledged to a bank as collateral to secure other transactions

55 Notwithstanding the paragraphs above, if a deposit is contractually pledged to a bank as collateral to secure a credit facility or loan granted by the bank (“pledged deposit”) that will not mature or settle within the next 30 days, the pledged deposit may be excluded from the LCR only if all the following conditions are met:

- a) the loan or credit facility is not maturing in the next 30 days;
- b) there is a legally enforceable contract disallowing withdrawal of the pledged deposit before the loan is fully settled or repaid; and
- c) the amount of deposit that is excluded from the LCR does not exceed the outstanding balance of the loan or drawn portion of the credit facility.

This shall not apply to a deposit which is pledged against an undrawn facility, in which case the higher of the outflow rate applicable to the undrawn facility or the pledged deposit applies.

(V) Unsecured wholesale funding provided by non-financial corporate and sovereigns, central banks, multilateral development banks and PSEs:

56 A bank shall apply a cash outflow rate of 20% on unsecured wholesale funding provided by corporate customers which are not financial institutions, sovereigns, central banks, multilateral development banks, and PSEs, that also do not qualify as operational deposits if the entire amount of the deposit is fully covered by an effective deposit insurance scheme or by a public guarantee that provides equivalent protection. Otherwise, the bank shall apply a cash outflow rate of 40% on such unsecured wholesale funding.

(VI) Unsecured wholesale funding provided by other customers which are not natural persons:

57 A bank shall apply a cash outflow rate of 100% on all deposits and other funding from other institutions (including banks, securities firms, insurance companies), fiduciaries, beneficiaries, conduits and special purpose vehicles, affiliated entities of the bank and other entities that are not specifically held for operational purposes (as defined above) and not included in the paragraphs 42 to 56. Outflows from unsecured wholesale funding over the 30-day LCR horizon and provided by intragroup banking entities may be computed on a net basis with inflows from unsecured wholesale funding over the 30-day LCR horizon provided by intragroup banking entities.

58 All notes, bonds and other debt securities issued by the bank are to be included in this category regardless of the holder, unless the bond is sold exclusively in the retail market and held in retail accounts (including small business customer accounts), in which case a bank may include the notes, bonds or debt securities in the appropriate retail or small business customer deposit category provided that limitations are placed on the instrument by the bank such that those instruments cannot be bought and held by parties other than retail or small business customers.

59 A bank shall separate customer cash balances arising from the provision of prime brokerage services, including but not limited to the cash arising from prime brokerage services as identified in paragraph 52, from any required segregated balances related to client protection regimes imposed by national regulations and such cash balances shall not be netted against other customer exposures included in LCR. These offsetting balances held in segregated accounts are treated as inflows and shall be excluded from HQLA.

(C) Secured funding cash outflows

60 A bank shall include as secured funding cash outflows any liabilities and general obligations that are collateralised by legal rights to specifically designated assets owned by the borrowing institution in the case of bankruptcy, insolvency, liquidation or resolution. The bank shall include forward repurchase transactions and collateral swaps that start prior to, but mature within the 30-day LCR horizon in this category.

61 A bank shall treat collateral swaps as a combination of a repurchase and reverse repurchase agreement, as shall any other transaction which involves an exchange of non-cash assets. The net outflow for collateral swaps is computed based on the net cash outflow that will result from an equivalent repurchase and reverse repurchase transaction, floored at 0%. The bank shall treat collateral lent to the bank's customers to effect short positions as a form of secured funding.

62 If a pool of assets is used as collateral for a secured funding transaction, and a bank is unable to determine specifically which assets are used to collateralise the transaction, it shall assume that the assets are encumbered in the following order: Level 1 HQLA, Level 2A HQLA, Level 2B(I) HQLA, Level 2B(II) HQLA, non-HQLA eligible assets.

63 Appendix 7 provides a summary of the cash outflow rates that applies to each category for outstanding secured funding transactions that matures within the 30-day LCR horizon. A bank shall apply the outflow rates to the amount of funds raised through the secured funding transaction.

(D) Additional requirements

- 64 **Cash outflows from derivative contracts:** The sum of all net cash outflows shall be assigned a cash outflow rate of 100%. A bank shall calculate, in accordance with its existing valuation methodologies, expected cash inflows and outflows from its derivative contracts. A bank may calculate its cash flows with its counterparty on a net basis (i.e. derivative inflows within the 30-day LCR horizon can offset derivative outflows within the 30-day LCR horizon), where it has entered into a valid master netting agreement with that counterparty. In determining its all currency LCR, a bank may calculate its cash flows on a net basis for foreign exchange derivative contracts not covered by a master netting agreement, where it involves a full exchange of principal amounts within the same day. The bank shall exclude from such calculations those liquidity requirements that would result from increased collateral needs due to market value movements or falls in value of collateral posted. Options shall be assumed to be exercised at the point when they are ‘in the money’ to the option buyer. Where derivative payments are collateralised by HQLA, cash outflows are calculated net of any corresponding cash or collateral inflows that would result, all other things being equal, from contractual obligations for cash or collateral to be provided to the bank, if the bank is legally entitled and operationally capable to re-use the collateral in new cash raising transactions once the collateral is received. The bank shall treat outflows from options with delivery settlement as secured borrowing transactions, where the delivered assets are treated as collateral in secured transactions or collateral swaps, with the appropriate outflow factors assigned in paragraphs 60 to 63. If contractual arrangements allow for both physical delivery and cash settlement, cash settlement may be assumed. For physical delivery, where not otherwise stated in the derivative contract, delivery of the least value security (“cheapest to deliver”) may be assumed.
- 65 **Increased liquidity needs related to downgrade triggers embedded in financing transactions, derivatives and other contracts:** Often, contracts governing derivatives and other transactions have clauses that require the posting of additional collateral, drawdown of contingent facilities, or early repayment of existing liabilities upon the bank’s downgrade by a recognised credit rating organisation. For each contract in which downgrade triggers exist, the bank shall assume that 100% of this additional collateral or cash outflow as stated in the governing contract shall be posted for any downgrade during the next 30 calendar days up to and including a 3-notch downgrade of the bank’s long-term credit rating. Triggers linked to a bank’s short-term rating shall be triggered at the corresponding long-term rating in accordance with published ratings criteria. The bank shall consider impacts on all types of margin collateral and contractual triggers which change rehypothecation rights for non-segregated collateral for the impact of the downgrade.

- 66 **Increased liquidity needs related to the potential for valuation changes on posted collateral securing derivative and other transaction:** Observation of market practices indicates that most counterparties to derivatives transactions typically are required to secure the mark-to-market valuation of their positions and that this is predominantly done using cash or sovereign, central bank, multilateral development banks, or PSE debt securities with a 0% risk weight under the Basel II standardised approach. When these Level 1 HQLA securities are posted as collateral, the framework will not require that additional HQLA be maintained for potential valuation changes. If however, counterparties are securing mark-to-market exposures with other forms of collateral, to cover the potential loss of market value on those securities, 20% of the value of all such posted collateral, net of collateral received on a counterparty basis (provided that the collateral received is not subject to restrictions on reuse or rehypothecation) will be added to the stock of required HQLA by the bank posting such collateral. This 20% will be calculated based on the notional amount required to be posted as collateral after any other haircuts have been applied that may be applicable to the collateral category. Any collateral that is in a segregated margin account can only be used to offset outflows that are associated with payments that are eligible to be offset from that same account. The notional amount to be collateralised shall be based on the contractual terms of the transaction. The bank shall not net collateral inflows and outflows across counterparties. The bank shall compute the amount of collateral to be posted in accordance with the relevant contract governing the respective transactions.
- 67 **Increased liquidity needs related to excess non-segregated collateral held by the bank that could contractually be called at any time by the counterparty:** A bank shall include 100% of the non-segregated collateral amount that could contractually be recalled by the counterparty because the collateral is in excess of the counterparty's current collateral requirements. The bank shall compute the amount that can be recalled in accordance with the relevant contract governing the transactions.
- 68 **Increased liquidity needs related to contractually required collateral on transactions for which the counterparty has not yet demanded the collateral be posted:** A bank shall include 100% of the collateral amount that is contractually due but where the counterparty has not yet demanded the posting of such collateral. The amount of collateral shall be computed in accordance with the relevant contract governing the transactions.
- 69 **Increased liquidity needs related to contracts that allow collateral substitution to non- HQLA assets or lower-quality HQLA:** A bank shall include a cash outflow equivalent to the market value of the initial HQLA collateral received multiplied by the difference in haircuts (as defined in paragraph 27 of this Notice) of the received collateral and the potential substitute collateral. This shall apply to initial HQLA collateral received that is counted in the bank's HQLA, and that can be substituted for non-HQLA assets or lower-quality HQLA assets without the bank's consent, where such HQLA collateral has been received to secure transactions that have not been segregated. The bank shall

compute the contingent outflow resulting from collateral substitution in secured lending or borrowing transactions in accordance with the relevant contract governing the transactions.

- 70 **Increased liquidity needs related to market valuation changes on derivative or other transactions:** As market practice requires collateralisation of mark-to-market exposures on derivative and other transactions, a bank faces potentially substantial liquidity risk exposures to these valuation changes. A bank may treat inflows and outflows of transactions executed under the same master netting agreement on a net basis. A bank shall include any outflow generated by increased needs related to market valuation changes in its calculation of the LCR by identifying the largest absolute net 30-day collateral flow realised during the preceding 24 months. The absolute net collateral flow is based on both realised outflows and inflows. The largest absolute net 30-day collateral flow shall be assessed on a portfolio level. The bank shall compute the contingent outflow resulting from market valuation changes in accordance with the relevant contract governing the transactions.
- 71 **Loss of funding on asset-backed securities, covered bonds and other structured financing instruments:** A bank shall assign a cash outflow rate of 100% for such instruments maturing within the 30-day period, when these instruments are issued by the bank itself (as this assumes that the re-financing market will not exist). For products maturing within the next 30 days, a bank may offset inflows from Level 1 or Level 2 HQLA used as collateral for the products against the redemption payment of the products. Any net inflow shall be considered as other contractual cash inflows in paragraph 108.
- 72 **Loss of funding on asset-backed commercial paper, conduits, securities investment vehicles and other such financing facilities:** A bank having structured financing facilities that include the issuance of short-term debt instruments, such as asset backed commercial paper, shall fully consider the potential liquidity risk arising from these structures. These risks include the inability of the bank to refinance maturing debt, and the existence of derivatives or derivative-like components contractually written into the documentation associated with the structure that would allow the “return” of assets in a financing arrangement, or that require the original asset transferor to provide liquidity, effectively ending the financing arrangement (“liquidity puts”) within the 30-day period. Where the structured financing activities of a bank are conducted through a special purpose entity (such as a special purpose vehicle (“SPV”), conduit or structured investment vehicle – (“SIV”)), the bank shall, in determining the HQLA requirements, look through to the maturity of the debt instruments issued by the entity and any embedded options in financing arrangements that may potentially trigger the “return” of assets or the need for liquidity, irrespective of whether or not the SPV is consolidated.

Table 2: Outflow rates from potential risk elements

Potential Risk Element	Cash outflow rate required
Debt maturing within the 30 -day period	A cash outflow rate of 100% on maturing amount
Embedded options in financing arrangements that allow for the return of assets or potential liquidity support	A cash outflow rate of 100% on the amount of assets that could potentially be returned, or the liquidity required

- 73 **Drawdowns on committed credit and liquidity facilities:** Committed facilities are defined as explicit contractual agreements or obligations to extend funds at a future date to retail or wholesale counterparties, which are contractually irrevocable or conditionally revocable agreements. A bank shall classify facilities that are unconditionally cancellable by the bank (in particular, those without a precondition of a material change in the credit condition of the borrower) as other contingent funding obligations as outlined in paragraph 82. Irrevocable or conditionally revocable facilities or funding commitments can have long or short-term maturities, with short-term facilities frequently renewing or automatically rolling-over. In a stressed environment, it will likely be difficult for customers drawing on facilities of any maturity, even short-term maturities, to be able to quickly pay back the borrowings. Therefore, for purposes of this Notice, all such facilities that are assumed to be drawn as outlined in paragraphs 74 to 79 shall remain outstanding at the amounts assigned throughout the 30-day period in computing the net outflows for the LCR, regardless of maturity.
- 74 The currently undrawn portion of these committed facilities is calculated net of any HQLA which have already been posted as collateral by the counterparty to secure the facilities, or that are contractually obliged to be posted when the counterparty draws down the facility. (e.g. a liquidity facility structured as a repo facility). This is provided that the bank is legally entitled and operationally capable to re-use the collateral in new cash raising transactions once the facility is drawn, and there is no undue correlation between the probability of drawing the facility and the market value of the collateral. The collateral can be netted against the outstanding amount of the facility to the extent that this collateral is not already counted in the stock of HQLA.
- 75 A committed liquidity facility is defined as any committed, undrawn back-up facility that would be utilised to refinance the debt obligations of a customer in situations where such a customer is unable to rollover that debt in financial markets (e.g. pursuant to a commercial paper programme, secured financing transactions, obligations to redeem units). For the purpose of this Notice, the amount of the commitment to be treated as a committed liquidity facility is the amount of the currently outstanding debt issued by the customer (or proportionate share, if a syndicated facility) maturing within a 30-day

period that is backstopped by the facility. The portion of a liquidity facility that is backing debt that does not mature within the 30-day window is excluded from the scope of the definition of a facility.

- 76 Any additional capacity of the committed liquidity facility in paragraph 75 (i.e. the remaining commitment) would be treated as a committed credit facility with its associated drawdown rate as specified in paragraph 79. General working capital facilities for corporate entities (e.g. revolving credit facilities in place for general corporate or working capital purposes) will not be classified as liquidity facilities, but as credit facilities.
- 77 Notwithstanding paragraphs 73 to 76, any committed facilities provided to hedge funds, money market funds and special purpose funding vehicles or conduits, or other vehicles used to finance the bank's own assets, are to be captured in their entirety as a committed liquidity facility to other legal entities.
- 78 For that portion of financing programs issued by a bank that are captured under paragraphs 71 and 72 of the Notice (i.e. are maturing or have liquidity puts that may be exercised within 30 calendar days), banks that are providers of the associated liquidity facilities do not need to double count the maturing financing instrument and the liquidity facility for consolidated programs.
- 79 Any contractual and estimated loan drawdowns from committed facilities within the 30-day period shall be fully reflected as cash outflows with the following outflow rates:
- a) Committed credit and liquidity facilities to retail and small business customers: A bank shall assume a cash outflow rate of 5% of the undrawn portion of these facilities;
 - b) Committed credit facilities to non-financial corporates, sovereigns and central banks, PSEs and multilateral development banks: A bank shall assume a cash outflow rate of 10% of the undrawn portion of these credit facilities;
 - c) Committed liquidity facilities to non-financial corporates, sovereigns and central banks, PSEs, and multilateral development banks: A bank shall assume a cash outflow rate of 30% of the undrawn portion of these liquidity facilities;
 - d) Committed credit and liquidity facilities extended to banks subject to prudential supervision: A bank shall assume a cash outflow rate of 40% of the undrawn portion of these facilities;
 - e) Committed credit facilities to other financial institutions including securities firms, insurance companies, fiduciaries, and beneficiaries: A bank shall assume a cash outflow rate of 40% of the undrawn portion of these credit facilities;

- f) Committed liquidity facilities to other financial institutions including securities firms, insurance companies, fiduciaries, and beneficiaries: A bank shall assume a cash outflow rate of 100% of the undrawn portion of these liquidity facilities; or
 - g) Committed credit and liquidity facilities to other legal entities (including SPEs, conduits and special purpose vehicles, and other entities not included in the prior categories): A bank shall assume a cash outflow rate of 100% of the undrawn portion of these facilities.
- 80 **Contractual obligations to extend funds within a 30-day period:** Any contractual lending obligations to financial institutions not captured elsewhere in this notice are to be captured here at a cash outflow rate of 100%.
- 81 If the total of all contractual obligations to extend funds to retail and non-financial corporate clients within the next 30 calendar days not captured in the prior paragraphs exceeds 50% of the total contractual inflows due in the next 30 calendar days from these clients, the difference should be reported as a cash outflow rate of 100%.
- 82 **Other contingent funding obligations:** These contingent funding obligations may be either contractual or non-contractual and are not lending commitments. Non-contractual contingent funding obligations include associations with, or sponsorship of, products sold or services provided that may require the support or extension of funds in the future under stressed conditions. Non-contractual obligations may be embedded in financial products and instruments sold, sponsored, or originated by the institution that can give rise to unplanned balance sheet growth arising from support given for reputational risk considerations. These include products and instruments for which the customer or holder has specific expectations regarding the liquidity and marketability of the product or instrument and for which failure to satisfy customer expectations in a commercially reasonable manner would likely cause material reputational damage to the institution or otherwise impair ongoing viability. The full amount of the obligations that is expected to materialise will receive a cash outflow rate of 100%.
- 83 Some of these contingent funding obligations are explicitly contingent upon a credit or other event that is not always related to the liquidity events simulated in the stress scenario, but may nevertheless have the potential to cause significant liquidity drains in times of stress. Where applicable, the bank shall inform the Authority not later than the last calendar day of each year of such new contingent funding obligations that they have assumed.
- 84 Non-contractual contingent funding obligations related to potential liquidity draws from joint ventures or investments in entities, which are not consolidated, are to be captured in paragraph 82 where there is the expectation that the bank will be the main liquidity provider when the entity is in need of liquidity. The methodology for quantifying such potential liquidity draws, in particular, those arising from the need to support investments

in times of stress out of reputational concerns for the purpose of calculating the LCR standard, shall be agreed between the bank and the Authority.

- 85 **Trade finance cash outflows:** Trade finance instruments consist of trade-related obligations, directly underpinned by the movement of goods or the provision of services, such as:
- a) documentary trade letters of credit, documentary and clean collection, import bills and export bills; and
 - b) guarantees directly related to trade finance obligations, such as shipping guarantees.
- 86 For contingent funding obligations stemming from trade finance instruments, a bank shall apply a cash outflow rate of 3%.
- 87 Lending commitments, such as direct import or export financing for non-financial corporate firms, are excluded from the above treatment and a bank shall apply the cash outflow rates specified in paragraph 79 for such commitments.
- 88 **Non contractual obligations where customer short positions are covered by other customers' collateral:** A bank shall apply a cash outflow rate of 50% on such contingent obligations where the bank has internally matched client assets against other clients' short positions, where the collateral does not qualify as Level 1 or Level 2 HQLA, and the bank may be obligated to find additional sources of funding for these positions in the event of client withdrawals.
- 89 **Other contractual cash outflows:** Any other contractual cash outflows within the next 30 calendar days should be captured in this Notice, such as outflows to cover unsecured collateral borrowings, uncovered short positions, dividends or contractual interest payments, with explanation given as to what comprises this bucket. A bank shall apply a cash outflow rate of 100% to these contractual cash outflows. A bank however does not need to include outflows related to operating costs.

Cash inflows

- 90 When considering its available cash inflows, a bank shall only include contractual inflows (including interest payments) from outstanding exposures that are fully performing and for which the bank has no reason to expect a default within the next 30 calendar days. The bank shall not include contingent inflows in total net cash inflows.
- 91 **Cap on total inflows:** In order to prevent banks from relying solely on anticipated inflows to meet their liquidity requirement, and also to ensure a minimum level of HQLA holdings, the amount of inflows that can offset outflows shall be capped at 75% of total expected cash outflows as calculated in Part II - LCR of the Notice.

(E) Secured lending, including reverse repos and securities borrowing

92 For maturing reverse repurchase or securities borrowing agreements:

- a) if the agreement is secured by Level 1 HQLA, a cash inflow rate of 0% shall be assumed;
- b) if the agreement is secured by Level 2 HQLA, a cash inflow rate equivalent to the relevant haircut for the specific HQLA shall be assumed; or
- c) if the agreement is secured by non-HQLA, a cash inflow rate of 100% shall be assumed.

Collateralised loans extended to customers for the purpose of taking leveraged trading positions (“margin loans”) are to receive 50% of contractual inflows (i.e. a cash inflow rate of 50%) from maturing margin loans made against collateral which would not be considered as HQLA. Table 3 lists the relevant inflow rates.

93 As an exception to paragraph 92, if the collateral obtained through reverse repurchase, securities borrowing, or collateral swaps is used to cover short positions that could be extended beyond 30 days, a bank shall assume that such reverse repurchase or securities borrowing arrangements will be rolled-over and will not give rise to any cash inflows (i.e. a cash inflow rate of 0%), reflecting its need to continue to cover the short position or to re-purchase the relevant securities. Table 3 lists the relevant inflow rates.

Table 3: Maturing secured lending inflow rates

Maturing secured lending backed by the following asset category	Inflow rate (if collateral is not used to cover short positions)	Inflow rate (if collateral is used to cover short positions)
Level 1 HQLA	0%	0%
Level 2A HQLA	15%	0%
Level 2B HQLA		
• Eligible RMBS	25%	0%
• Other Level 2B HQLA	50%	0%
Margin lending backed by all other collateral	50%	0%
Other collateral	100%	0%

94 In the case of a bank’s short positions, if the short position is being covered by an unsecured security borrowing, the bank should assume the unsecured security borrowing

of collateral from financial market participants would run-off in full, leading to a 100% outflow of either cash or HQLA to secure the borrowing, or cash to close out the short position by buying back the security. This should be recorded as a 100% other contractual outflow according to paragraph 89. If, however, the bank's short position is being covered by a collateralised securities financing transaction, the bank should assume the short position will be maintained throughout the 30-day period and receive a cash inflow rate of 0%.

- 95 If a pool of assets is used as collateral for a secured lending transaction, and a bank is unable to determine specifically which assets are used to collateralise the transaction, it shall assume that the assets are encumbered in the following order: Level 1 HQLA, Level 2A HQLA, Level 2B(I) HQLA, Level 2B(II) HQLA, non-HQLA eligible assets.
- 96 Notwithstanding the roll-over assumptions in paragraphs 92 and 93, a bank shall manage its collateral such that it is able to fulfil obligations to return collateral whenever the counterparty decides not to roll-over any reverse repo or securities lending transaction.
- 97 A bank shall include forward reverse repurchase transactions and collateral swaps that start prior but mature within the 30-day LCR horizon in this category.
- 98 Paragraphs 92 to 97 shall not apply to any transaction where there is a possibility of the inflow occurring after 30 days.

(F) Committed facilities

- 99 Credit facilities, liquidity facilities or other contingent funding facilities that the bank holds at other institutions for its own purposes receive a cash inflow rate of 0%.

(G) Other inflows by counterparty

- 100 For loan payments, a bank shall only include cash inflows from fully performing loans. In addition, a bank shall only include cash inflows at the latest possible date, based on the contractual rights available to counterparties. For revolving credit facilities, the bank shall assume that the existing loan will be rolled over and any remaining balances are treated as a committed facility according to paragraph 79.
- 101 Cash inflows from loans that have no specific maturity should not be included, except for minimum payments of principal, fee or interest associated with an open maturity loans that are contractually due within 30 days. An exception to this would be minimum payments of principal, fee or interest associated with an open maturity loan, provided that such payments are contractually due within 30 days. These minimum payment amounts are captured as inflows at the rates prescribed in paragraphs 102 and 103.

(I) Retail and small business customer inflows

102 A bank shall assume that all payments (including interest payments and instalments) from retail and small business customers that are fully performing and contractually due within the next 30 calendar days will be received in full. At the same time, the bank shall assume that it will continue extending loans to retail and small business customers at a rate of 50% of contractual inflows. This results in a net cash inflow rate of 50% of the contractual amount.

(II) Other wholesale inflows

103 A bank shall assume that all payments (including interest payments and instalments) received from wholesale customers that are fully performing and contractually due within the next 30 calendar days will be received in full. In addition, the bank is to assume to continue extending loans to wholesale customers with a cash inflow rate of 100% for financial institutions and central banks, and a cash inflow rate of 50% for all others, including non-financial corporates, sovereigns, multilateral development banks, and PSEs. This will result in a cash inflow rate of:

- a) 100% for financial institutions and central bank counterparties; and
- b) 50% for non-financial wholesale counterparties.

104 Inflows from securities maturing within 30 days not included in HQLA shall receive a cash inflow rate of 100%.

105 Operational deposits of a bank held at other financial institutions for operational purposes are to receive a cash inflow rate of 0%. Similarly, deposits held at the centralised institution in a cooperative banking network, which are assumed to stay at the centralised institution, are to receive a cash inflow rate of 0%. A bank shall assess operational deposits according to the methodology in paragraphs 46 to 52. A deposit that has been classified by a receiving bank or financial institution, as the case may be, as operational shall also be considered by a depositing bank or financial institution, as the case may be as an operational deposit.

106 Inflows from intragroup banking entities may be computed on a net basis with outflows from intragroup banking entities.

(H) Other cash inflows

107 Cash inflows from derivative contracts: the sum of all net cash inflows shall be assigned a cash inflow rate of 100%. Where derivatives are collateralised by HQLA, a bank shall

calculate the cash inflows for the derivatives net of any corresponding cash or contractual collateral outflows. The bank shall not double-count liquidity inflows or outflows. The amounts of cash inflows from derivative contracts shall be calculated in accordance to the methodology described in paragraph 64. A bank shall treat inflows from an option with a delivery settlement as a secured lending transaction, with the appropriate inflows assigned as per paragraphs 92 to 96. If the contractual arrangements allow for both physical delivery and cash settlement, cash settlement may be assumed. For physical delivery, where not otherwise stated in the derivative contract, delivery of the least value security (“cheapest to deliver”) may be assumed.

- 108 Other contractual cash inflows: All other contractual cash inflows shall receive a cash inflow rate of 0%. A bank shall include any other contractual cash inflows not captured in any other earlier category here, with an explanation as to what has been included in this category.
- 109 A bank shall not include the following items as contractual cash inflows:
- a) any cash inflow related to non-financial revenues;
 - b) any forward repurchase, forward reverse repurchase agreements or forward collateral swap that starts and matures within the 30-day LCR horizon;
 - c) any forward repurchase, forward reverse repurchase agreements or forward collateral swap that starts prior to and matures after the 30-day LCR horizon;
 - d) any forward sales of HQLA.

Scope of Application

- 110 Where a bank has a branch or subsidiary in jurisdictions that do not apply the Basel Committee’s global framework for liquidity risk, the bank shall apply the parameters outlined in this Notice for its calculation of the LCR. Where a bank has a branch or subsidiary in jurisdictions that applies the Basel Committee’s global framework for liquidity risk, paragraphs 35 to 41 and footnote 8 shall be interpreted according to the host jurisdiction’s equivalent LCR rules.
- 111 Where a bank has banking presence (branch or subsidiary) in jurisdictions that adopt the Alternative Liquidity Approaches (ALA), the bank may include the HQLA recognized in these jurisdictions for its calculation of the LCR, up to the amount of the bank’s stressed net cash outflows stemming from the bank or its subsidiary’s operations in these jurisdictions.
- 112 The Authority reserves the right to impose stricter parameters where necessary.

Utilisation of HQLA

113 A bank shall notify the Authority in writing of its intent to utilise its HQLA, where it will cause its LCR to fall below the prevailing minimum requirements as described in paragraphs 18 and 19, in a liquidity stress situation prior to the utilisation. The bank shall ensure that the notification is signed by its chief executive, chief financial officer or any equivalent senior management.

114 A bank shall —

- a) provide its justification for the utilisation of HQLA;
- b) set out the cause of the liquidity stress situation and to provide supporting documents, where available; and
- c) detail the steps which it has taken and is going to take to resolve the liquidity stress situation,

to the Authority within one business day after the utilisation of its HQLA.

115 A bank shall also keep the Authority informed of material developments during the liquidity stress situation.

Frequency of calculation and reporting

116 Every bank shall prepare the appropriate liquidity returns set out at Appendix 5 as at the last calendar day of each month.

117 A bank shall submit to the Authority electronically through MASNET the following liquidity returns prepared in accordance with paragraph 116 and at the following time, as the case may be:

- a) in the case of a bank –
 - i) incorporated and headquartered in Singapore; or
 - ii) that is approved under paragraph 4 to comply with LCR on a country-level group basis –
 1. not later than 10 calendar days after the last day of each month, the bank's Group level or country-level group level returns, as the case may be; and
 2. not later than 20 calendar days after the last day of each month, the bank's entity-level returns;
- b) in the case of a bank which does not fall under sub-paragraph (a), the bank's entity-level returns not later than 10 calendar days after the last day of each month.

Effective date and transitional arrangements

- 118 Subject to paragraph 119, this Notice shall take effect on 1 January 2015 for a bank incorporated and headquartered in Singapore, and 1 January 2016 for all other banks in Singapore (collectively referred to as “effective date”).
- 119 A bank in Singapore to which paragraph 118 applies may at any time before the effective date, elect to comply with this Notice by giving written notice of this to the Authority at least 1 month before the intended date of compliance as specified in the Notice; and as from the intended date of compliance (“early compliance date”), this Notice shall apply to the bank.
- 120 A bank transitioning from complying with the minimum liquid assets requirement in MAS Notice 613 in force immediately before the effective date (“old MLA requirement”) to the LCR framework, shall maintain the old MLA requirement up to the effective date or the early compliance date, as the case may be.
- 121 A bank complying with Part II – LCR of this Notice for the period from 1 Jan 2015 to 1 31 Dec 2015 (“relevant period”) shall only submit Form 2 Section 1A in Appendix 5 for the relevant currencies and Forms 3 to 7, where applicable, of the old MLA requirement during the relevant period.

Exclusion as Qualifying Liabilities

- 1 Subject to paragraph 2 of Appendix 1 of this Notice, a bank may exclude a bill of exchange as its Qualifying Liabilities if –
 - a) the bill of exchange is denominated in Singapore Dollars. Where the underlying transaction referred to the bill of exchange is denominated in a foreign currency, the bill shall be substituted for the first time into a Singapore dollar usance bill;
 - b) the bill of exchange relates to a trade transaction and reference to such a transaction shall appear on the face of the bill. The trade transaction shall be in respect of imports into or exports from, Singapore and includes trade transactions between foreign exporters and foreign importers arranged by companies in Singapore. The first discounting bank shall ascertain that the bill of exchange is in fact related to trade transactions by examining the appropriate documents and obtaining written declarations from their customers that they have not sought or obtained other means of financing; and
 - c) the outstanding period to maturity of the bill of exchange is 3 months or less.

- 2 A bank shall not exclude the following bills of exchange from its Qualifying Liabilities:
 - a) any bill which originates from a “switch transaction” where the transaction is solely between a foreign exporter and a foreign importer and the foreign currency trade bill is “switched” into a Singapore dollar bill and financed here;
 - b) any bill which is a bill drawn for a trade transaction in Singapore where all parties are in Singapore;
 - c) any bill which is a bill relating to services;
 - d) any bill which relates to a trade transactions where payment has been made, i.e. where the supporting invoice has been paid by the customer prior to presentation of the bill to a bank for discounting;
 - e) any bill which is overdue or been extended beyond the maturity date and a new bill has been drawn to substitute or roll-over the matured bill, regardless of whether the original bill had 3 months or less to maturity at the time it was discounted by the bank;

- f) any bill which is drawn for imports where the importer is also receiving credit from the seller for the same period, as the imports would effectively be financed by the seller and not from proceeds of the bill.

Qualification as Approved Liquid Assets

- 1 A bank which purchases a bill of exchange denominated in Singapore Dollars from another bank in Singapore may include such a bill as liquid assets if —
 - a) the bill has been endorsed by one or more banks in Singapore;
 - b) the purchasing bank obtained a written confirmation from the first discounting bank that —
 - i) the first discounting bank had taken necessary and sufficient steps to ascertain that the bills are in fact related to trade transactions as evidenced on the bills;
 - ii) the bill does not originate from a “switch transaction” where the transaction is solely between a foreign exporter and a foreign importer and the foreign currency trade bill is “switched” into a Singapore dollar bill and financed here;
 - iii) the bill is not drawn for a trade transaction in Singapore where all parties are in Singapore;
 - iv) the bill does not relate to services;
 - v) the bill does not relate to a trade transactions where payment has been made, i.e. where the supporting invoice has been paid by the customer prior to presentation of the bill to a bank for discounting;
 - vi) the bill has not become overdue or been extended beyond the maturity date and no new bill has been drawn to substitute or roll-over the matured bill, regardless of whether the original bill had 3 months or less to maturity at the time it was discounted by the bank;
 - vii) the bill is not drawn for imports where the importer is also receiving credit from the seller for the same period (as the imports would effectively be financed by the seller and not from proceeds of the bills); and
 - c) the outstanding period to maturity of the bill shall be 3 months or less. A bill originally drawn for more than 3 months shall only be eligible as liquid asset when there is 3 months or less to maturity.

Credit Ratings and Relevant Values

Description	Moody's	S&P	Fitch	Percentage
Long Term Issue Ratings	Aaa	AAA	AAA	90%
	Aa1	AA+	AA+	
	Aa2	AA	AA	
	Aa3	AA-	AA-	80%
	A1	A+	A+	
	A2	A	A	
	A3	A-	A-	
	Baa1	BBB+	BBB+	70%
	Baa2	BBB	BBB	

Description	Moody's	S&P	Fitch	Percentage
Short Term Issue Ratings	P-1	A-1	F-1	90%
	P-2	A-2	F-2	80%
	P-3	A-3	F-3	70%

If more than one rating is available, a bank shall use the lowest rating. Where a particular debt issue is assigned both long term and short term ratings, a bank shall apply the lower percentage.

Schedules for Computation and Maintenance of MLA Requirements

For a 5-day business week:

Computation Day	Maintenance Day
Monday	Wednesday
Tuesday	Thursday
Wednesday	Friday, Saturday and Sunday
Thursday	next Monday
Friday	next Tuesday
next Monday	next Wednesday
next Tuesday	next Thursday
....

Example 1: If Thursday is a public holiday

Computation Day	Maintenance Day
Monday	Wednesday and Thursday
Tuesday	Friday, Saturday and Sunday
Wednesday	next Monday
Friday	next Tuesday
next Monday	next Wednesday
next Tuesday	next Thursday
....

Example 2: If Friday is a public holiday

Computation Day	Maintenance Day
Monday	Wednesday
Tuesday	Thursday, Friday, Saturday and Sunday
Wednesday	next Monday
Thursday	next Tuesday
next Monday	next Wednesday
next Tuesday	next Thursday
....

Example 3: If next Monday is a public holiday

Computation Day	Maintenance Day
Monday	Wednesday
Tuesday	Thursday
Wednesday	Friday, Saturday, Sunday and next Monday
Thursday	next Tuesday
Friday	next Wednesday
next Tuesday	next Thursday
next Wednesday	next Friday
...

Example 4: If next Tuesday is a public holiday

Computation Day	Maintenance Day
Monday	Wednesday
Tuesday	Thursday
Wednesday	Friday, Saturday and Sunday
Thursday	next Monday and Tuesday
Friday	next Wednesday
next Monday	next Thursday
next Wednesday	next Friday
...

Example 5: If next Wednesday is a public holiday

Computation Day	Maintenance Day
Monday	Wednesday
Tuesday	Thursday
Wednesday	Friday, Saturday and Sunday
Thursday	next Monday
Friday	next Tuesday and Wednesday
next Monday	next Thursday
next Tuesday	next Friday, Saturday and Sunday
next Thursday	Monday, a fortnight later
...

Submission Requirements**Summary of forms**

	Title
Form 1 Section 1	Assets and Liabilities by Currency
Form 1 Section 2	Top 20 individual depositors
Form 1 Section 3	Top 20 corporate depositors
Form 1 Section 4	Top 20 interbank lenders
Form 2 Section 1A	Liquidity Coverage Ratio
Form 2 Section 1B	Minimum Liquid Assets
Form 2 Section 2	Contractual cash flow for on and off-balance sheet items
Form 2 Section 3	Contractual residual maturity of on and off-balance sheet items
Form 2 Section 4	Behavioural cash flow of on and off-balance sheet items
Form 2 Section 5	Available unencumbered liquid assets

- 1 A bank shall submit 1 copy of Form 1, but as many copies of Form 2 as there are significant currencies on a standalone and banking group level, if any. A bank may, in consultation with the Authority, determine an alternate methodology to determine its significant currencies if the default methodology in paragraph 17 does not properly reflect the funding structure of the bank. The forms to submit are given in the table below.

Country level compliance

- 2 As per paragraph 4 of the Notice, a bank on the LCR framework may elect to comply with the LCR on a country-level group basis, by consolidating the balance sheets of related banking entities in Singapore. Each bank within the country-level grouping shall submit the same set of forms as if they were complying with the LCR on an individual level.
- 3 The banks within each country-level grouping shall select an entity to perform the country-level submission, and this choice has to be made known to the Authority. The country level submission shall follow the steps as per the individual entity submission, but the details of the entities in the country-level grouping shall be indicated in Section 1 of both Form 1 and Form 2.

FI type	Forms to submit
<p>D-SIB bank</p> <p>Individual/Group submission</p>	<ul style="list-style-type: none"> • Form 1 <ul style="list-style-type: none"> ○ All sections • Form 2 (All Currency) <ul style="list-style-type: none"> ○ Section 1A ○ Section 2 ○ Section 3 ○ Section 4 ○ Section 5 • Form 2 (Singapore Dollar) <ul style="list-style-type: none"> ○ Section 1A ○ Section 2 ○ Section 3 ○ Section 4 ○ Section 5
<p>D-SIB bank (Currency X is a significant currency)</p> <p>Individual/Group submission</p>	<ul style="list-style-type: none"> • Form 1 <ul style="list-style-type: none"> ○ All sections • Form 2 (All Currency) <ul style="list-style-type: none"> ○ Section 1A ○ Section 2 ○ Section 3 ○ Section 4 ○ Section 5 • Form 2 (Singapore Dollar) <ul style="list-style-type: none"> ○ Section 1A ○ Section 2 ○ Section 3 ○ Section 4 ○ Section 5 • Form 2 (Currency X) <ul style="list-style-type: none"> ○ Section 1A ○ Section 2 ○ Section 3 ○ Section 4 ○ Section 5

FI type	Forms to submit
<p>Non-D-SIB bank</p> <p>Individual/Group submission</p> <p>Bank is on LCR framework</p>	<ul style="list-style-type: none"> • Form 1 <ul style="list-style-type: none"> ○ All sections • Form 2 (All Currency) <ul style="list-style-type: none"> ○ Section 1A ○ Section 2 ○ Section 3 ○ Section 5 • Form 2 (Singapore Dollar) <ul style="list-style-type: none"> ○ Section 1A ○ Section 2 ○ Section 3 ○ Section 5
<p>Non-D-SIB bank (Currency X is a significant currency)</p> <p>Individual/Group submission</p> <p>Bank is on LCR framework</p>	<ul style="list-style-type: none"> • Form 1 <ul style="list-style-type: none"> ○ All sections • Form 2 (All Currency) <ul style="list-style-type: none"> ○ Section 1A ○ Section 2 ○ Section 3 ○ Section 5 • Form 2 (Singapore Dollar) <ul style="list-style-type: none"> ○ Section 1A ○ Section 2 ○ Section 3 ○ Section 5 • Form 2 (Currency X) <ul style="list-style-type: none"> ○ Section 1A ○ Section 2 ○ Section 3 ○ Section 5

FI type	Forms to submit
<p>Non-D-SIB bank</p> <p>Individual submission</p> <p>Bank is on MLA framework</p>	<ul style="list-style-type: none"> • Form 1 <ul style="list-style-type: none"> ○ All sections • Form 2 (All Currency) <ul style="list-style-type: none"> ○ Section 1B (All Currency section for part 3) ○ Section 2 ○ Section 3 ○ Section 5 • Form 2 (Singapore Dollar) <ul style="list-style-type: none"> ○ Section 1B (Singapore Dollar section for part 3) ○ Section 2 ○ Section 3 ○ Section 5
<p>Non-D-SIB bank (Currency X is a significant currency)</p> <p>Individual submission</p> <p>Bank is on MLA framework</p>	<ul style="list-style-type: none"> • Form 1 <ul style="list-style-type: none"> ○ All sections • Form 2 (All Currency) <ul style="list-style-type: none"> ○ Section 1B (All Currency section for part 3) ○ Section 2 ○ Section 3 ○ Section 5 • Form 2 (Singapore Dollar) <ul style="list-style-type: none"> ○ Section 1B (Singapore Dollar section for part 3) ○ Section 2 ○ Section 3 ○ Section 5 • Form 2 (Currency X) <ul style="list-style-type: none"> ○ Section 2 ○ Section 3 ○ Section 5

Calculation of the cap on Level 2 HQLA with regard to short-term securities financing transactions

- 1 This appendix describes the method that a bank shall apply for the calculation of the cap on Level 2A, Level 2B and Level 2B(II) HQLA with regard to short-term securities financing transactions.
- 2 As stated in paragraph 26 of the Notice, the calculation of the 40% cap on Level 2 HQLA shall take into account the impact on the stock of HQLA of the amounts of Level 1 and Level 2 HQLA involved in secured funding¹⁸, secured lending¹⁹ and collateral swap transactions maturing within 30 calendar days. The maximum amount of adjusted Level 2 HQLA in the stock of HQLA shall be equal to two-thirds of the adjusted amount of Level 1 HQLA after haircuts have been applied. The calculation of the 40% cap on Level 2 HQLA shall take into account any reduction in eligible Level 2B HQLA on account of the 15% cap on Level 2B HQLA.
- 3 The calculation of the 15% cap on Level 2B HQLA shall take into account the impact on the stock of HQLA of the amounts of HQLA involved in secured funding, secured lending and collateral swap transactions maturing within 30 calendar days. The maximum amount of adjusted Level 2B HQLA in the stock of HQLA shall be equal to 15/85 of the sum of the adjusted amounts of Level 1 and Level 2 HQLA, or, in cases where the 40% cap is binding, up to a maximum of 1/4 of the adjusted amount of Level 1 HQLA, both after haircuts have been applied.
- 4 Further, the calculation of the 5% cap on Level 2B(II) HQLA shall take into account the impact on the stock of HQLA of the amounts of HQLA assets involved in secured funding, secured lending and collateral swap transactions maturing within 30 calendar days. The maximum amount of adjusted Level 2B(II) HQLA in the stock of HQLA shall be equal to 5/95 of the sum of the adjusted amounts of Level 1, Level 2A and Level 2B(II) HQLA, or in cases where the 15% cap is binding, up to a maximum of 5/85 of the adjusted amount of Level 1 and Level 2A HQLA, or in cases where the 40% cap is binding, up to a maximum of 5/60 of the adjusted amount of Level 1 and, after haircuts have been applied.
- 5 The adjusted amount of Level 1, Level 2A, Level 2B(I) and Level 2B(II) HQLA is defined as the amount of Level 1, Level 2A, Level 2B(I) and Level 2B(II) HQLA that would result after unwinding those short-term secured funding, secured lending and collateral swap transactions involving the exchange of any HQLA for any Level 1, Level 2A, Level 2B(I) and Level 2B(II) HQLA (including cash) that meet, or would meet if

¹⁸ Refer to paragraph 60

¹⁹ Refer to paragraph 92

held unencumbered, the operational requirements for HQLA set out in paragraph 22 of the Notice. In this context, short-term transactions are transactions with maturity date up to and including 30 calendar days. Relevant haircuts would be applied prior to calculation of the respective caps.

- 6 “Unadjusted value” refers to the value of the relevant category of HQLA after accounting for the haircuts as specified in paragraph 26 of the Notice.
- 7 “Adjusted value” refers to the adjusted value of the relevant category of HQLA after accounting for the exchange of assets in secured funding, secured lending and collateral swap transactions maturing within 30 calendar days.
- 8 The formula for the calculation of HQLA is as follows:

$$\text{HQLA} = \text{Unadjusted Level 1 HQLA} + \text{Unadjusted Level 2A HQLA} + \text{Unadjusted Level 2B(I) HQLA} + \text{Unadjusted Level 2B(II) HQLA} - \text{Adjustment for 5\% Level 2B(II) HQLA cap} - \text{Adjustment for 15\% Level 2B HQLA cap} - \text{Adjustment for 40\% Level 2 HQLA cap}$$

Where:

- a) Adjustment for 5% Level 2B(II) HQLA cap = $\text{MAX} (\text{Adjusted Level 2B(II) HQLA} - (5/95) * (\text{Adjusted Level 1 HQLA} + \text{Adjusted Level 2A HQLA} + \text{Adjusted Level 2B(I) HQLA}), \text{Adjusted Level 2B(II) HQLA} - (5/85) * (\text{Adjusted Level 1 HQLA} + \text{Adjusted Level 2A HQLA}), \text{Adjusted Level 2B(II) HQLA} - (5/60) * \text{Adjusted Level 1 HQLA}, 0)$
- b) Adjustment for 15% Level 2B HQLA cap = $\text{MAX} ((\text{Adjusted Level 2B(I) HQLA} + \text{Adjusted Level 2B(II) HQLA} - \text{Adjustment for 5\% Level 2B(II) HQLA cap}) - (15/85) * (\text{Adjusted Level 1 HQLA} + \text{Adjusted Level 2A HQLA}), \text{Adjusted Level 2B(I) HQLA} + \text{Adjusted Level 2B(II) HQLA} - \text{Adjustment for 5\% Level 2B(II) HQLA cap} - (15/60) * \text{Adjusted Level 1 HQLA}, 0)$
- c) Adjustment for 40% Level 2 HQLA cap = $\text{MAX} ((\text{Adjusted Level 2A HQLA} + \text{Adjusted Level 2B(I) HQLA} + \text{Adjusted Level 2B(II) HQLA} - \text{Adjustment for 5\% Level 2B(II) HQLA cap} - \text{Adjustment for 15\% Level 2B(I) HQLA cap}) - (2/3) * \text{Adjusted Level 1 HQLA}, 0)$

HQLA haircuts, outflow and inflow rates

Item	Rate
HQLA	
A. Level 1 HQLA:	
<ul style="list-style-type: none"> - Notes and coins - Qualifying marketable securities from sovereigns, central banks, PSEs, and multilateral development banks - Qualifying central bank reserves - Domestic sovereign or central bank debt for non-0% risk-weighted sovereigns 	100%
B. Level 2 HQLA (maximum of 40% of HQLA):	
Level 2A HQLA	
<ul style="list-style-type: none"> - Sovereign, central bank, multilateral development banks, and PSE assets qualifying for 20% risk weighting - Qualifying corporate debt securities rated AA- or higher - Qualifying covered bonds rated AA- or higher 	85%
Level 2B HQLA (maximum of 15% of HQLA)	
Level 2B(I) HQLA	
<ul style="list-style-type: none"> - Qualifying corporate debt securities rated between A+ and A- 	50%
Level 2B(II) HQLA (maximum of 5% of HQLA)	
<ul style="list-style-type: none"> - Qualifying corporate debt securities rated between BBB+ and BBB- 	50%
<ul style="list-style-type: none"> - Qualifying sovereign and central bank debt securities rated between BBB+ and BBB- 	50%
<ul style="list-style-type: none"> - Qualifying Ordinary shares, excluding preference shares and treasury shares 	50%
<ul style="list-style-type: none"> - Qualifying RMBS 	75%
Total value of HQLA	

Item	Rate
Cash Outflows	
A. Retail deposits:	
Demand deposits and term deposits (less than 30 days maturity)	5%
- Stable deposits (fully insured by the Singapore Deposit Insurance Corporation Limited - SDIC)	
- Stable deposits (fully insured by other effective government deposit insurance scheme)	To follow host jurisdiction's rate
- Less stable retail deposits	10%
Term deposits with residual maturity greater than 30 days	0%
B. Unsecured wholesale funding:	
Demand and term deposits (less than 30 days maturity) provided by small business customers:	
- Stable deposits	5%
- Less stable deposits	10%
Operational deposits generated by clearing, custody and cash management activities:	25%
- Portion covered by deposit insurance	5%
Cooperative banks in an institutional network (qualifying deposits with the centralised institution)	25%
Non-financial corporates, sovereigns, central banks, multilateral development banks, and PSEs	40%
- If the entire amount fully covered by deposit insurance scheme	20%
Other legal entity customers not included above.	100%
Retail/Small Business Customer deposits in other jurisdictions	To follow host jurisdiction's rate
C. Secured funding:	
- Secured funding transactions with central bank counterparty or backed by Level 1 HQLA with any counterparty.	0%
- Secured funding transactions backed by Level 2A HQLA, with any counterparty	15%
- Secured funding transactions backed by non-Level 1 or non-Level 2A HQLA, with domestic sovereigns, multilateral development banks, or domestic PSEs with risk weight of 20% or lower as a counterparty	25%
- Backed by RMBS eligible for inclusion in Level 2B	25%
- Backed by other Level 2B HQLA	50%
- All other secured funding transactions	100%

Item	Rate
D. Additional requirements:	
Liquidity needs (e.g. collateral calls) related to financing transactions, derivatives and other contracts	3 notch downgrade
Market valuation changes on derivatives transactions (largest absolute net 30-day collateral flows realised during the preceding 24 months)	Look back approach
Valuation changes on non-Level 1 posted collateral securing derivatives	20%
Excess collateral held by a bank related to derivative transactions that could contractually be called at any time by its counterparty	100%
Liquidity needs related to collateral contractually due from the reporting bank on derivatives transactions	100%
Increased liquidity needs related to derivative transactions that allow collateral substitution to non-HQLA assets	100%
ABCP, SIVs, conduits, SPVs, etc.:	
- Liabilities from maturing ABCP, SIVs, SPVs, etc. (applied to maturing amounts and returnable assets)	100%
- Asset Backed Securities (including covered bonds) applied to maturing amounts.	100%
Currently undrawn committed credit and liquidity facilities provided to:	
- Retail and small business customers	5%
- Non-financial corporate, sovereigns and central banks, multilateral development banks, and PSEs	10% for credit, 30% for liquidity
- Bank subject to prudential supervision	40%
- Other financial institutions (include securities firms, insurance companies)	40% for credit, 100% for liquidity
- Other legal entity customers, credit and liquidity facilities	100%
Other contingent funding liabilities (such as guarantees, letters of credit, revocable credit and liquidity facilities, etc.)	
- Trade finance	3%
- Customer short positions covered by other customers' collateral	50%
- Others	100% of expected amount unless otherwise stated
Any additional contractual outflows	100%
Net derivatives cash outflows	100%
Any other contractual cash outflows	100%
Total cash outflows	

Item	Rate
Cash Inflows	
Maturing secured lending transactions backed by the following collateral:	
- Level 1 HQLA:	0%
- Level 2A HQLA:	15%
- Level 2B HQLA (eligible RMBS):	25%
- Level 2B HQLA (Others):	50%
Margin lending backed by all other collateral	50%
All other assets	100%
Credit or liquidity facilities provided to the reporting bank	0%
Operational deposits held at other financial institutions (include deposits held at centralised institution of network of co-operative banks)	0%
Other inflows by counterparty:	
- Amount to be received from retail counterparties	50%
- Amount to be received from non-financial wholesale counterparties, from transactions other than those listed in above inflow categories	50%
- Amount to be received from financial institutions and central banks, from transactions others than those listed in above inflow categories	100%
Net derivatives cash inflows	100%
Other contractual cash inflows not included above.	0%
Total cash inflows	
Total net cash outflows = Total cash outflows minus min [total cash inflows, 75% of gross outflows]	
LCR = HQLA / Total net cash outflows	

Principles for Sound Liquidity Risk Management and Supervision

The guidelines referred to in paragraph 5A are as follows:

- a) a bank should actively monitor and control liquidity risk exposures and funding needs at the level of individual legal entities, foreign branches and subsidiaries, and the banking group as a whole, taking into account legal, regulatory and operational limitations to the transferability of liquidity. For the purposes of Appendix 8, “banking group” refers to the bank and its banking group entities and “banking group entity” means any subsidiary or any other entity which is treated as part of a bank’s group of entities according to Accounting Standards as defined in section 4(1) of the Companies Act (Cap 50);
- b) where applicable, a bank should have processes in place to capture all existing liquidity transfer restrictions to the extent practicable, and to monitor the rules and regulations in the jurisdictions in which the banking group operates and assess their liquidity implications for the group as a whole;
- c) a bank should conduct their own stress tests to assess the level of liquidity they should hold, and construct their own scenarios that could cause difficulties for their specific business activities. Such internal stress tests should incorporate time horizons longer than 30 days. D-SIBs should share the results of these additional stress tests with supervisors;
- d) a bank should monitor the legal entity and physical location where collateral is held and how it may be mobilised in a timely manner. Specifically, it should have a policy in place that identifies legal entities, geographical locations, currencies and specific custodial or bank accounts where liquid assets are held. For the purposes of this Appendix, “liquid assets” means, in a relation to a bank which must comply with –
 - i) Part I of this Notice, assets approved under paragraph 7, and
 - ii) Part II of the Notice, assets approved under paragraph 21;
- e) a bank should actively manage its intraday liquidity positions and risks to meet payment and settlement obligations on a timely basis under both normal and stressed conditions and thus contribute to the smooth functioning of payment and settlement systems;
- f) a bank should meet their liquidity needs in each currency and maintain liquid assets consistent with the distribution of their liquidity needs by currency. The bank should be able to use the liquid assets to generate liquidity in the currency and jurisdiction in which the net cash outflows arise. In managing foreign exchange liquidity risk, the bank should take into account the risk that its ability to swap currencies and access the relevant foreign exchange markets may erode rapidly under stressed conditions. A bank

should be aware that sudden, adverse exchange rate movements could sharply widen existing mismatched positions and alter the effectiveness of any foreign exchange hedges in place;

- g) a bank should ensure that liquid assets held are well diversified within the asset classes themselves (except for sovereign debt of the bank's home jurisdiction or from the jurisdiction in which the bank operates; central bank reserves; central bank debt securities; and cash). Banks should have policies and limits in place in order to avoid concentration with respect to asset types, issue and issuer types, and currency (consistent with the distribution of net cash outflows by currency) within asset classes;
- h) a bank should monitor the concentration of expected inflows across wholesale counterparties in the context of banks' liquidity management in order to limit overreliance on the arrival of expected inflows from one or a limited number of wholesale counterparties.