Guideline

Title	Liquidity Adequacy Requirements (LAR) (2026) Chapter 7 – Intraday Liquidity Monitoring Tools
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Chapter 7 – Intraday Liquidity Monitoring Tools

1. This chapter is drawn from the Basel Committee on Banking Supervision's (BCBS) Monitoring tools for intraday liquidity management (April 2013). For reference, the Basel Consolidated Framework text paragraph numbers that are associated with the text appearing in this chapter are indicated in square brackets at the end of each paragraph.

2. Management of intraday liquidity risk forms a key element of an institution's overall liquidity risk management framework as outlined in BCBS Sound Principles[1] and OSFI's Guideline B-6: Liquidity Principles.

3. Specifically, Principle 8 of the Sound Principles and Principle 12 of OSFI's Guideline B-6: Liquidity Principles state that "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." Moreover, six operational elements that should

be included in a bank's strategy for managing intraday liquidity risk are identified:

1. have the capacity to measure expected daily gross liquidity inflows and outflows, anticipate the intraday timing of these flows where possible, and forecast the range of potential net funding shortfalls that might arise at different points during the day;
2. have the capacity to monitor intraday liquidity positions against expected activities and available resources (balances, remaining intraday credit capacity, available collateral);
3. arrange to acquire sufficient intraday funding to meet its intraday objectives;
4. have the ability to manage and mobilise collateral as necessary to obtain intraday funds;
5. have a robust capability to manage the timing of its liquidity outflows in line with its intraday objectives; and
6. be prepared to deal with unexpected disruptions to its intraday liquidity flows.

4. The BCBS, in consultation with the Committee on Payment and Settlement Systems (CPSS2), has developed a set of quantitative tools to enable supervisors to monitor institutions' intraday liquidity risk and their ability to meet payment and settlement obligations on a timely basis under both normal and stressed conditions. The monitoring tools will complement the qualitative guidance in the BCBS Sound Principles and OSFI's Guideline B-6: Liquidity Principles.

5. Given the close relationship between the management of institutions' intraday liquidity risk and the smooth functioning of payment and settlement systems3, the tools will also be of benefit to central bank or other authorities responsible for the oversight of payment and settlement systems (overseers). It is envisaged that the introduction of monitoring tools for intraday liquidity will lead to closer co-operation between banking supervisors and the overseers in the monitoring of banks' payment behaviour.

6. The tools outlined in this chapter are for monitoring purposes only and apply to all institutions with relevant exposure to intraday liquidity risk, including those who participate in systemically important Financial Market Infrastructure (FMI), as designated by the Bank of Canada4. Direct clearers5 of Lynx are also subject to regulatory reporting.

7. Consistent with their broader liquidity risk management responsibilities, institution management will be responsible for collating and submitting the monitoring data for the tools to their supervisor.[6] It is recognised that institutions may need to liaise closely with counterparts, including payment system operators and correspondent banks, to collate these data. However, institutions and supervisors are not required to disclose these reporting requirements publicly. Public disclosure is not intended to be part of these monitoring tools. [Basel Framework, SRP 50.3]

7.1. Definitions and sources and usage of intraday liquidity

7.1.A. Definitions

8. For the purposes of this chapter, the following definitions will apply to the terms stated below:
    - Intraday Liquidity: funds which can be accessed during the business day, usually to enable institutions to make payments in real time;[7]
    - Business Day: the opening hours of the large-value payment system (LVPS)[8] or of correspondent banking services during which an institution can receive and make payments in a local jurisdiction;
    - Intraday Liquidity Risk: the risk that an institution fails to manage its intraday liquidity effectively, which could leave it unable to meet a payment obligation at the time expected, thereby affecting its own liquidity position and that of other parties.
    - Time-specific obligations: obligations which must be settled at a specific time within the day or have an expected intraday settlement deadline. [Basel Framework, SRP 50.48]

7.1.B. Intraday liquidity sources and uses

9. The following sets out the main constituent elements of an institution's intraday liquidity sources and usage.[9] (The list should not be taken as exhaustive.)
    1. Sources
        - **Own sources**
            - Reserve balances at the central bank;

- Collateral pledged with the central bank[10] or with ancillary systems[11] that can be freely converted into intraday liquidity;
- Unencumbered liquid assets[12] on an institution's balance sheet that can be freely converted into intraday liquidity;
- Secured and unsecured, committed and uncommitted credit lines[13] available intraday;
- Balances with other institutions that can be used for intraday settlement.

- **Other sources**
  - Payments received from other LVPS participants;
  - Payments received from ancillary systems;
  - Payments received through correspondent banking services.

2. Usage
   - Payments made to other LVPS participants;
   - Payments made to ancillary systems[14];
   - Payments made through correspondent banking services[15];
   - Secured and unsecured, committed and uncommitted credit lines offered intraday;
   - Contingent payments relating to a payment and settlement system's failure (e.g. as an emergency liquidity provider). [Basel Framework, SRP 50.49]

10. In correspondent banking, some customer payments are made across accounts held by the same correspondent bank. These payments do not give rise to an intraday liquidity source or usage for the correspondent bank as they do not link to the payment and settlement systems. However, these 'internalised payments' do have intraday liquidity implications for both the sending and receiving customer institutions and should be incorporated in their reporting of the monitoring tools. [Basel Framework, SRP 50.50]

7.2. Intraday liquidity monitoring tools

11. A number of factors influence an institution's usage of intraday liquidity in payment and settlement systems and its vulnerability to intraday liquidity shocks. As such, no single monitoring tool can provide supervisors with sufficient information to identify and monitor the intraday liquidity risk run by an institution. To achieve

this, seven separate monitoring tools have been developed (see Table 1). As not all of the tools will be relevant to all institutions, the tools have been classified in three groups to determine their applicability as follows:

- Category A: applicable to all institutions;
- Category B: applicable to institutions that provide correspondent banking services; and
- Category C: applicable to institutions which are direct participants. [Basel Framework, SRP 50.51]

Table 1

Category A - Tools applicable to all institutions	• A(i) Daily maximum intraday liquidity usage • A(ii) Available intraday liquidity at the start of the business day • A(iii) Total payments • A(iv) Time-specific obligations
Category B - Tools applicable to institutions that provide correspondent banking services	• B(i) Value of payments made on behalf of correspondent banking customers • B(ii) Intraday credit lines extended to customers
Category C - Tool applicable to institutions which are direct participants	C(i) Intraday throughput

7.2.A. Monitoring tools applicable to all institutions

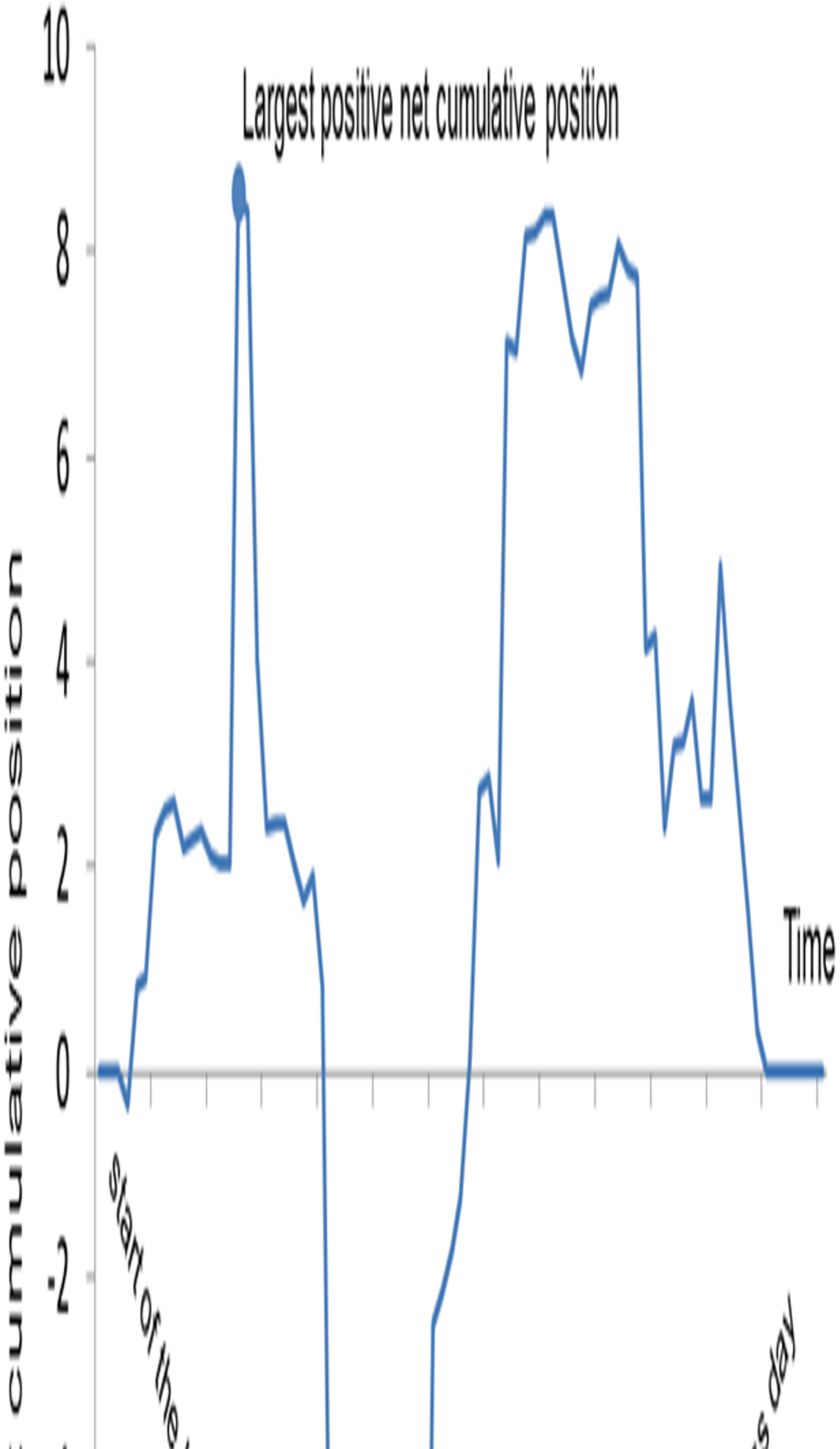
(i) Daily maximum intraday liquidity usage

12. This tool will enable supervisors to monitor an institution's intraday liquidity usage in normal conditions. It will require institutions to monitor the net balance of all payments made and received during the day over their settlement account, either with the central bank (if a direct participant) or over their account held with a correspondent bank (or accounts, if more than one correspondent bank is used to settle payments). The largest net negative position during the business day on the account(s), (i.e., the largest net cumulative balance between payments made and received), will determine an institution's maximum daily intraday liquidity usage. The net position should be determined by settlement time stamps (or the equivalent) using

transaction-by-transaction data over the account(s). The largest net negative balance on the account(s) can be calculated after close of the business day and does not require real-time monitoring throughout the day. [Basel Framework, SRP 50.64]

13. For illustrative purposes only, the calculation of the tool is shown in Figure 1. A positive net position signifies that the institution has received more payments than it has made during the day. Conversely, a negative net position signifies that the institution has made more payments than it has received.16 For direct participants, the net position represents the change in its opening balance with the central bank. For institutions that use one or more correspondent banks, the net position represents the change in the opening balance on the account(s) with its correspondent bank(s). [Basel Framework, SRP 50.65]

Figure 1: Net cumulative position over time


Largest positive net cumulative position
10
8
6
4
2
0
-2
Time
start of the

Text description - Net cumulative position over time

This line chart illustrates an institution's intraday liquidity usage. The X axis represents the timeline between start of the business day and end of the business day. The Y axis represent the net cumulative position from which the largest positive and negative positions can be observed. Beginning of day position should be zero and subsequently fluctuate according to the net payments made or received.

14. Assuming that an institution runs a negative net position at some point intraday, it will need access to intraday liquidity to fund this balance. The minimum amount of intraday liquidity that an institution would need to have available on any given day would be equivalent to its largest negative net position. (In the illustration above, the intraday liquidity usage would be 10 units.) [Basel Framework, SRP 50.66]

15. Conversely, when an institution runs a positive net cumulative position at some point intraday, it has surplus liquidity available to meet its intraday liquidity obligations. This position may arise because the institution is relying on payments received from other LVPS participants to fund its outgoing payments. (In the illustration above, the largest positive net cumulative position would be 8.6 units.) [Basel Framework, SRP 50.67]

16. Institutions should report their three largest daily negative net cumulative positions on their settlement or correspondent account(s) in the reporting period and the daily average of the negative net cumulative position over the period. The largest positive net cumulative positions, and the daily average of the positive net cumulative positions, should also be reported. As the reporting data accumulates, supervisors will gain an indication of the daily intraday liquidity usage of an institution in normal conditions. [Basel Framework, SRP 50.68]

(ii) Available intraday liquidity at the start of the business day

17. This tool will enable supervisors to monitor the amount of intraday liquidity an institution has available at the start of each day to meet its intraday liquidity requirements in normal conditions. Institutions should report both the three smallest sums by value of intraday liquidity available at the start of each business day in the

reporting period, and the average amount of available intraday liquidity at the start of each business day in the reporting period. The report should also break down the constituent elements of the liquidity sources available to the institution. [Basel Framework, SRP 50.69]

18. Drawing on the liquidity sources set out in Section 7.1.B, institutions should discuss and agree with their supervisor the sources of liquidity which they should include in the calculation of this tool. Where institutions manage collateral on a cross-currency and/or cross-system basis, liquidity sources not denominated in the currency of the intraday liquidity usage and/or which are located in a different jurisdiction, may be included in the calculation if the institution can demonstrate to the satisfaction of its supervisor that the collateral can be transferred intraday freely to the system where it is needed. [Basel Framework, SRP 50.70]

19. As the reporting data accumulates, supervisors will gain an indication of the amount of intraday liquidity available to an institution to meet its payment and settlement obligations in normal conditions. [Basel Framework, SRP 50.71]

(iii) Total payments

20. This tool will enable supervisors to monitor the overall scale of an institution's payment activity. For each business day in a reporting period, institutions should calculate the total of their gross payments sent and received in the LVPS and/or, where appropriate, across any account(s) held with a correspondent bank(s). Institutions should report the three largest daily values for gross payments sent and received in the reporting period and the average daily figure of gross payments made and received in the reporting period. [Basel Framework, SRP 50.72]

(iv) Time-specific obligations

21. This tool will enable supervisors to gain a better understanding of an institution's time specific obligations.[17] Failure to settle such obligations on time could result in financial penalty, reputational damage to the institution or loss of future business. [Basel Framework, SRP 50.73]

22. Institutions should calculate the total value of time-specific obligations that they settle each day and report the three largest daily total values and the average daily total value in the reporting period to give supervisors an indication of the scale of these obligations. [Basel Framework, SRP 50.74]

7.2.B. Monitoring tools applicable to institutions that provide correspondent banking services

(i) Value of payments made on behalf of correspondent banking customers[18]

23. This tool will enable supervisors to gain a better understanding of the proportion of an institution's payment flows that arise from its provision of correspondent banking services. These flows may have a significant impact on the institution's own intraday liquidity management.[19] [Basel Framework, SRP 50.76]

24. Institutions should calculate the total value of payments they make on behalf of all customers of their correspondent banking services each day and report the three largest daily total values and the daily average total value of these payments in the reporting period. [Basel Framework, SRP 50.77]

(ii) Intraday credit lines extended to customers[20]

25. This tool will enable supervisors to monitor the scale of an institution's provision of intraday credit to its correspondent banking customers. Institutions should report the three largest intraday credit lines extended to their correspondent banking customers in the reporting period, including whether these lines are secured or committed and the use of those lines at peak usage.[21] [Basel Framework, SRP 50.78]

7.2.C. Monitoring tool applicable to institutions which are direct participants

(i) Intraday throughput

26. This tool will enable supervisors to monitor the throughput[22] of a direct participant's daily payments activity across its settlement account. Direct participants should report the daily average in the reporting period of the percentage of their outgoing payments (relative to total payments) that settle by specific times during the day, by value within each hour of the business day.[23] Over time, this will enable supervisors to identify any changes in an institution's payment and settlement behaviour. [Basel Framework, SRP 50.80]

7.3. Intraday liquidity stress scenarios

27. The monitoring tools in section 7.2 will provide supervisors with monthly information on an institution's intraday liquidity profile in normal conditions. During their discussions on broader liquidity risk management, institutions and supervisors should also consider the impact of an institution's intraday liquidity requirements in stress conditions. As guidance, four possible (but non-exhaustive) stress scenarios have been identified and are described in section 7.3, paragraphs 29 to 35.[24] Stress testing should be reported on a quarterly basis without management actions. To demonstrate the value and importance of management actions on stress testing, institutions should consider them annually as part of their development and testing of contingency funding plans and/or recovery and resolution plans. [Basel Framework, SRP 50.82]

28. Institutions should use the scenarios to assess how their intraday liquidity profile in normal conditions would change in conditions of stress and discuss with their supervisor how any adverse impact would be addressed either through contingency planning arrangements and/or their wider intraday liquidity risk management framework. [Basel Framework, SRP 50.86]

Stress scenarios

(i) Own financial stress: an institution suffers, or is perceived to be suffering from, a stress event

29. For a direct participant, own financial and/or operational stress may result in counterparties deferring payments to later in the day and/or withdrawing intraday credit lines. This, in turn, may result in the institution having to fund more of its payments from its own intraday liquidity sources to avoid having to defer its own payments.[25] [Basel Framework, SRP 50.82 (1)(a)]

30. For institutions that use correspondent banking services, an own financial stress may result in intraday credit lines being withdrawn by the correspondent bank(s), and/or its own counterparties deferring payments. This may require the institution having either to prefund its payments and/or to collateralize its intraday credit line(s). [Basel Framework, SRP 50.82 (1)(b)]

(ii) Counterparty stress: an institution's largest counterparty suffers an intraday stress event which prevents it from making payments

31. A counterparty stress may result in direct participants and institutions that use correspondent banking services being unable to rely on incoming payments from the stressed counterparty[26], reducing the availability of intraday liquidity that can be sourced from the receipt of the counterparty's payments. [Basel Framework, SRP 50.82 (2)]

(iii) Market-wide credit or liquidity stress

32. A market-wide credit or liquidity stress may have adverse implications for the value of liquid assets that an institution holds to meet its intraday liquidity usage. A widespread fall in the market value and/or credit rating of an institution's unencumbered liquid assets may constrain its ability to raise intraday liquidity from the central bank. In a worst-case scenario, a material credit downgrade of the assets may result in the assets no longer meeting the eligibility criteria for the central bank's intraday liquidity facilities. [Basel Framework, SRP 50.82 (4)]

33. For an institution that uses correspondent banking services, a widespread fall in the market value and/or credit rating of its unencumbered liquid assets may constrain its ability to raise intraday liquidity from its correspondent bank(s). [Basel Framework, SRP 50.82 (4)(a)]

34. Institutions which manage intraday liquidity on a cross-currency basis should consider the intraday liquidity implications of a closure of, or operational difficulties in, currency swap markets and stresses occurring in multiple systems simultaneously. [Basel Framework, SRP 50.82(4)(b)]

(iv) A customer bank's stress: a customer bank of a correspondent bank suffers a stress event

35. A customer bank's stress may result in other institutions deferring payments to the customer, creating a further loss of intraday liquidity at its correspondent bank. [Basel Framework, SRP 50.82 (3)]

Application of the stress scenarios

36. For the **own financial stress** and **counterparty stress**, all institutions should consider the likely impact that these stress scenarios would have on their daily maximum intraday liquidity usage, available intraday liquidity at the start of the business day, total payments and time-specific obligations. [Basel Framework, SRP 50.83]

37. For the **customer bank's stress** scenario, institutions that provide correspondent banking services should consider the likely impact that this stress scenario would have on the value of payments made on behalf of its customers and intraday credit lines extended to its customers. [Basel Framework, SRP 50.84]

38. For the **market-wide stress**, all institutions should consider the likely impact that the stress would have on their sources of available intraday liquidity at the start of the business day. [Basel Framework, SRP 50.85]

39. While each of the monitoring tools has value in itself, combining the information provided by the tools will give supervisors a comprehensive view of an institution's resilience to intraday liquidity shocks. Examples on how the tools could be used in different combinations by supervisors to assess an institution's resilience to intraday liquidity risk are presented in Annex 2. [Basel Framework, SRP 50.87]

7.4. Scope of application

40. Institutions generally manage their intraday liquidity risk on a system-by-system basis in a single currency, but it is recognised that practices differ across institutions and jurisdictions, depending on the institutional set up of an institution and the specifics of the systems in which it operates. The following considerations aim to help institutions and supervisors determine the most appropriate way to apply the tools. Should institutions need further clarification, they should discuss the scope of application with their supervisors. [Basel Framework, SRP 50.52]

(i) Systems

41. Institutions which are direct participants to an LVPS can manage their intraday liquidity in very different ways. Some institutions manage their payment and settlement activity on a system-by-system basis. Others make use of direct intraday liquidity 'bridges'[27] between LVPS, which allow excess liquidity to be transferred from one system to another without restriction. Other formal arrangements exist, which allow funds to be transferred from one system to another (such as agreements for foreign currency liquidity to be used as collateral for domestic systems). [Basel Framework, SRP 50.53]

42. To allow for these different approaches, direct participants should apply a 'bottom-up' approach to determine the appropriate basis for reporting the monitoring tools. The following sets out the principles which such institutions should follow:

    - As a baseline, individual institutions should report on each LVPS in which they participate on a system-by-system-basis;
    - If there is a direct real-time technical liquidity bridge between two or more LVPS, the intraday liquidity in those systems may be considered fungible. At least one of the linked LVPS may therefore be considered an ancillary system for the purpose of the tools;
    - If an institution can demonstrate to the satisfaction of its supervisor that it regularly monitors positions and uses other formal arrangements to transfer liquidity intraday between LVPS which do not have a direct technical liquidity bridge, those LVPS may also be considered as ancillary systems for reporting purposes. [Basel Framework, SRP 50.54]

43. Ancillary systems (e.g. retail payment systems, CLS, some securities settlement systems and central counterparties), place demands on an institution's intraday liquidity when these systems settle the institution's obligations in an LVPS. Consequently, separate reporting requirements will not be necessary for such ancillary systems. [Basel Framework, SRP 50.55]

44. Institutions that use correspondent banking services should base their reports on the payment and settlement activity over their account(s) with their correspondent bank(s). Where more than one

correspondent bank is used, the institution should report per correspondent bank. For institutions which access an LVPS indirectly through more than one correspondent bank, the reporting may be aggregated, provided that the institution can demonstrate to the satisfaction of its supervisor that it is able to move liquidity between its correspondent banks. [Basel Framework, SRP 50.56]

45. Institutions which operate as direct participants of an LVPS but which also make use of correspondent banks should discuss whether they can aggregate these for reporting purposes with their supervisor. Aggregation may be appropriate if the payments made directly through the LVPS and those made through the correspondent bank(s) are in the same jurisdiction and same currency. [Basel Framework, SRP 50.57]

(ii) Currency

46. Institutions that manage their intraday liquidity on a currency-by-currency basis should report on an individual currency basis[28] (including USD, EUR, GBP, and any other currency determined to be necessary by OSFI). [Basel Framework, SRP 50.58]

47. If an institution can prove to the satisfaction of its supervisor that it manages liquidity on a cross-currency basis and has the ability to transfer funds intraday with minimal delay – including in periods of acute stress – then the intraday liquidity positions across currencies may be aggregated for reporting purposes. However, institutions should also report at an individual currency level so that supervisors can monitor the extent to which firms are reliant on foreign exchange swap markets. [Basel Framework, SRP 50.59]

48. When the level of activity of an institution's payment and settlement activity in any one particular currency is considered de minimis with the agreement of the supervisor[29] a reporting exemption could apply and separate returns need not be submitted. [Basel Framework, SRP 50.60]

(iii) Organisational structure

49. The appropriate organisational level for each institution's reporting of its intraday liquidity data should be determined by the supervisor, but it is expected that the monitoring tools will typically be applied at a significant individual legal entity level. The decision on the appropriate entity should consider any potential

impediments to moving intraday liquidity between entities within a group, including the ability of supervisory jurisdictions to ring-fence liquid assets, timing differences and any logistical constraints on the movement of collateral. [Basel Framework, SRP 50.61]

50. Where there are no impediments or constraints to transferring intraday liquidity between two (or more) legal entities intraday, and institutions can demonstrate this to the satisfaction of their supervisor, the intraday liquidity requirements of the entities may be aggregated for reporting purposes. [Basel Framework, SRP 50.62]

(iv) Responsibility of home and host supervisors

51. For cross-border banking groups, where an institution operates in LVPS and/or with a correspondent bank(s) outside the jurisdiction where it is domiciled, both home and host supervisors will have an interest in ensuring that the institution has sufficient intraday liquidity to meet its obligations in the local LVPS and/or with its correspondent bank(s).[30] The allocation of responsibility between home and host supervisor will ultimately depend upon whether the institution operating in the non-domestic jurisdiction does so via a branch or a subsidiary.

    For a branch operation

    - The home (consolidated) supervisor should have responsibility for monitoring through the collection and examination of data that its banking groups can meet their payment and settlement responsibilities in all countries and all currencies in which they operate. The home supervisor should therefore have the option to receive a full set of intraday liquidity information for its banking groups, covering both domestic and non-domestic payment and settlement obligations.
    - The host supervisor should have the option to require foreign branches in their jurisdiction to report intraday liquidity tools to them, subject to materiality.

    For a subsidiary active in a non-domestic LVPS and/or correspondent bank(s)

- The host supervisor should have primary responsible for receiving the relevant set of intraday liquidity data for that subsidiary.
- The supervisor of the parent institution (the home consolidated supervisor) will have an interest in ensuring that a non-domestic subsidiary has sufficient intraday liquidity to participate in all payment and settlement obligations. The home supervisor should therefore have the option to require non-domestic subsidiaries to report intraday liquidity data to them as appropriate. [Basel Framework, SRP 50.63]

Annex 1 – Practical example of the monitoring tools

The following example illustrates how the tools would operate for an institution on a particular business day.

Assume that on the given day, the institution's payment profile and liquidity usage is as follows:

Time	Sent	Received	Net
07:00	Payment A: 450		−450
07:58		200	−250
08:55	Payment B: 100		−350
10:00	Payment C: 200		**−550**
10:45		400	−150
11:59		300	+150
13:00	Payment D: 300		−150
13:45		350	**+200**
15:00	Payment E: 250		−50
15:32	Payment F: 100		−150
17:00		150	0

1. Direct participant

Details of the institution's payment profile are as followings:

- Payment A: 450
- Payment B: 100 – to settle obligations in an ancillary system
- Payment C: 200 – which has to be settled by 10 am
- Payment D: 300 – on behalf of a counterparty using some of a 500 unit unsecured credit line that the institution extends to the counterparty
- Payment E: 250
- Payment F: 100

The institution has 300 units of deposits with central banks and 500 units of eligible collateral.

A(i) Daily maximum liquidity usage

- **largest negative net cumulative positions: 550 units**
- **largest positive net cumulative positions: 200 units**

A(ii) Available intraday liquidity at the start of the business day

- 300 units of deposits with central banks + 500 units of eligible collateral (routinely transferred to the central bank) = **800 units**

A(iii) Total payments

- **Gross payments sent:** 450+100+200+300+250+100 = **1,400 units**
- **Gross payments received:** 200+400+300+350+150 = **1,400 units**

A(iv) Time-specific obligations

- 200 + value of ancillary payment (100) = **300 units**

B(i) Value of payments made on behalf of correspondent banking customers

- **300 units**

B(ii) Intraday credit line extended to customers

- **Value of intraday credit lines extended: 500 units**
- **Value of credit line used: 300 units**

C(i) Intraday throughput

Time	Cumulative sent	% sent
08:00	450	32.14
09:00	550	39.29
10:00	750	53.57
11:00	750	53.57
12:00	750	53.57
13:00	1050	75.00
14:00	1050	75.00
15:00	1300	92.86
16:00	1400	100.00
17:00	1400	100.00
18:00	1400	100.00

2. Institution that uses a correspondent bank

Details of the institution's payment profile are as followings:

- Payment A: 450
- Payment B: 100
- Payment C: 200 – which has to be settled by 10am

- Payment D: 300
- Payment E: 250
- Payment F: 100 – which has to be settled by 4pm

The institution has 300 units of account balance at the correspondent bank and 500 units of credit lines of which 300 units unsecured and also uncommitted. The intraday credit to meet FX obligations is 350 units.

A(i) Daily maximum intraday liquidity usage

- **largest negative net cumulative positions: 550 units**
- **largest positive net cumulative positions: 200 units**

A(ii) Available intraday liquidity at the start of the business day

- 300 units of account balance at the correspondent bank + 500 units of credit lines (of which 300 units unsecured and uncommitted) = **800 units**

A(iii) Total payments

- **Gross payments sent:** 450+100+200+300+250+100 = **1,400 units**
- **Gross payments received:** 200+400+300+350+150 = **1,400 units**

A(iv) Time-specific obligations

- 200 + 100 = **300 units**

[Basel Framework, SRP 50.88, 50.92]

Annex 2 – Combining the tools

The following is a non-exhaustive set of examples which illustrate how the tools could be used in different combinations by supervisors to assess an institution's resilience to intraday liquidity risk:

(1) Time-specific obligations relative to total payments and available intraday liquidity at the start of the business day

If a high proportion of an institution's payment activity is time critical, the institution has less flexibility to deal with unexpected shocks by managing its payment flows, especially when its amount of available intraday liquidity at the start of the business day is typically low. In such circumstances the supervisor might expect the institution to have adequate risk management arrangements in place or to hold a higher proportion of unencumbered assets to mitigate this risk.

(2) Available intraday liquidity at the start of the business day relative to the impact of intraday stresses on the institution's daily liquidity usage

If the impact of an intraday liquidity stress on an institution's daily liquidity usage is large relative to its available intraday liquidity at the start of the business day, it suggests that the institution may struggle to settle payments in a timely manner in conditions of stress.

(3) Relationship between daily maximum liquidity usage, available intraday liquidity at the start of the business day and the time-specific obligations

If an institution misses its time-specific obligations, it could have a significant impact on other institutions. If it were demonstrated that the institution's daily liquidity usage was high and the lowest amount of available intraday liquidity at the start of the business day were close to zero, it might suggest that the institution is managing its payment flows with an insufficient pool of liquid assets.

(4) Total payments and value of payments made on behalf of correspondent banking customers

If a large proportion of an institution's total payment activity is made by a correspondent bank on behalf of its customers and, depending on the type of the credit lines extended, the correspondent bank could be more vulnerable to a stress experienced by a customer. The supervisor may wish to understand how this risk is being mitigated by the correspondent bank.

(5) Intraday throughput and daily liquidity usage

If an institution starts to defer its payments and this coincides with a reduction in its liquidity usage (as measured by its largest positive net cumulative position), the supervisor may wish to establish whether the institution has taken a strategic decision to delay payments to reduce its usage of intraday liquidity. This behavioural change might also be of interest to the overseers given the potential knock-on implications to other participants in the LVPS. [Basel Framework, SRP 50.87]

Footnotes

1 Principles for Sound Liquidity Risk Management and Supervision.

2 The CPSS serves as a forum for central banks to monitor and analyse developments in payment and settlement arrangements as well as in cross-border and multicurrency settlement schemes. It consists of senior officials responsible for payment and settlement systems in central banks.

3 References to payment and/or settlement systems encompass payment systems and clearing and settlement systems for securities and derivatives (including central counterparties).

4 The Governor of the Bank of Canada has designated the following FMIs as systemically important to Canada's financial system: Lynx, CDSX, Canadian Derivatives Clearing Service, CLS Bank, and SwapClear.

5 Direct clearers, as used in this chapter, refers to institutions that clear directly with large-value payment systems.

6 As agreed by national authorities in a particular jurisdiction, the monitoring data may be collected by a relevant domestic oversight authority (e.g. payments system overseer) instead of the banking supervisor.

7 See CPSS: A glossary of terms used in payments and settlements systems, March 2003.

8 A LVPS is a funds' transfer system that typically handles large value and high-priority payments.

9 Not all elements will be relevant to all institutions as intraday liquidity profiles will differ between institutions (e.g. whether they access payment and settlement systems directly or indirectly or whether they provide correspondent banking services and intraday credit facilities to other institutions).

10 All collateral values reported should be presented after accounting for the central bank's haircuts.

11 Ancillary systems include other payment systems such as retail payment systems, CLS, securities settlement systems and central counterparties.

Unencumbered liquid assets should include any assets that an institution can access and liquidate in the early hours of the day. This should include assets eligible as part of the standing liquidity facility (SLF),

12 provided pricing conditions can be satisfied, including non-mortgage loan portfolios subject to a Bank of Canada 20% concentration limit. Non-SLF assets may also be included provided the institution has effective means to monetize them intraday.

13 Although uncommitted credit lines can be withdrawn in times of stress (see stress scenario (i) in Section 7.3), such lines are an available source of intraday liquidity in normal times.

14 Some securities settlement systems offer self-collateralisation facilities in co-operation with the central bank. Through these, participants can automatically post incoming securities from the settlement process as collateral at the central bank to obtain liquidity to fund their securities settlement systems' obligations. In these cases, intraday liquidity usages are only those related to the haircut applied by the central bank.

15 If an institution has nostro accounts with another institution, that other institution should be considered a correspondent bank to the extent that it provides similar services such as processing transactions, clearing checks, and managing foreign exchange on behalf of other institutions. The designation mainly depends on the nature and scope of the services provided, rather than the type of institution.

16 For the calculation of the net cumulative position, "payments received" do not include funds obtained through central bank intraday liquidity facilities.

17 These obligations include, for example, those for which there is a time-specific intraday deadline, those required to settle positions in other payment and settlement systems, those related to market activities (such as the delivery or return of money market transactions or margin payments), and other payments critical to an institution's business or reputation (see footnote 10 of the BCBS Sound Principles). Examples include the settlement of obligations in ancillary systems, CLS pay-ins or the return of overnight loans. Payments made to meet the throughput guidelines are not considered time-specific obligations for the purpose of this tool.

18 The term ‘customers’ includes all entities for which the institution provides correspondent banking services.

19 Paragraph 79 of the BCBS Sound Principles states that: "[T]he level of a bank's gross cash inflows and outflows may be uncertain, in part because those flows may reflect the activities of its customers, especially where the bank provides correspondent or custodian services."

Not all elements will be relevant to all institutions as intraday liquidity profiles will differ between institutions (e.g. whether they access payment and settlement systems directly or indirectly or whether they provide

20 correspondent banking services and intraday credit facilities to other institutions, etc.).

21 The figure to be reported for the three largest intraday credit lines extended to customers should include uncommitted and unsecured lines. This disclosure does not change the legal nature of these credit lines.

22 Throughput targets help reduce intraday liquidity requirements at the system level by promoting synchronization in the flow of payments. When throughput targets are met, participants receive a significant proportion of payments in a timely fashion, enabling them to recycle the incoming liquidity to make their own payments.

23 It should be noted that some jurisdictions already have throughput rules or guidelines in place. For example, in the case of Canada's Lynx, Payments Canada recommends that Lynx participants abide by the following daily throughput targets as described in Lynx Technical Specifications and Procedures (TSP-004) (PDF).

24 Institutions are encouraged to consider reverse stress scenarios and other stress testing scenarios as appropriate (for example, the impact of natural disasters, currency crisis, etc.). In addition, institutions should use these stress testing scenarios to inform their intraday liquidity risk tolerance and contingency funding plans.

25 Institutions should reflect historical stress experience to calibrate severe but plausible stress from delayed payments and client drawdowns of intraday credit. Institutions' methodologies should allow flexibility to adjust and scale calibration, as appropriate.

26 Counterparty, as used in this chapter, refers to other institutions that are direct participants in the relevant FMI.

27 A direct intraday liquidity bridge is a technical functionality built into two or more LVPS that allows banks to make transfers directly from one system to the other intraday.

28 All correspondent banks with gross payment flows greater than or equal to 5% of relevant currency payments should be included.

29 As an indicative threshold, supervisors may consider that a currency is considered "significant" if the aggregate liabilities denominated in that currency amount to 5% or more of the institution's total liabilities.

30 Paragraph 145 of the BCBS Sound Principles states that "the host supervisor needs to understand how the liquidity profile of the group contributes to risks to the entity in its jurisdiction, while the home supervisor requires information on material risks a foreign branch or subsidiary poses to the banking group as a whole."