

Basel III Framework on Liquidity Standards
Monitoring Tools for Intraday Liquidity Management

1. Introduction

1.1 A bank's failure to effectively manage intra-day liquidity could lead to default in meeting its payment obligations in time, which may affect not only its own liquidity position but also that of its counterparties. In the face of credit concerns or general market stress, counterparties may view the failure to settle payments as a sign of financial weakness and in turn, withhold or delay payments to the bank causing additional liquidity pressures. Given the inter-dependencies that exist among systems, this may lead to liquidity dislocations that may cascade rapidly across many systems and institutions. As such, the management of intra-day liquidity risk should be considered as a crucial part of liquidity risk management of the bank.

1.2 The importance of management of intraday liquidity risk has been stressed in the *Principles for Sound Liquidity Risk Management and Supervision* (the Sound Principles) published by the Basel Committee on Banking Supervision (BCBS) in September 2008. Principle 8 of the Sound Principles focuses specifically on intraday liquidity risk and states 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.”

1.3 Principle 8 identifies six operational elements that should be included in a bank's strategy for managing intraday liquidity risk. These state that a bank should:

(i) *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;*

- (ii) have the capacity to monitor intraday liquidity positions against expected activities and available resources (balances, remaining intraday credit capacity, available collateral);*
- (iii) arrange to acquire sufficient intraday funding to meet its intraday objectives;*
- (iv) have the ability to manage and mobilise collateral as necessary to obtain intraday funds;*
- (v) have a robust capability to manage the timing of its liquidity outflows in line with its intraday objectives; and*
- (vi) be prepared to deal with unexpected disruptions to its intraday liquidity flows.*

1.4 Further, the BCBS, in consultation with the Committee on Payment and Settlement Systems (CPSS) has developed a set of quantitative tools to enable banking supervisors to monitor banks' 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 Sound Principles. The relevant operating guidelines, reporting requirements and other instructions in this regard as applicable to banks having operations in India are given in this circular.

1.5 Consistent with their broader liquidity risk management responsibilities as stipulated in our [circular DBOD.BP.No.56/21.04.098/2012-13 dated November 7, 2012](#) on '**Liquidity Risk Management by Banks**', banks should collate and submit the monitoring data under the returns prescribed in this circular to the Department of Banking Supervision (DBS). For this purpose, banks may need to liaise closely with counterparts, including payment system operators and correspondent banks, to collate these data. However, banks are not required to disclose these reporting requirements publicly.

2. Definitions, Sources and Usage of Intraday Liquidity

A. Definitions

2.1 For the purpose of this document, the following definitions will apply to the terms stated below.

- **Intraday Liquidity:** funds which can be accessed during the business day, usually to enable banks to make payments in real time;
- **Business Day:** the opening hours of the LVPS¹ or of correspondent banking services during which a bank can receive and make payments in a local jurisdiction;
- **Intraday Liquidity Risk:** the risk that a bank 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.

B. Intraday liquidity sources and usage

2.2 The main constituent of a bank's intraday liquidity sources and usage comprise the following items. The list is illustrative and not exhaustive.

(i) Sources

(a) Own sources

- Cash Reserve Ratio (CRR) and excess CRR maintained with RBI.
- Securities held under Statutory Liquidity Ratio (SLR) and Government securities in excess of the minimum SLR requirement.
- Collateral pledged with the RBI or with ancillary systems² that can be freely converted into intraday liquidity;
- Unencumbered assets on a bank's balance sheet that can be freely converted into intraday liquidity;
- Secured and unsecured, committed and uncommitted credit lines available intraday;
- Balances with other banks that can be used for intraday settlement.

(b) Other sources

¹ An LVPS is a funds transfer system that typically handles large-value and high-priority payments. In India, RTGS is a LVPS. See Section 1.10 of CPSS/IOSCO *Principles for financial market infrastructures*, April 2012.

² Ancillary systems include other payment systems such as retail payment systems, CLS, securities settlement systems and central counterparties

- Payments received from other Large Value Payments Systems (LVPS) participants;
- Payments received from ancillary systems;
- Payments received through correspondent banking services.

(ii) Usage

- Payments made to other LVPS participants;
- Payments made to ancillary systems;
- Payments made through correspondent banking services;
- 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).

3. The intraday liquidity monitoring tools

3.1 A number of factors influence a bank'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 sufficient information to identify and monitor the intraday liquidity risk run by a bank. To achieve this, seven separate monitoring tools are prescribed, which have been classified in three groups to illustrate their applicability as given below:

Category A: Tools applicable to all reporting banks

- i. Daily maximum intraday liquidity usage;
- ii. Available intraday liquidity at the start of the business day;
- iii. Total payments;
- iv. Time-specific obligations;

Category B: Tools applicable to reporting banks that provide correspondent banking services

- i. Value of payments made on behalf of correspondent banking³ customers;
- ii. Intraday credit lines extended to customers;

Category C: Tool applicable to reporting banks which are direct participants

- i. Intraday throughput;

3.2 Implementation date and reporting frequency: The above-mentioned tools have been incorporated in the reporting template (BLR – 6) given in the Appendix to this circular. Banks will be required to report their intra-day liquidity position as per BLR - 6 on a monthly basis to the Department of Banking Supervision (DBS, CO), starting from January 1, 2015. A description of the monitoring tools is given in the subsequent paragraphs.

4. Monitoring tools applicable to all reporting banks

(i) Daily maximum intraday liquidity usage

4.1 The objective of this tool is to enable monitoring of the net balance of all payments made and received by a bank under normal conditions during the day over their settlement account, either with the RBI (if the bank is a direct participant) or with correspondent bank(s). 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 a bank's maximum daily intraday liquidity usage. The bank shall arrive at the net position using transaction-by-transaction data over the account(s) and their respective settlement time stamps. This does not require real time monitoring and the bank is free to calculate this position after close of the business day.

4.2 The net position represents change in the opening balance with the central bank (for direct participant banks) or the correspondent bank (for banks using correspondent banks). Whereas a positive net position signifies that the bank has received more payments than it has made during the day, a negative net position signifies that the bank

³ In correspondent banking, customer payments may be made across accounts held by the same correspondent bank, which may have no impact on intraday liquidity source or usage for the bank, as these do not link to the payment and settlement systems. However, these payments do have intraday liquidity implications for both the sending and receiving customer banks and hence, are incorporated in reporting of the monitoring tools.

has made more payments than it has received. In case of latter, the bank will need access to intraday liquidity to fund this negative net position. The minimum amount of intraday liquidity that a bank would need to have available on any given day would be equivalent to its largest negative net position.

4.3 In case when a bank runs a positive net cumulative position at some point intraday, it has surplus liquidity available to meet its intraday liquidity obligations.

4.4 Banks are required to report their three largest daily negative as well as positive net cumulative positions on their settlement or correspondent account(s) during the reporting month, as also the daily averages of both these variables for the reporting month (BLR – 6, SI No.1).

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

4.5 The objective of this tool is to enable monitoring of the amount of intraday liquidity available with a bank at the start of each day to meet its intraday liquidity requirements in normal conditions. Under this tool, banks are required to report the three smallest sums by value of intraday liquidity available at the start of each business day in the reporting period. The banks should also report the average amount of available intraday liquidity at the start of each business day during the reporting month. Further, the constituent elements of above amounts should also be reported as given in the reporting format (BLR – 6, SI No. 2).

4.6 Under this tool, banks should include only those liquidity sources (as indicated in paragraph 2.2 (i)), which are freely and readily available to them. Banks should have a Board approved policy in this regard. It is also advised that in cases of collateral managed on a cross-currency and/or cross-system basis, liquidity sources not denominated in the domestic currency may be included in the calculation only if the bank can demonstrate to the Reserve Bank of India that the collateral can be transferred intraday freely to the system where it is needed.

(iii) Total payments

4.8 The objective of this tool is to enable monitoring of the overall scale of a bank's payment activity in terms of gross payments sent and received in the LVPS and/or, where appropriate, across any account(s) held with a correspondent bank(s). Under this tool (BLR – 6, SI No. 3), banks should report their three largest daily values for gross payments sent and received during the reporting month. The banks shall also report the average daily figure of gross payments made and received during the reporting month.

(iv) Time-specific obligations

4.9 Failure to settle time-specific obligations could result in financial penalty, reputational damage to the bank or loss of future business. The objective of this tool is to enable monitoring of a bank's scale of these obligations. Banks should calculate the total value of time-specific obligations⁴ that they settle each day and report such three largest daily total values during the reporting month and the average daily total value of such obligations for the reporting month (BLR – 6, SI No.4).

5. Monitoring tools applicable only to reporting banks that provide correspondent banking services - Correspondent banks should submit information in this regard under SI No.5 of BLR – 6.

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

5.1 Monitoring of the payment flows that arise from correspondent banking services is important as such flows may have a significant impact on the correspondent bank's own intraday liquidity management.

5.2 Correspondent banks should calculate the total value of payments they make on behalf of all customers of their correspondent banking services each day and report the

⁴ These obligations may include those for which there is time-specific intraday deadline, those required to settle positions in other payment and settlement systems, those related to market activities and other such obligations critical to a bank's business or reputation. E.g., obligations in ancillary systems, CLS pay-ins or return of overnight loans

three largest daily total values and the daily average total value of these payments during the reporting period.

(ii) Intraday credit lines extended to customers

5.3 Correspondent banks should report the three largest intraday credit lines (including both committed and uncommitted & secured and unsecured lines) extended to their customers during the reporting period, and the use of those lines at peak usage.

6. Monitoring tool applicable only to reporting banks which are direct participants

(i) Intraday throughput

6.1 Direct participants should report the daily average in the reporting period of the percentage of their outgoing payments (relative to total payments) and incoming receipts (relative to total receipts) that settle by specific times during the day, by value within each hour of the business day. Banks should submit information in this regard under SI No.5 of BLR – 6.

7. Intraday liquidity stress scenarios

7.1 The monitoring tools described above provide information on a bank's intraday liquidity profile in normal conditions. However, the availability and usage of intraday liquidity can change in times of stress. Banks should consider the impact of a bank's intraday liquidity requirements in stress conditions. An illustrative list of four possible stress scenarios is described below. Banks, in consultation with the Reserve Bank of India (Department of Banking Supervision, Central Office) should determine the intraday stress scenarios which are relevant to their particular circumstances and business model.

7.2. These scenarios should be used to assess how intraday liquidity profile in normal conditions would change in conditions of stress. Banks should report the impact of these stress scenarios on the monitoring tools to the Reserve Bank of India (Department of Banking Supervision, Central Office) on an annual basis. This may facilitate a bank to address any adverse impact either through contingency planning arrangements and/or their wider intraday liquidity risk management framework.

7.3 Stress scenarios

Scenario		Impact
I	Stress on a direct participant	<p>A bank suffers or is perceived to be suffering from stress event</p> <ul style="list-style-type: none"> • Counterparties may defer payments and/or withdrawing intraday credit lines. • May result in the bank having to fund more of its payments from its own intraday liquidity sources to avoid having to defer its own payments <p>Banks 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.</p>
II	Stress on a counterparty	<p>A major counterparty suffers an intraday stress event which prevents it from making payments</p> <ul style="list-style-type: none"> • Direct participants and banks that use correspondent banking services would not be able to rely on incoming payments from the stressed counterparty, reducing the availability of intraday liquidity that can be sourced from the receipt of the counterparty's payments.
III	Stress on customer bank of a correspondent bank	<p>A customer bank of a correspondent bank suffers a stress event.</p> <ul style="list-style-type: none"> • Bank may be constrained to prefund its payments and/or to collateralise its intraday credit line(s). • Other banks may defer payments to the customer bank. • This may lead to further loss of intraday liquidity at

		its correspondent bank(s) as intraday credit lines may be withdrawn by the correspondent bank(s).
IV	Market-wide credit or liquidity stress	<ul style="list-style-type: none"> • Adverse implications for the value of liquid assets that a bank holds to meet its intraday liquidity usage. • A widespread fall in the market value and/or credit rating of a bank's unencumbered liquid assets may constrain its ability to raise intraday liquidity from the market. • For a bank 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). <p>All reporting banks should consider the likely impact that the stress would have on their sources of available intraday liquidity at the start of the business day.</p>

7.4 Banks 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.

8. Scope of application

8.1 Banks should generally manage their intraday liquidity risk on a system-by-system basis, i.e., for each LVPS in a single currency.

(i) Systems

8.2 Banks which are direct participants to an LVPS can manage their intraday liquidity in very different ways. Some banks manage their payment and settlement activity on a system-by-system basis. Others make use of direct intraday liquidity 'bridges' 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).

8.3 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 banks should follow:

- As a baseline, individual banks 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 a bank can demonstrate to the satisfaction of the Reserve Bank of India that it regularly monitors positions and uses other formal arrangements to transfer liquidity intraday between LVPSs which do not have a direct technical liquidity bridge, those LVPSs may also be considered as ancillary systems for reporting purposes.

8.4 Ancillary systems (e.g., retail payment systems, CLS, some securities settlement systems and central counterparties), place demands on a bank's intraday liquidity when these systems settle the bank's obligations in an LVPS. Consequently, separate reporting requirements will not be necessary for such ancillary systems.

8.5 Banks 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 bank should report per correspondent bank. For banks which access an LVPS indirectly through more than one correspondent bank, the reporting may be aggregated, provided that the reporting bank can demonstrate to the satisfaction of the Reserve Bank of India that it is able to move liquidity between its correspondent banks.

8.6 Banks which operate as direct participants of an LVPS but which also make use of correspondent banks should aggregate these for reporting purposes if the payments made directly through the LVPS and those made through the correspondent bank(s) are in the same jurisdiction and same currency.

(ii) Currency

8.7 Banks that manage their intraday liquidity on a currency-by-currency basis should report on an individual currency basis.

8.8 If a bank can prove to the satisfaction of the Reserve Bank of India 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, banks should also report at an individual significant currency⁵ level in order to enable monitoring the extent to which they are reliant on foreign exchange swap markets. In such cases, reporting in a currency, which is not significant for the bank, is not mandatory.

(iii) Organisational structure

8.9 The monitoring tools should be reported at consolidated as well as individual legal entity level. In cases of foreign banks operating in India as branches, monitoring tools should be reported at the branch level only.

8.10 Where there are no impediments or constraints to transferring intraday liquidity between two (or more) legal entities intraday, and banks can demonstrate this to the satisfaction of the Reserve Bank of India, the intraday liquidity requirements of the entities may be aggregated for reporting purposes.

⁵ A currency is considered “significant” if the aggregate liabilities denominated in that currency amount to 5% or more of the bank's total liabilities.

Appendix 1

Practical example of the monitoring tools

The following example illustrates how the tools would operate for a bank on a particular business day. Assume that on the given day, the bank'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. Banks that are direct Participant

Details of the bank'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 bank extends to the counterparty

Payment E: 250

Payment F: 100

The bank has 300 units of central bank reserves and 500 units of eligible collateral.

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

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. Bank that uses a correspondent bank

Details of the bank'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 bank has 300 units of account balance at the correspondent bank and 500 units of credit lines of which 300 units unsecured and also uncommitted.

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

BLR – 6					
Intraday Liquidity Management Monitoring Tools Return					
Name of the Bank					
Reporting month					
Name of the large value payment system (LVPS)					
Whether Direct Participant in LVPS (Y/N)					
Whether use correspondent banks (Y/N)					
Whether Direct participant as well use correspondent bank (Y/N)					
Name of the correspondent bank(s), if applicable					
Whether provide correspondent banking services (Y/N)					
Reporting Currency					
If more than one return submitted (for different systems, currencies or correspondent banks) (Y/N)					
Nos. of such returns ⁶					
SI No	Monitoring Tools				
1.	Daily maximum intraday liquidity usage				
		Maximum during the month	2nd maximum during the month	3rd maximum during the month	Average during the month
(i)	Largest positive net cumulative position				
(ii)	Dates of the position at (i) above				
(iii)	Largest negative net cumulative position				
(iv)	Dates of the position at (iii) above				

⁶ If a bank is required to submit only one return in terms of Scope as described in paragraph 8 of this circular, it should mention 1 of 1 in this row. If a bank is required to submit more than one return, it should mention the nos. accordingly, e.g. 1 of 3, 2 of 2, etc.

2. Available intraday liquidity at the start of the business day					
		Minimum during the month	2nd minimum during the month	3rd minimum during the month	Average during the month
(i)	Total Value of available intraday liquidity at the start of the business day				
(ii)	Dates of the position at (i) above				
(iii)	Constituents of the intraday liquidity at (i) above				
a	Central bank reserves				
b	Collateral pledged at the central bank				
c	Collateral pledged at ancillary systems				
d	Unencumbered liquid assets on a bank's balance sheet				
e	Total credit lines available				
-	Of which secured				
-	Of which committed				
f	Balances with other banks				
g	Others(pl give details in footnote)				
3. Total payments					
		Maximum during the month	2nd maximum during the month	3rd maximum during the month	Average during the month
(i)	Gross payments sent				
(ii)	Dates of the position at (i) above				
(iii)	Gross payments received				
(iv)	Dates of the position at (iii)				

	above				
4. Time-specific obligations					
		Maximum during the month	2nd maximum during the month	3rd maximum during the month	Average during the month
(i)	Total value of time-specific obligations				
(ii)	Dates of the position at (i) above				
5. Intraday throughput					
(Applicable only for Direct Participants)					
		Daily Average of Cumulative payments made	Cumulative percentage of payments made (%)	Daily Average of Cumulative payments received	Cumulative percentage of payments received (%)
(i)	Throughput till 8:00 hrs.				
(ii)	Throughput till 9:00 hrs.				
(iii)	Throughput till 10:00 hrs.				
(iv)	Throughput till 11:00 hrs.				
(v)	Throughput till 12:00 hrs.				
(vi)	Throughput till 13:00 hrs.				
(vii)	Throughput till 14:00 hrs.				
(viii)	Throughput till 15:00 hrs.				
(ix)	Throughput till 16:00 hrs.				
(x)	Throughput till 17:00 hrs.				
(xi)	Throughput till 18:00 hrs.				

Data on Corresponding Banking Services					
(Applicable only for banks that provide correspondent banking services)					
		Maximum during the month	2nd maximum during the month	3rd maximum during the month	Average during the month
(i)	Total gross value of payments made on behalf of correspondent banking customers				
(ii)	Dates of the payments at (i) above				
(iii)	Total value of intraday credit lines extended to customers ⁷				
(a)	Of which secured				
(b)	Of which committed				
(c)	Of which used at peak usage				
(iv)	Dates of the intraday credit lines at (iii) above				

⁷ This figure includes all credit lines extended, including uncommitted and unsecured