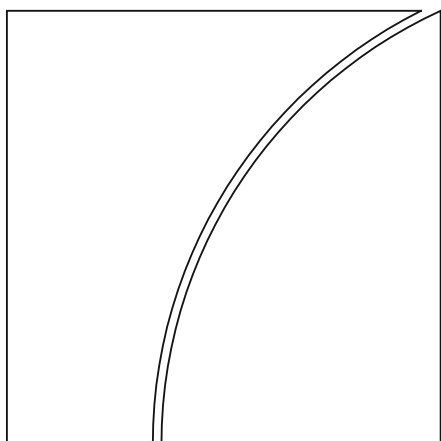


Basel Committee on Banking Supervision



Monitoring tools for intraday liquidity management

April 2013



BANK FOR INTERNATIONAL SETTLEMENTS

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I. Introduction

1. Management of intraday liquidity risk forms a key element of a bank's overall liquidity risk management framework. In September 2008, the Basel Committee on Banking Supervision (BCBS)¹ published its *Principles for Sound Liquidity Risk Management and Supervision* (the Sound Principles), which provide guidance for banks on their management of liquidity risk and collateral. 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."

2. 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.*

3. In January 2013, the BCBS published *Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools*, which sets out one of the Committee's key reforms to strengthen global liquidity regulations. The objective of the Liquidity Coverage Ratio (LCR) is to promote the short-term resilience of the liquidity risk profile of banks, but does not include intraday liquidity within its calibration.²

4. The BCBS, in consultation with the Committee on Payment and Settlement Systems (CPSS)³ 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.

¹ The Basel Committee on Banking Supervision is a committee of banking supervisory authorities which was established by the central bank Governors of the Group of Ten countries in 1975. It now consists of senior representatives of bank supervisory authorities and central banks from Argentina, Australia, Belgium, Brazil, Canada, China, France, Germany, Hong Kong SAR, India, Indonesia, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. It usually meets at the Bank for International Settlements (BIS) in Basel, Switzerland, where its permanent Secretariat is located.

² "Banks and regulators should be aware that the LCR stress scenario does not cover expected or unexpected intraday liquidity needs" See paragraph 41 of BCBS *Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools*, January 2013.

³ 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. The CPSS Secretariat is hosted by the BIS.

5. Given the close relationship between the management of banks' intraday liquidity risk and the smooth functioning of payment and settlement systems,⁴ 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. **It is important to note that the tools are being introduced for monitoring purposes only. Internationally active banks will be required to apply these tools.** These tools may also be useful in promoting sound liquidity management practices for other banks, whether they are direct participants⁵ of a large-value payment system (LVPS)⁶ or use a correspondent bank to settle payments. **National supervisors will determine the extent to which the tools apply to non-internationally active banks within their jurisdictions.**⁷

7. Consistent with their broader liquidity risk management responsibilities, bank management will be responsible for collating and submitting the monitoring data for the tools to their banking supervisor.⁸ It is recognised that banks may need to liaise closely with counterparts, including payment system operators and correspondent banks, to collate these data. However, banks and supervisors are not required to disclose these reporting requirements publicly. Public disclosure is not intended to be part of these monitoring tools.

8. The following sections of this document set out:

- The definitions of intraday liquidity and intraday liquidity risk and the elements that constitute a bank's intraday liquidity sources and usage (Section II);
- The detailed design of the intraday liquidity monitoring tools (Section III);
- The intraday liquidity stress scenarios (Section IV);
- The scope of application of the tools (Section V); and
- The implementation date and reporting frequency (Section VI).

⁴ Where reference is made in this paper to payment and settlement systems, the term is understood to encompass payment systems and clearing and settlement systems for securities and derivatives (including central counterparties).

⁵ 'Direct participant' means a participant in a large-value payment system that can settle transactions without using an intermediary. If not a direct participant, a participant will need to use the services of a direct participant (a correspondent bank) to perform particular settlements on its behalf. Banks can be a direct participant in a large-value payment system while using a correspondent bank to settle particular payments, for example, payments for an ancillary system (see also footnote 10).

⁶ An LVPS is a funds transfer system that typically handles large-value and high-priority payments. In contrast to retail payment systems, many LVPSs are operated by central banks, using an RTGS or equivalent mechanism. See Section 1.10 of CPSS/IOSCO *Principles for financial market infrastructures*, April 2012.

⁷ Throughout this document, all references to banks subject to the monitoring tools (in some instances the term *reporting bank* is used for the sake of clarity) should be interpreted in accordance with the scope of application set forth in this paragraph.

⁸ As agreed by national authorities in a particular jurisdiction, the monitoring data may be collected by a relevant domestic oversight authority (eg payments system overseer) instead of the banking supervisor.

II. Definitions and sources and usage of intraday liquidity

A. Definitions

9. 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;⁹
- Business Day: the opening hours of the LVPS 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

10. The following sets out the main constituent elements of a bank's intraday liquidity sources and usage.¹⁰ (The list should not be taken as exhaustive.)

(i) Sources

Own sources

- Reserve balances at the central bank;
- Collateral pledged with the central bank or with ancillary systems¹¹ 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 lines¹² available intraday;
- Balances with other banks that can be used for intraday settlement.

Other sources

- Payments received from other LVPS participants;
- Payments received from ancillary systems;

⁹ See CPSS: *A glossary of terms used in payments and settlements systems*, March 2003.

¹⁰ Not all elements will be relevant to all reporting banks as intraday liquidity profiles will differ between banks (eg whether they access payment and settlement systems directly or indirectly or whether they provide correspondent banking services and intraday credit facilities to other banks etc.)

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

¹² Although uncommitted credit lines can be withdrawn in times of stress (see stress scenario (i) in Section IV), such lines are an available source of intraday liquidity in normal times.

- Payments received through correspondent banking services.
- (ii) Usage
- Payments made to other LVPS participants;
 - Payments made to ancillary systems;¹³
 - 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 (eg as an emergency liquidity provider).
11. 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 banks and should be incorporated in their reporting of the monitoring tools.

III. The intraday liquidity monitoring tools

12. 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 supervisors with sufficient information to identify and monitor the intraday liquidity risk run by a bank. To achieve this, seven separate monitoring tools have been developed (see Table 1). As not all of the tools will be relevant to all reporting banks, the tools have been classified in three groups to determine their applicability as follows:

- Category A: applicable to all reporting banks;
- Category B: applicable to reporting banks that provide correspondent banking services; and
- Category C: applicable to reporting banks which are direct participants.

¹³ 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 usage are only those related to the haircut applied by the central bank.

The set of monitoring tools

Table 1

Tools applicable to all reporting banks	
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
Tools applicable to reporting banks 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
Tool applicable to reporting banks which are direct participants	
C(i)	Intraday throughput

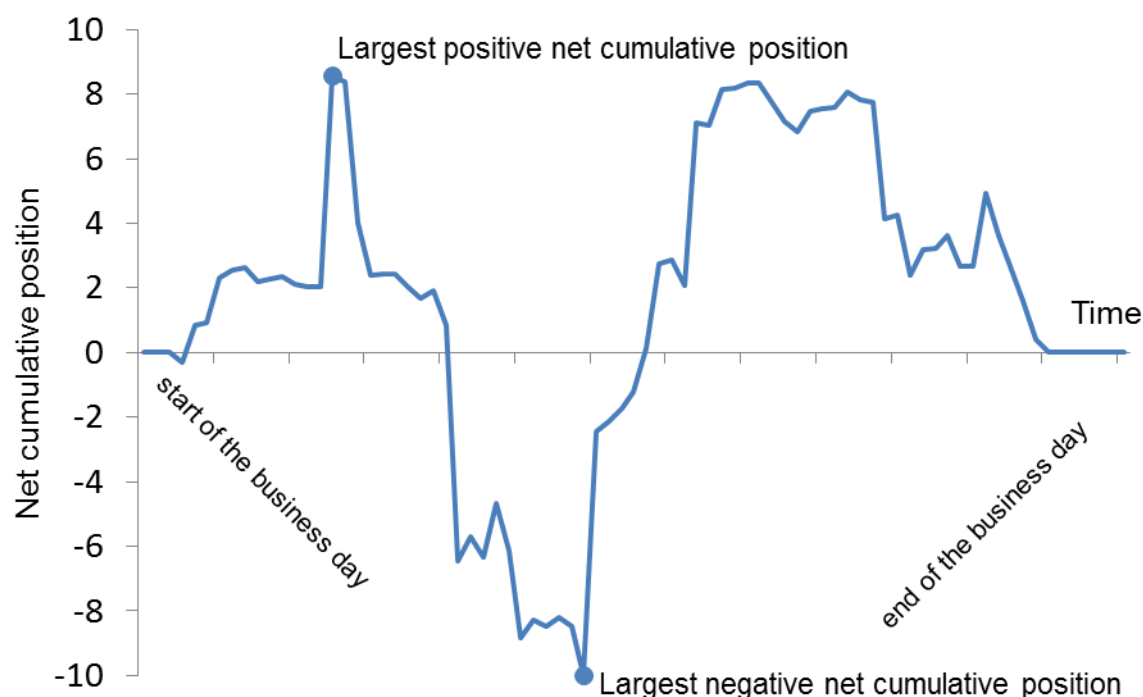
A. Monitoring tools applicable to all reporting banks

(i) Daily maximum intraday liquidity usage

13. This tool will enable supervisors to monitor a bank's intraday liquidity usage in normal conditions. It will require banks 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), (ie the largest net cumulative balance between payments made and received), will determine a bank'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.

14. For illustrative purposes only, the calculation of the tool is shown in figure 1. A positive net position signifies that the bank has received more payments than it has made during the day. Conversely, a negative net position signifies that the bank has made more payments than it has received.¹⁴ For direct participants, the net position represents the change in its opening balance with the central bank. For banks 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).

¹⁴ For the calculation of the net cumulative position, "payments received" do not include funds obtained through central bank intraday liquidity facilities.



15. Assuming that a bank 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 a bank 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.)

16. Conversely, when a bank 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 bank 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.)

17. Banks 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 a bank in normal conditions.

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

18. This tool will enable supervisors to monitor the amount of intraday liquidity a bank has available at the start of each day to meet its intraday liquidity requirements in normal conditions. Banks 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 bank.

19. Drawing on the liquidity sources set out in Section II B above, banks should discuss and agree with their supervisor the sources of liquidity which they should include in the calculation of this tool. Where banks 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 bank can demonstrate to the satisfaction of its supervisor that the collateral can be transferred intraday freely to the system where it is needed.

20. As the reporting data accumulates, supervisors will gain an indication of the amount of intraday liquidity available to a bank to meet its payment and settlement obligations in normal conditions.

(iii) Total payments

21. This tool will enable supervisors to monitor the overall scale of a bank's payment activity. For each business day in a reporting period, banks 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). Banks 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.

(iv) Time-specific obligations

22. This tool will enable supervisors to gain a better understanding of a bank's time specific obligations.¹⁵ Failure to settle such obligations on time could result in financial penalty, reputational damage to the bank or loss of future business.

23. Banks 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.

B. Monitoring tools applicable to reporting banks that provide correspondent banking services

(i) Value of payments made on behalf of correspondent banking customers¹⁶

24. This tool will enable supervisors to gain a better understanding of the proportion of a correspondent bank's payment flows that arise from its provision of correspondent banking services. These flows may have a significant impact on the correspondent bank's own intraday liquidity management.¹⁷

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

¹⁵ 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 a bank's business or reputation (see footnote 10 of the 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.

¹⁶ The term 'customers' includes all entities for which the correspondent bank provides correspondent banking services.

¹⁷ Paragraph 79 of the 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."

(ii) Intraday credit lines extended to customers¹⁸

26. This tool will enable supervisors to monitor the scale of a correspondent bank's provision of intraday credit to its customers. Correspondent banks should report the three largest intraday credit lines extended to their customers in the reporting period, including whether these lines are secured or committed and the use of those lines at peak usage.¹⁹

C. Monitoring tool applicable to reporting banks which are direct participants

(i) Intraday throughput

27. This tool will enable supervisors to monitor the throughput 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.²⁰ Over time, this will enable supervisors to identify any changes in a bank's payment and settlement behaviour.

IV. Intraday liquidity stress scenarios

28. The monitoring tools in Section III will provide banking supervisors with information on a bank's intraday liquidity profile in normal conditions. However, the availability and usage of intraday liquidity can change markedly in times of stress. In the course of their discussions on broader liquidity risk management, banks and supervisors should also consider the impact of a bank's intraday liquidity requirements in stress conditions. As guidance, four possible (but non-exhaustive) stress scenarios have been identified and are described below.²¹ Banks should determine with their supervisor which of the scenarios are relevant to their particular circumstances and business model.

29. Banks need not report the impact of the stress scenarios on the monitoring tools to supervisors on a regular basis. They 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.

Stress scenarios

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

30. For a direct participant, own financial and/or operational stress may result in counterparties deferring payments and/or withdrawing intraday credit lines. This, in turn, may result in the bank having

¹⁸ See footnote 10.

¹⁹ 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.

²⁰ It should be noted that some jurisdictions already have throughput rules or guidelines in place.

²¹ Banks 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, banks should use these stress testing scenarios to inform their intraday liquidity risk tolerance and contingency funding plans.

to fund more of its payments from its own intraday liquidity sources to avoid having to defer its own payments.

31. For banks 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 bank having either to prefund its payments and/or to collateralise its intraday credit line(s).

(ii) Counterparty stress: a major counterparty suffers an intraday stress event which prevents it from making payments

32. A counterparty stress may result in direct participants and banks that use correspondent banking services being unable 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) A customer bank's stress: a customer bank of a correspondent bank suffers a stress event

33. A customer bank's stress may result in other banks deferring payments to the customer, creating a further loss of intraday liquidity at its correspondent bank.

(iv) Market-wide credit or liquidity stress

34. A market-wide credit or liquidity stress may have 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 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.

35. 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).

36. 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.

Application of the stress scenarios

37. For the *own financial stress* and *counterparty stress*, all reporting 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.

38. For the *customer bank's stress* scenario, banks 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.

39. For the *market-wide stress*, 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.

40. While each of the monitoring tools has value in itself, combining the information provided by the tools will give supervisors a comprehensive view of a bank's resilience to intraday liquidity shocks. Examples on how the tools could be used in different combinations by banking supervisors to assess a bank's resilience to intraday liquidity risk are presented in Annex 3.

V. Scope of application

41. Banks generally manage their intraday liquidity risk on a system-by-system basis in a single currency, but it is recognised that practices differ across banks and jurisdictions, depending on the institutional set up of a bank and the specifics of the systems in which it operates. The following considerations aim to help banks and supervisors determine the most appropriate way to apply the tools. **Should banks need further clarification, they should discuss the scope of application with their supervisors.**

(i) Systems

42. 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’²² 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).

43. 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 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.

44. Ancillary systems (eg 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.

45. 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 its supervisor that it is able to move liquidity between its correspondent banks.

46. Banks 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

²² 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.

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.

(ii) Currency

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

48. If a bank 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, banks 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.

49. When the level of activity of a bank's payment and settlement activity in any one particular currency is considered de minimis with the agreement of the supervisor²³ a reporting exemption could apply and separate returns need not be submitted.

(iii) Organisational structure

50. The appropriate organisational level for each bank'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.

51. 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 their supervisor, the intraday liquidity requirements of the entities may be aggregated for reporting purposes.

(iv) Responsibility of home and host supervisors

52. For cross-border banking groups, where a bank 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 bank has sufficient intraday liquidity to meet its obligations in the local LVPS and/or with its correspondent bank(s).²⁴ The allocation of responsibility between home and host supervisor will ultimately depend upon whether the bank 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

²³ 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 bank's total liabilities. See paragraph 211 of the BCBS *Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools*, January 2013.

²⁴ Paragraph 145 of the 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."

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 responsibility for receiving the relevant set of intraday liquidity data for that subsidiary.
- The supervisor of the parent bank (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.

VI. Implementation date and reporting frequency

53. The reporting of the monitoring tools will commence on a monthly basis from 1 January 2015 to coincide with the implementation of the LCR reporting requirements.

54. Sample reporting templates can be found in Annex 2. As noted above, the tools apply to internationally active banks. National supervisors will determine whether other banks should apply the reporting requirements. Banks should also agree with their supervisors the scope of application and reporting arrangements between home and host authorities.²⁵

55. If customer banks are unable to meet this implementation deadline because of data availability constraints with their correspondent bank(s), consideration may be given by supervisors to phasing-in their implementation to a later date (preferably no later than 1 January 2017).

²⁵ In some cases, it will also require co-operation between home and host authorities.

Annex 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		<u>-550</u>
10:45		400	-150
11:59		300	+150
13:00	Payment D: 300		-150
13:45		350	<u>+200</u>
15:00	Payment E: 250		-50
15:32	Payment F: 100		-150
17:00		150	0

1. 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 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 central bank reserves + 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. 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: $200+400+300+350+150 = \underline{\underline{1,400 \text{ units}}}$

A(iv) Time-specific obligations:

$200 + 100 = \underline{\underline{300 \text{ units}}}$

Annex 2

Sample reporting form

Direct participants					Table A
Reporting month					
Name of the large value payment system					
A(i) Daily maximum intraday liquidity usage	Max	2d max	3d max	Avg	
1. Largest positive net cumulative position					
2. Largest negative net cumulative position					
A(ii) Available intraday liquidity at the start of the business day	Min	2d min	3d min	Avg	
Total					
Of which:					
1. Central bank reserves					
2. Collateral pledged at the central bank					
3. Collateral pledged at ancillary systems					
4. Unencumbered liquid assets on a bank's balance sheet					
5. Total credit lines available ²⁶					
5a. Of which secured					
5b. Of which committed					
6. Balances with other banks					
7. Other					
A(iii) Total payments	Max	2d max	3d max	Avg	
1. Gross payments sent					
2. Gross payments received					
A(iv) Time-specific obligations	Max	2d max	3d max	Avg	
1. Total value of time-specific obligations					
C(i) Intraday throughput (%)	Avg	--	--	---	
1. Throughout at 8:00		---	---	---	
2. Throughout at 9:00		---	---	---	
3. Throughout at 10:00		---	---	---	

²⁶ This figure includes all available credit lines, including uncommitted and unsecured.

4. Throughout at 11:00		---	---	---
5. Throughout at 12:00		---	---	---
6. Throughout at 13:00		---	---	---
7. Throughout at 14:00		---	---	---
8. Throughout at 15:00		---	---	---
9. Throughout at 16:00		---	---	---
10. Throughout at 17:00		---	---	---
11. Throughout at 18:00		---	---	---

Banks that use correspondent banks

Table B

Reporting month				
Name of the correspondent bank				
A(i) Daily maximum liquidity usage	Max	2d max	3d max	Avg
1. Largest positive net cumulative position				
2. Largest negative net cumulative position				
A(ii) Available intraday liquidity at the start of the business day	Min	2d min	3d min	Avg
Total				
Of which:				
1. Balance with the correspondent bank				
2. Total credit lines from the correspondent bank ²⁷				
2a. Of which secured				
2b. Of which committed				
3. Collateral pledged at the correspondent bank				
4. Collateral pledged at the central bank				
5. Unencumbered liquid assets on a bank's balance sheet				
6. Central bank reserves				
7. Balances with other banks				
8. Other				
A(iii) Total payments	Max	2d max	3d max	Avg
1. Gross payments sent				
2. Gross payments received				
A(iv) Time-specific obligations	Max	2d max	3d max	Avg
1. Total value of time-specific obligations				

²⁷ See footnote 24.

Banks that provide correspondent banking services

Table C

Reporting month				
B(i) Value of payments made on behalf of correspondent banking customers	Max	2d max	3d max	Avg
1. Total gross value of payments made on behalf of correspondent banking customers				
B(ii) Intraday credit lines extended to customers	Max	2d max	3d max	---
1. Total value of credit lines extended to customers ²⁸				---
1a. Of which secured				----
1b. Of which committed				---
1c. Of which used at peak usage				---

²⁸ This figure includes all credit lines extended, including uncommitted and unsecured.

Annex 3

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 a bank'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 a bank's payment activity is time critical, the bank 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 bank 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 bank's daily liquidity usage

If the impact of an intraday liquidity stress on a bank's daily liquidity usage is large relative to its available intraday liquidity at the start of the business day, it suggests that the bank 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 a bank misses its time-specific obligations, it could have a significant impact on other banks. If it were demonstrated that the bank'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 bank 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 a bank'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 a bank 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 bank 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.