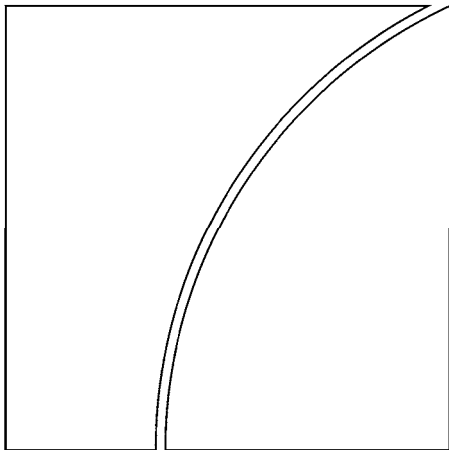


Basel Committee on Banking Supervision

Consultative document



Monitoring indicators for intraday liquidity management

Issued for comment by 14 September 2012

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BANK FOR INTERNATIONAL SETTLEMENTS

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The Basel Committee welcomes comments on this consultative document. Comments should be submitted by Friday 14 September 2012 by e-mail to: baselcommittee@bis.org. Alternatively, comments may be sent by post to the Secretariat of the Basel Committee on Banking Supervision, Bank for International Settlements, CH-4002 Basel, Switzerland. All comments may be published on the website of the Bank for International Settlements unless a comment contributor specifically requests confidential treatment.

I. Introduction

A. Background

1. The 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* (Sound Principles), which set guidelines 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 and indicate 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 December 2010, the BCBS published *Basel III: International framework for liquidity risk measurements, standards and monitoring* (Basel III liquidity rules), which set out the Basel Committee's reforms to strengthen liquidity regulations. The framework is centred upon two new minimum liquidity standards: the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio. Although the LCR is designed to promote the short term resilience of a bank's liquidity profile, it does not currently include intraday liquidity within its calibration. The Basel III liquidity rules state:²

“Banks and regulators should be aware that the LCR stress does not cover expected or unexpected intraday liquidity needs that occur during the day and disappear by the end of

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 See paragraph 31 of BCBS *Basel III: International framework for liquidity risk measurements, standards and monitoring*, December 2010.

the day... The Committee is currently reviewing if and how intraday liquidity risk should be addressed.”

The liquidity rules also state that:

“One area in particular where more work on monitoring tools will be conducted relates to intraday liquidity risk.”³

4. To complement the guidance in the Sound Principles and to take forward its further work on monitoring tools for intraday liquidity, the BCBS, in consultation with the Committee on Payment and Settlement Systems (CPSS⁴), has developed a proposed set of indicators to monitor banks’ intraday liquidity risk. The aim of the proposed indicators is to enable banking supervisors to monitor a bank’s intraday liquidity risk management and its ability to meet payment and settlement obligations on a timely basis, both in normal times and in stressed scenarios. Over time, the indicators will also enable supervisors to gain a better understanding of payment and settlement behaviour and the management of intraday liquidity risk by banks.

5. Given the close relationship between the management of banks’ intraday liquidity risk and the smooth functioning of payment and settlement systems,⁵ the indicators are also likely to be of benefit to overseers of payment and settlement systems. Close cooperation between banking supervisors and the overseers is envisaged.

6. It should be noted that the proposed indicators are for monitoring purposes only and do not represent the introduction of new standards around intraday liquidity management.

B. Consultative document

7. This consultative document seeks comments on the design of the proposed indicators and on the supporting regulatory reporting regime. Although the indicators will apply specifically to internationally active banks, they have been designed equally to apply to all banks, including those that access payment and settlement systems indirectly via the services of a correspondent bank.⁶

8. This document sets out:

- The definition of intraday liquidity and the elements that constitute a bank’s intraday liquidity sources and needs;

³ See paragraph 138 of BCBS *Basel III: International framework for liquidity risk measurements, standards and monitoring*, December 2010.

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

⁶ Banks can access payment and settlement systems directly or indirectly. Direct participation means a participant in a transfer system that can settle transactions without using an intermediary. Indirect participation means a participant with a tiering arrangement that uses the services of a direct participant (a correspondent bank) to perform particular settlements on its behalf. Banks can be a direct participant in one system as well as an indirect participant in another.

- The detailed design of the proposed monitoring indicators of a bank’s intraday liquidity risk in normal times;
- Proposed stress scenarios;
- Key application issues; and
- The proposed reporting regime.

9. Comments are welcomed on the proposed monitoring framework generally, but specifically on the following questions:

- (i) Do the proposed indicators adequately capture the intraday liquidity risk run by banks?
- (ii) Are the stress scenarios identified in the paper comprehensive?
- (iii) Is the proposed scope of application of the indicators clear?
- (iv) What, if any, implementation challenges would the proposed reporting requirements present to banks?
- (v) Are the different monitoring and reporting requirements for direct and indirect payment and settlement system participants clear?

10. Further guidance on the detailed implementation of the indicators will be issued by the BCBS when the proposals are finalised.

C. Definition and constituent elements of intraday liquidity

11. Intraday liquidity is defined by the CPSS as “*Funds which can be accessed during the business day, usually to enable financial institutions to make payments in real time*”.⁷ For the purpose of this document, ‘business day’ is defined as the opening hours of the payment and settlement system (or group of systems) during which it is possible for a bank to receive and make payments.

12. The following are the constituent elements of a bank’s intraday liquidity sources and needs.⁸

Intraday Liquidity Sources

Own sources

- Reserve balances at the central bank;
- Eligible collateral pledged with the central bank;
- Unencumbered liquid assets on a bank’s balance sheet that can be freely transferred to the central bank and converted into central bank money;
- Secured or unsecured, committed or uncommitted credit lines available intraday;

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

⁸ Not all of the elements will be relevant to all banks as intraday liquidity profiles will differ between banks depending on, for instance, whether they access payment and settlement systems directly or indirectly or whether or not they provide correspondent banking services and intraday credit facilities to other banks etc.

- Balances with other banks that can be used for settlement on the same day.

Other sources

- Payments received from other payment system participants,⁹ including operations carried out in intraday,¹⁰ and/or overnight money markets;
- Payments received from ancillary systems.¹¹

Intraday Liquidity Needs

These arise from:

- Payments that need to be made, directly or indirectly, to other system participants, including operations carried out in intraday, and/or overnight money markets;
- Payments to be made to ancillary systems;¹²
- Contingent payments (eg as an emergency liquidity provider) relating to a payment system's failure to settle procedures;
- Contingent intraday liquidity liabilities to customers.
- Payments arising from providing correspondent banking services

In practice, some customer banks' payments are made to other customers of the same correspondent bank. These payments do not give rise to intraday liquidity needs for the correspondent bank as they are made across its own books and do not enter the payment system. However, these '*internalised payments*' do have intraday liquidity implications for both the sending and receiving customer banks.

II. The intraday liquidity monitoring indicators

13. A number of factors influence a bank's usage of intraday liquidity in payment and settlement systems and the vulnerability to intraday liquidity shocks. As such, no single indicator can provide supervisors with sufficient information on intraday liquidity risks or on how well risks are managed. For this reason a set of indicators is proposed. These aim to monitor:

⁹ Although payments received represent an intraday source of liquidity for a bank, they are netted out against payments made, for the purpose of monitoring intraday liquidity. Timing differences between payments received and payments made will result in a bank being a net receiver or payer vis-à-vis the system during the day.

¹⁰ Intraday money markets exist in a limited number of jurisdictions.

¹¹ For example, intraday transfers from other payment systems such as retail systems, CLS, securities settlement systems and central counterparties (including intraday margin reimbursements).

¹² 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 needs are only those related to the haircut applied by the central bank.

- A bank's usage of, and requirement for, intraday liquidity both in normal times and in times of stress;
- The intraday liquidity available to each bank on a daily basis, both in normal times and times of stress; and
- Changes in banks' behaviour over time within the payment and settlement systems.

A. The set of monitoring indicators

14. The detailed description of each indicator is set out below and stylised examples of the indicators are given in Annex 1. The reporting requirements of each indicator are set out in Section D.

Table 1
The proposed set of indicators

Indicator of:
(i) Daily maximum liquidity requirement
(ii) Available intraday liquidity
(iii) Total payments
(iv) Time-specific and other critical obligations
(v) Value of customer payments made on behalf of financial institution customers
(vi) Intraday credit lines extended to financial institution customers
(vii) Timing of intraday payments
(viii) Intraday throughput

(i) Daily maximum liquidity requirement

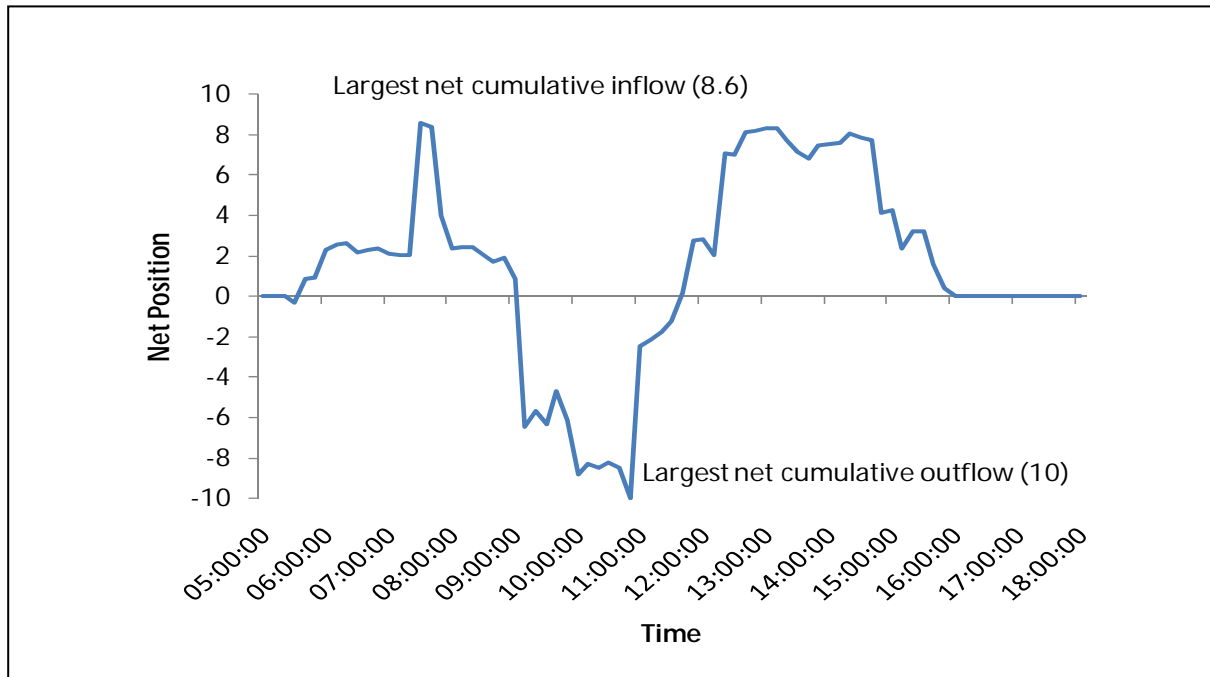
15. This indicator will show a bank's daily maximum requirement for intraday liquidity in normal times by establishing its net cumulative intraday liquidity position over a period of time. The net cumulative intraday liquidity position of a bank is the difference between the value of its payments received and the value of its payments made at any point in the day. The bank's largest negative net cumulative position during the day will determine its maximum intraday liquidity requirement on that day.

16. The indicator is shown in figure 1. A positive net cumulative position signifies that the bank has received more payments than it has made at a point in time during the day. Conversely, a negative net cumulative position signifies that the bank has made more payments than it has received.¹³ For direct participants, the net position represents the change in its opening balance with the central bank. For indirect participants, the net position represents the change in the opening balance on its account(s) with its correspondent bank(s).

¹³ For the calculation of the net cumulative position, "payments received" do not include funds obtained through central bank intraday liquidity facilities.

Figure 1

Daily maximum liquidity requirement



17. For the purpose of this indicator, intraday liquidity positions should be calculated on actual settlement times, rather than on submission times of payments to the system or to a correspondent bank, as appropriate.

18. Assuming that a bank runs a negative net cumulative 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 cumulative position. (In the illustration above, the intraday liquidity requirement would be 10 units.)

19. 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 system participants to fund its outgoing payments. The larger the positive net cumulative position, the greater a bank's usage of incoming payments to fund its own payment obligations. (In the illustration above, the largest positive net cumulative position would be 8.6 units.)

20. For an indirect participant, payments are made across the bank's account(s) held with its correspondent bank(s). The timing of receipts to, and payments made from, the account(s) will determine the bank's intraday liquidity usage/requirement.

(ii) Available intraday liquidity

21. This indicator will show the amount of intraday liquidity available to a bank on a daily basis in normal times. Banks will be required to report the amount of intraday liquidity available to them at the start of each business day and the lowest amount of available intraday liquidity by value on a daily basis throughout the reporting period. This will require banks to monitor changes to their available intraday liquidity. The indicator will enable supervisors to assess whether a bank has sufficient intraday liquidity available on a daily

basis to meet its normal intraday liquidity requirement. The 'Own Sources' of liquidity set out in Section I C above are available for inclusion in the calculation of this indicator.

22. Where banks manage collateral on a cross-currency and/or cross-system basis, liquidity sources not denominated in the currency of the intraday liquidity requirement and/or which are located in a different jurisdiction, may be included in the calculation of the indicator 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.

(iii) Total payments

23. This indicator will require banks to report the total value of their gross daily payments made and received in payment and settlement systems. This will enable supervisors to establish the overall scale of their payment and settlement activity.

(iv) Time-specific and other critical obligations

24. The Sound Principles state that a bank “*should adopt intraday liquidity management objectives that allow it to identify and prioritise time-specific and other critical obligations in order to meet them when expected*”. These are obligations which must be settled at a specific time within the day or have an expected intraday settlement deadline.¹⁴ Failure to settle such obligations on time could result in financial penalty, reputational damage or loss of future business.

25. This indicator has two components. Banks will be required to report the volume and value of their time-specific and other critical obligations and the total number and value of time critical obligations that were missed during the reporting period. This will enable supervisors to gain a better understanding of banks' time-specific obligations and to monitor that those obligations are being managed appropriately.

The following two indicators apply to banks which provide correspondent banking services or extend intraday credit as part of providing payment services to other customers.

(v) Value of customer payments made on behalf of financial institution customers

26. This indicator will require correspondent banks to report the gross value of their daily payments made on behalf of all of their financial institution customers. This will enable supervisors to gain a better understanding of the drivers of a correspondent bank's payment flows. The bank will also be required to report the value of payments settled on behalf of each of its five largest financial institution customers (by value), including “*internalised payments*” that are settled across its books. This will enable supervisors to assess the degree of payment concentration in the bank's provision of correspondent banking services

(vi) Intraday credit lines extended to financial institution customers

27. This indicator will require correspondent banks to report the total sum of intraday credit lines extended by them to all of their financial institution customers. The correspondent bank will also be required to report the value of the credit lines extended to each of its largest

¹⁴ Examples might include the settlement of obligations in ancillary systems, CLS pay-ins or the return of overnight loans.

five financial institution customers (by value), distinguishing between secured and unsecured credit and committed and uncommitted lines. For those same five customers, the bank will also be required to report the maximum daily usage of credit lines granted, again distinguishing between secured and unsecured and committed and uncommitted lines.¹⁵ This indicator will enable supervisors to gain a better understanding of a bank's correspondent banking business and the extent of any concentration in its provision of intraday credit.

(vii) Timing of intraday payments

28. This indicator, which applies only to direct participants, will show the average time of a bank's daily payment settlements over a reporting period. It will enable supervisors to identify changes to the timing of a bank's intraday outgoing payments over time. The indicator can be described as the value-weighted average time of settlement and is represented formulaically as follows:

$$\frac{\Sigma (\text{Value} * \text{Time of settlement})}{\Sigma \text{Value}}$$

29. Banks can use the underlying data of timing inflows and outflows to construct stress scenarios that reflect changes in payment timings.

(viii) Intraday throughput

30. This indicator will show the proportion, by value, of a bank's outgoing payments that settle by specific times during the day (eg the percentage of a day's payments that settles by 9 am, 10 am etc.).¹⁶ This will enable supervisors to identify changes over time to a bank's intraday throughput. It would also enable supervisors to identify specific times during the day when a bank might be particularly vulnerable to liquidity or operational difficulties.

B. Intraday liquidity stress scenarios

31. The indicators in Section II aim to determine a bank's requirement for, and usage of, intraday liquidity in normal times. However, intraday liquidity requirements and usage can increase markedly in times of stress. It is proposed, therefore, that banks should apply one or more broadly defined stresses to the above indicators to determine the likely impact on their normal intraday liquidity requirements. The information from this exercise will enable supervisors to assess a bank's vulnerability to a stress event and inform a discussion between the supervisor and the bank on the adequacy of its liquidity risk management framework, including its contingency funding planning arrangements.

32. Four stress scenarios have been identified and are described below,¹⁷ not all of which will be appropriate to all banks. Banks should therefore agree with their supervisor which of the scenarios are relevant to their particular circumstances and business model.

¹⁵ The disclosure of these credit lines does not change their legal nature.

¹⁶ It should be noted that some jurisdictions already have throughput rules or guidelines in place.

¹⁷ Firms should not limit themselves to the stress test scenarios described in the document and 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, firms should use these stress testing scenarios to

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

33. For a direct participant, own financial stress may result in counterparties deferring payments and/or withdrawing intraday credit lines. This, in turn, may result in the bank having to fund more of its payments from its own liquidity sources to avoid being forced to defer its own payments.

34. For an indirect participant, an own financial stress may result in intraday credit lines being withdrawn by its correspondent bank(s), and/or its own counterparties deferring payments. This may require the indirect participant having either to prefund its payments and/or to collateralise its intraday credit line(s).

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

35. A counterparty stress may result in both direct and indirect participants 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 its payments.

(iii) Customer stress: The customer bank of a correspondent bank suffers a stress event

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

(iv) Market-wide credit or liquidity stress

37. 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 needs. 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 these assets may result in the assets no longer meeting the eligibility criteria for the central bank's intraday liquidity facilities.

38. For an indirect participant, a widespread fall in the market value and/or credit rating of its unencumbered liquid assets may constrain the bank's ability to raise intraday liquidity from its correspondent bank(s).

39. Banks which manage intraday liquidity on a cross-currency basis should consider the intraday liquidity implications of closure of, or operational difficulties in, currency swap markets and stresses occurring in multiple systems simultaneously.

Application of the stress scenarios

40. In conjunction with their supervisor, banks should consider the impact of the above stress scenarios on their 'normal' intraday liquidity monitoring indicators set out in Section II.

inform their intraday liquidity risk appetite and contingency funding plans (CFPs). CFPs should have intraday liquidity metrics included in the set of early warning indicators (EWIs).

41. The information available from the stress scenarios will inform a discussion between the bank and its supervisor to agree realistic stressed indicators. The discussion should consider the impact of the stresses in isolation and in combination and take into account the effectiveness of wider systems and controls and contingency plans that a bank may have in place to manage intraday liquidity.

42. For the *own financial stress*, *counterparty stress* and *customer stress* scenarios, direct participants will be required to report on the likely impact that these stress scenarios would have on the following indicators:

- (i) Daily maximum liquidity requirement;
- (ii) Available intraday liquidity;
- (iii) Total payments;
- (iv) Time specific and other critical obligations;
- (v) Value of customer payments made on behalf of financial institutions; and
- (vi) Intraday credit lines extended to financial institution customers.

43. For the *own financial stress* and *counterparty stress* scenarios, indirect participants will be required to report on the likely impact that these stress scenarios would have on the following indicators:

- (i) Daily maximum liquidity requirement;
- (ii) Available intraday liquidity;
- (iii) Total payments; and
- (iv) Time-specific and other critical obligations.

44. For the *market-wide stress*, both direct and indirect participants would be expected to consider the impact of the stress on their sources of available intraday liquidity.

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

C. Key application issues

46. 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 indicators.

(i) Scope of application: systems

47. Banks which are direct participants to payment and settlement systems manage 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'¹⁸ between payment and settlement systems that 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 cash to be used as collateral for domestic systems).

48. Given these variations in payment and settlement systems and the different approaches to intraday liquidity management, it is proposed that direct participants should apply a 'bottom-up' approach to the application of the monitoring indicators. The following sets out the principles which such banks should follow:

- As a baseline, individual banks should apply the monitoring indicators to each payment and settlement system in which they participate on a system-by-system-basis;
- If there is a direct real-time technical liquidity bridge between two or more payment and settlement systems, the intraday liquidity in those systems may be considered fungible. The linked systems may therefore be aggregated as one for the purpose of the indicators;
- If a bank can demonstrate to the satisfaction of its local supervisor that it regularly monitors positions and uses other formal arrangements to transfer liquidity intraday between systems which do not have a direct technical liquidity bridge, those systems may also be aggregated for the purpose of monitoring indicators.¹⁹

49. Other ancillary payment and settlement 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 their obligations in another system (typically large value payment systems). The intraday liquidity requirements arising from the settlement obligations of these ancillary systems are to be treated as the equivalent of time critical obligations. Consequently, separate monitoring indicators will not be necessary for such ancillary systems.

50. Indirect participants to payment and settlement systems should apply the monitoring indicators to the payment and settlement activity over their account(s) with their correspondent bank(s).

51. Banks which operate as both direct and indirect participants to payment and settlement systems should discuss the appropriate application of the indicators with their local supervisor, taking into account the significance of payments made directly through the payment and settlement systems and those made indirectly through correspondent banks.

(ii) Scope of application: currency

52. Most banks manage their intraday liquidity on a currency-by-currency basis. In these circumstances, the above indicators should be applied and reported on an individual currency basis.

¹⁸ A direct intraday liquidity bridge is a technical functionality built into two or more payment and settlement systems that allows banks to make transfers directly from one system to the other intraday.

¹⁹ Analogously, for banks which access a payment system indirectly through more than one correspondent bank, the indicators may be aggregated, provided that the reporting bank can demonstrate to the satisfaction of its local supervisor that it is able to move liquidity between its correspondents.

53. While not common practice, some banks manage their intraday liquidity on a multi-currency basis. If a bank can prove to the satisfaction of its local 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 the purposes of the monitoring indicators. However, banks should also report the indicators at an individual currency level so that supervisors can monitor the extent to which firms are reliant on foreign exchange swap markets.

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

(iii) Scope of application: organisational structure

55. The appropriate organisational level for each bank's reporting of its intraday liquidity indicators should ultimately be determined by the home supervisor, but it is expected that the monitoring indicators 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 timing differences), the ability of supervisory jurisdictions to ring-fence liquid assets, and any logistical constraints on the movement of collateral.

56. 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 monitoring indicator purposes.

(iv) Scope of application: responsibilities of the home and host supervisor

57. For cross-border banking groups, where a bank operates in a payment or settlement system either directly or indirectly 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 that system.²⁰ 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 ensuring 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 receive a full set of intraday liquidity indicators for its banking groups covering both domestic payment and settlement obligations and obligations in non-domestic payment and settlement systems.
- The host supervisor should have the option to require foreign branches in their jurisdiction to report intraday indicators to them as appropriate.

²⁰ Paragraph 143 of the Sound Principles 17 states "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 a subsidiary active in a non-domestic payment or settlement system

- The host supervisor should have primary responsibility for receiving the relevant set of intraday indicators 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 systems. The home supervisor should therefore have the option to require non-domestic subsidiaries to report intraday indicators to them as appropriate.

D. Reporting frequency and granularity

58. Banks are expected to report the monitoring indicators to their supervisor on a monthly basis in line with proposed LCR reporting requirements. A template reporting form can be found in Annex 2. As noted above, the indicators have been designed to apply to all banks, but it will be left to local supervisors to determine the scope of firms required to report the indicators.

59. Direct participants are expected to report the monthly average and maximum and minimum value for all of the monitoring indicators set out in Section A. In addition, they are expected to report the 5th percentile for the indicator of available intraday liquidity and the 95th percentile²¹ figure for the following indicators:

- Daily maximum liquidity requirement;
- Total payments;
- Time-specific and other critical obligations;
- Value of customer payments made on behalf of financial institution customers;
- Value of intraday credit lines extended to financial institution customers?; and
- Timing of intraday settlements

60. Indirect participants are expected to report the monthly average, maximum and minimum value for those indicators in Section II A above which are relevant to their business model. They are also expected to report the 5th percentile for the indicator of available intraday liquidity and the 95th percentile figure for the following indicators:

- Daily maximum liquidity requirement;
- Total payments; and
- Time-specific and other critical obligations.

²¹ The 5th and 95th percentiles for certain indicators are required because there will be occasions, even in normal times, when a bank's intraday activity may be exceptionally high (or low) due to unusual payment and settlement transactions. Such exceptional behaviour may distort the indicators for a bank's normal intraday liquidity behaviour and should be excluded by supervisors.

III. Request for comments

61. The Basel Committee welcomes comments on this consultative document. Comments should be submitted by **Friday 14 September 2012** by e-mail to: baselcommittee@bis.org. Alternatively, comments may be sent by post to the Secretariat of the Basel Committee on Banking Supervision, Bank for International Settlements, CH-4002 Basel, Switzerland. All comments may be published on the website of the Bank for International Settlements unless a comment contributor specifically requests confidential treatment.

Annex 1

Practical example of the monitoring indicators

The following example illustrates how the indicators would operate for a bank on a particular day.

Bank A has to settle the following 6 payments:

Payment A: 450

Payment B: 100 – to settle obligations in an auxiliary net retail payment system

Payment C: 200 – which has to be settled by 10am

Payment D: 300 –on behalf of a customer bank using some of a 500 unit unsecured credit line that the bank extends to the customer bank

Payment E: 250

Payment F: 100

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

On the given day, the bank's payment profile and liquidity usage is as follows:

Time	Sent	Received	Net
07:00	450		-450
08:00		200	-250
09:00	100		-350
10:00	200		<u>-550</u>
11:00		400	-150
12:00		300	+150
13:00	300		-150
14:00		350	<u>+200</u>
15:00	250		-50
16:00	100		-150
17:00		150	0

(i) *Daily maximum liquidity requirement:*

outflow: 550 units

inflow: 200 units

(ii) *Available intraday liquidity:*

start of day: 300 units of central bank reserves + 500 units of eligible collateral (routinely transferred to the central bank) = **800 units**

minimum intraday: 800 units – 550 units = **250 units**

- (iii) *Total payments:*
 $450+100+200+300+250+100 = \underline{\mathbf{1,400\ units}}$
- (iv) *Time-specific and other critical payments:*
 $200 + \text{value of auxiliary payment (100)} = \underline{\mathbf{300\ units}}$
Number of time critical payments not settled on time:
0
- (v) *Value of customer payments made on behalf of financial institution customers:*
300 units
Value of intraday credit lines extended to financial institution customers:
500 units
Usage of credit lines extended to financial institution customers:
300 units
- (vi) *Timing of intraday payments*
 $(07:00*450+09:00*100+10:00*200+13:00*300+15:00*250+16:00*100)/1400 = \underline{\mathbf{10:55}}$
- (vii) *Intraday throughput*

Time	Cumulative sent	% sent
07:00	450	32.14
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

Annex 2

Sample intraday liquidity monitoring return

System (or group of systems)								
Daily maximum liquidity requirement	Reporting period				Expected value in stress			
	Average	Max	Min	95th Percentile	Own stress	Counterparty stress	Customer stress	Market stress
1a. Largest positive net cumulative position								
1b. Largest negative net cumulative position								
Available intraday liquidity	Reporting period				Expected value in stress			
	Average	Max	Min	95th Percentile	Own stress	Counterparty stress	Customer stress	Market stress
2a. Central bank reserves at the start of the business day								
3a. Lowest amount of available central bank reserves during the business day								
2b. Unencumbered central bank eligible assets at the start of the business day								
2c. of which routinely transferred to central bank								
3b. Lowest amount of unencumbered central bank eligible assets during the business day								
3c. of which routinely transferred to central bank								
2d. Committed intraday credit lines at the start of the business day								
2e. Of which secured								
3d. Lowest amount of committed intraday credit lines during the business day								
3e. Of which secured								
2f. Uncommitted intraday credit lines at the start of the business day								
2g. Of which secured								
3f. Lowest amount of uncommitted intraday credit lines during the business day								
3g. Of which secured								
2h. Lowest amount of available intraday liquidity at the start of the business day (2a+2b+2d+2f)								
3h. Lowest amount of available intraday liquidity during the business day (3a+3b+3d+3f)								
Total payments	Reporting period				Expected value in stress			
	Average	Max	Min	95th Percentile	Own stress	Counterparty stress	Customer stress	Market stress
4. Gross value of payments sent								
5. Gross value of payments received								
Time-specific and other critical obligations	Reporting period				Expected value in stress			
	Average	Max	Min	95th Percentile	Own stress	Counterparty stress	Customer stress	Market stress
6a. Total number of time-specific and other critical obligations settled								
6b. Total value of time-specific and other critical obligations settled								
6c. Total number of failed time-specific and other critical obligations over period								
6d. Total value of failed time-specific and other critical obligations over period								
Correspondent banking indicators	Reporting period				Expected value in stress			
	Average	Max	Min	95th Percentile	Own stress	Counterparty stress	Customer stress	Market stress
7a. Gross value of payments made on behalf of all financial institution customers.								
8a. Total value of intraday credit lines extended to all financial institutions customers								
Correspondent banking indicators - for each of the largest five financial institution customers	Reporting period				Expected value in stress			
	Average	Max	Min	95th Percentile	Own stress	Counterparty stress	Customer stress	Market stress
7b. Gross value of payments made on behalf of that customer								
7c. of which internalised								
8b. Total value of intraday credit lines extended to that customer								
8c. of which secured								
8d. of which committed								
8e. Maximum daily usage of intraday credit lines extended to that customer								
8f. of which secured								
8g. of which committed								
Timing of intraday payments	Reporting period							
	Average	Max	Min	95th Percentile				
9. Average time of settlement								
Intraday throughput	Reporting period							
	Average	Max	Min					
10a. Throughput at 9am								
10b. Throughput at 10am								
10c. Throughput at 11am								
10d. Throughput at 12pm								
10e. Throughput at 1pm								
10f. Throughput at 2pm								
10g. Throughput at 3pm								
10h. Throughput at 4pm								
10i. Throughput at 5pm								

Annex 3

Combining the indicators

The following is a non-exhaustive set of examples which illustrate how the indicators could be used in different combinations by banks and their supervisors to assess a bank's resilience to intraday liquidity risk:

(1) Time-specific and other critical obligations relative to total payments and available intraday liquidity

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 is typically low. In such circumstances the supervisor might expect the bank to have adequate risk management tools in place or to hold a higher proportion of unencumbered assets to mitigate this risk.

(2) Available intraday liquidity relative to the impact of intraday stresses on the bank's daily maximum liquidity need

If the impact of an intraday liquidity stress on a bank's daily maximum liquidity figure is large relative to its available intraday liquidity, it suggests that the bank may struggle to settle payments in a timely manner during a stress event.

(3) Relationship between daily maximum liquidity need, available intraday liquidity and the number of time-specific and other critical obligations not settled on time

If a bank is missing its time-specific and other critical obligations, this could prompt investigation by the supervisor. If it were demonstrated that the bank's maximum liquidity need was high and the lowest amount of available intraday liquidity 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 customer payments made on behalf of financial institutions

If a large proportion of a bank's total payment activity is made on behalf of financial institution customers, and depending on the type of the extended credit lines, the settlement 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 bank.

(5) Timing of intraday payments and daily maximum liquidity need:

If a bank starts to defer its payments and this coincides with a reduction in its liquidity usage (as measured by its largest net cumulative outflow), 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 payment system overseer given the potential knock-on implications to other participants in the payments system.