CEBS

Committee *of* European Banking Supervisors

Consultation Paper on Liquidity Buffers & Survival Periods

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TABLE OF CONTENTS

Executive summary

1. This Consultation Paper proposes guidelines on the appropriate size and composition of liquidity buffers to enable credit institutions to withstand a liquidity stress for a period of at least one month without changing their business models. It should be read as a follow-up to CEBS's Recommendations on liquidity risk management (September 2008), in particular to Recommendation 16.

2. The guidelines are aimed primarily at banks' internal risk management processes, although they may be helpful for supervisory review purposes as well.

3. A wide range of liquidity buffer approaches can be found in the industry and in different regulatory regimes. Building on good practices, CEBS proposes enhancements to these approaches, which should remain tailored to the liquidity management strategy, the business model and complexity of a bank, and its risk tolerance. The more liquidity risk a bank runs, the larger its buffer should be.

4. A liquidity buffer is defined as the short end of the counterbalancing capacity under a "planned stress" view. It needs to be available outright over a defined short period of time (the 'survival period').

5. The liquidity buffer is dependant on three dimensions: the severity and characteristics of the stress scenarios, the time horizon, and the characteristics of the assets in the buffer.

6. This Consultation Paper provides a framework for deriving the overall level of the buffer as well as its relative composition from stress tests conducted over a long time horizon and their short term impact over two time horizons: at least the first week and at least the first month. No pre-defined parameters for the stress tests are proposed, as inducing credit institutions to use stress tests that are too similar could pose systemic risks by causing them to trigger the buffers in similar market conditions. CEBS's view is that each institution must engineer its own individual counterbalancing framework in the context of its own exposure, the exposure of its clients, and the nature of its business, aligning that framework with the approved risk policy.

7. Liquidity buffers must be built using cash and assets that ensure the generation of liquidity within a short time at a predictable value. The paper acknowledges the need for a greater degree of confidence in the liquidity-generating capacity of these assets for the very short term leading to the recommendation that only assets that are both highly liquid in private market and eligible at central bank standard facilities count towards the liquidity buffers. For the longer end of the buffer (at least one month), other highly liquid assets might be appropriate as well.

8. For liquidity buffers' purposes, banks should avoid holding large concentrations in particular assets: attempts to liquidate large concentrated positions, in particular for less liquid assets, could trigger illiquidity in the market itself, with declines in market prices (fire sales) causing other institutions to revalue their securities..

9. On the whole, the guidance has been kept fairly simple in order to facilitate implementation and communication with stakeholders. This simple approach needs to be complemented by on-going dialogue between institutions and their supervisors.

Guidelines

***Guideline 1* – A liquidity buffer represents available liquidity, covering the additional need for liquidity that may arise over a defined short period of time under stressed conditions.**

***Guideline 2* – Institutions should apply three types of stress scenarios: idiosyncratic, market specific, and a combination of the two. The core of the idiosyncratic stress should assume no rollover of unsecured wholesale funding and some outflows of retail deposits. The market-wide stress should assume a decline in the liquidity value of some assets and deterioration in funding market conditions.**

***Guideline 3* – A survival period of at least one month should be applied to determine the overall size of the liquidity buffer under the chosen stress scenarios. Within this period, a shorter time horizon of at least one week should also be considered to reflect the need for a higher degree of confidence over the very short term.**

***Guideline 4* - The liquidity buffer should be composed of cash and core assets that are both central bank eligible and highly liquid in private markets. For the longer end of the buffer, a broader set of liquid assets might be appropriate, subject to the bank demonstrating the ability to generate liquidity from them under stress within the specified period of time.**

Note: A few members advocate a more restrictive definition of eligible assets.

***Guideline 5* – Credit institutions need to manage their stocks of liquid assets to ensure to the maximum extent possible that they will be available in times of stress. They should avoid holding large concentrations of particular assets, and there should be no legal, regulatory, or operational impediments to using these assets.**

***Guideline 6* – The location and size of liquidity buffers within a banking group should adequately reflect the structure and activities of the group in order to minimize the effects of possible legal, regulatory or operational impediments to using the assets in the buffer.**

Introduction

10. In March 2009, CEBS published an Interim Report on liquidity buffers and survival periods as a response to the recommendation of the Economic and Financial Committee of the European Council for EU regulators to "develop and implement procedures to ensure that financial firms implement policies to better manage liquidity risk, including by creating strong liquidity cushions". The Interim Report constituted one element of the general follow-up work undertaken by CEBS after the publication in September 2008 of its Advice to the European Commission on liquidity risk management, which included 30 Recommendations for credit institutions and banking supervisors.

11. The Interim Report made broad proposals for the implementation of Recommendation 16 on liquidity buffers. Drawing on the positive feedback to the Interim Report, this Consultation Paper proposes guidelines on the composition, the time horizon to be covered, and the stress test scenarios to be considered when building a liquidity buffer. These guidelines have been prepared by the CEBS Task Force on Liquidity Risk Management in coordination with CEBS's Industry Expert Group on Liquidity (IEGL)[1].

12. The guidelines are not intended to provide an all-encompassing solution to the management of liquidity, liquidity risk, and liquidity stresses, but only to provide an approach to managing their 'front end'[2].

13. CEBS Guidelines are principles-based. They are subject to the overarching principle of proportionality.

14. The guidance set out in this paper is expected (for the majority of banks) to represent a significant strengthening of firms' liquidity positions compared with current positions (and positions as they were before the recent period of stress). It is important that increases in firms' holdings of liquid assets are made with due regard to the broader economic climate, taking into account (where appropriate) the need to avoid unnecessary constraints on bank lending as economies recover.

Considering economic impact

15. The default of a bank that plays a key role in the financial system can lead to broader costs to the economy. In economic terms this is a negative externality, a form of market failure. To make firms "internalise" the social cost of their failure, and to mitigate the impact

[1] The List of Members of the Industry Expert group on Liquidity is available on the CEBS website at http://www.c-ebs.org/Aboutus/Organisation/Consultative-Panel/Industry-expert-groups/Liquidity.aspx

[2] This paper does not explicitly consider intraday liquidity risks, and consequently any buffer calibrated against end-of-day positions could under- or over-estimate the liquidity risks it is designed to mitigate. The CPSS and the BCBS will be undertaking further work to consider the impact of intraday liquidity risk.

of other market failures[3] that may induce banks to make less provision for liquidity risk than they would in a perfectly well-functioning market, regulators may need to intervene by, for example, recommending the composition and size of liquidity buffers.

16. Such intervention may have important effects on banks' costs which in turn influence economic activity indirectly. For example, such intervention may restrict lending capacity, raise the cost of financing for borrowers, and eventually lead to reduced investment and output.

17. On the other hand, recommendations on the size and composition of liquidity buffers may lower the probability of bank liquidity crises and mitigate ensuing effects such as interest rate volatility, increased insolvency rates, increased equity risk premiums, and a drop in sustainable output.

18. CEBS is aware that there is a balance to be struck. CEBS intends to give further consideration to the economic implications of its recommendations during the consultation period, before presenting its final recommendations. CEBS encourages stakeholders to consider the impact of its proposals on their activities and on the broader economy, and to provide their views during this consultation period.

Consultation

19. CEBS welcomes market participants' views on the proposed Guidelines. In particular, CEBS seeks more detailed feedback on the composition of the buffers (GL4) as there are still discussions on the proposal that assets other than those that are both highly liquid in private markets and central bank eligible count towards institutions' liquidity buffers under certain conditions. Industry views would also be particularly helpful on the level at which buffers should operate within cross-border banking groups (GL6).

    In particular, with regard to the definition of assets that should be eligible to a liquidity buffer for a one month period of stress in a combined idiosyncratic and market-wide scenario, market participants' answers to the following questions would be most appreciated:

    1) If the composition of liquidity buffers was to be restricted to assets that are both highly liquid in private markets (including in stressed time) and central bank eligible:

[3] Examples of such market failures may be where banks may be tempted to hold less liquidity than they should, due to the immediate and higher cost that this imposes relative to the long-term benefits it may provide, or due to asymmetric information problems and deposit insurance schemes which reduce banks' exposure to market discipline and exacerbate moral hazard.

1.1 Would you foresee any shortage of eligible assets, such as government bonds, or any increase in the concentration or cost of holding such assets? Any impact on less liquid assets?

1.2 Would you expect any potential pressure points due to possible inconsistencies in the definition of the liquidity value of eligible collateral and the liquidity value of assets/collateral taking into account in the computation of the net cash outflow?

1.3 What conditions, if any, should be fulfilled in your view before a narrow definition could be applied, without undue side effects? (for example: availability of collateral, transition arrangements including its length, etc)

2) Would you consider that a too narrow definition of assets eligible to the buffers could entail a possible sub-optimal allocation of means from a macro-economic perspective? Would you see a risk of wrong incentives? Please specify, if observations/expectations refer to particular markets.

3) How would you assess the reference to central bank eligibility for the purpose of specifying which assets should be eligible to the liquidity buffers?

20. In addition, feedback on the general economic impact of the proposed Guidelines would be most appreciated. The questions listed below could help in this respect:

a. How does the return on liquid assets compare to the return on less liquid assets? Do you anticipate a (significant) impact on ROE?

b. Do you believe that CEBS's proposals could lead you to restrict your lending capacity or increase the cost of financing for borrowers?

c. Do you foresee any impact of these proposals on your business models or activities? Do they present any level playing field issues with competitors other than credit institutions?

d. Do you consider that these Guidelines can help to restore confidence in the interbank market? To improve funding costs?

21. The public consultation will run until 31 October 2009. Comments should be sent to liquidity@c-ebs.org. Comments received will be published on CEBS' website unless respondents explicitly request otherwise.

22. A public hearing will be held on 22 September 2009 at CEBS's premises to allow all interested parties to present their comments to CEBS.

1. Definition of liquidity buffer and survival period

23. The main principles underlying the function and composition of liquidity buffers are set out in Recommendation 16 of CEBS's Advice on liquidity risk management.

> ***Recommendation 16 -*** Liquidity buffers are of utmost importance in times of stress, when an institution has an urgent need to raise liquidity within a short timeframe and normal funding sources are no longer available or do not provide enough liquidity. These buffers, composed of cash and other highly liquid unencumbered assets, should be sufficient to enable an institution to weather liquidity stress during its defined 'survival period' without requiring adjustments to its business model.

24. This Consultation Paper introduces formal definitions of "liquidity buffer" and "survival period", and provides a common understanding of cash flow projections and the determination of liquidity risk. Using this concept, the paper further defines the liquidity buffer and survival period as a subset of overall liquidity and liquidity risk management.

1.1 Cash flows and Counterbalancing Capacity

25. Institutions should develop cash-flow projections covering expected cash inflows, expected cash outflows, and expected counterbalancing capacity, broken down by major business lines, instruments, and maturity buckets. When determining expected cash-flows and expected counterbalancing capacity, institutions should distinguish between contractual and behavioural flows and choose the type that is most appropriate and/or most conservative in estimating their liquidity situation over time.

26. For each maturity bucket, the sum of expected outflows should be determined and subtracted from the sum of expected inflows. Whenever this leads to a funding gap – i.e., when outflows outweigh inflows within a given maturity bucket – that gap should be filled by liquidity available from various funding sources that are part of the counterbalancing capacity or carried over from other longer maturities.

27. Two types of cash-flow projections should be made, one under business-as-usual assumptions for day-to-day liquidity management purposes and one under stressed conditions. The application of stress scenarios should be based on the business-as-usual projections. All expected flows in all lines and for all maturity buckets should then be revised according to the assumptions made under the stress scenarios. The number of scenarios and their granularity in terms of the business and the positions/sources should adequately reflect the level of complexity, business model, and size of the institution.

28. All three types of flows should be subjected to stressed assumptions, namely the inflows, outflows, and the counterbalancing capacity according to the relevant scenarios. The insights gained from this

exercise should be instrumental in developing the liquidity risk management approach, including the institution's liquidity risk tolerance, funding strategy, and contingency funding plans. The institution should, as a result, plan its liquidity generation capability, its liquidity holdings, its business strategy, and its funding approach according to its risk tolerance.

29. Whereas cash inflows and outflows are a function of the business strategy and the business model, counterbalancing capacity is a derived plan to ensure the necessary funding to allow the execution of the planned business activity and strategy over a longer term.

30. In other words, the counterbalancing capacity should be a plan to hold, or have access to, excess liquidity over and above a business-as-usual scenario over the short-, medium- and long-term time horizons in response to stress scenarios, as well as a plan for further liquidity generation capabilities, whether through tapping additional funding sources, making adjustments to the business, or through other more fundamental measures. The latter element should be addressed through the establishment of contingency funding plans. Counterbalancing capacity therefore includes – but is much broader than – the liquidity buffer.

1.2 Liquidity buffers

31. The liquidity buffer should be the short end of the counterbalancing capacity. It is defined as the excess liquidity available outright to be used in liquidity stress situations within a given short-term period. In other words, it is liquidity available without the need to take any extraordinary measures. The size of the buffer should be determined according to the funding gap under stressed conditions over specified time horizons (the "survival periods"). The survival period and the related liquidity buffer should not supersede or replace other measures taken to manage the net funding gap and funding sources, and the institution's focus should be on surviving well beyond the stress period. Therefore the survival period should be only the period during which an institution can continue operating without needing to generate additional funds and still meet all its payments due under the assumed stress scenarios.

***Guideline 1* – A liquidity buffer represents available liquidity, covering the additional need for liquidity that may arise over a defined short period of time under stressed conditions.**

32. The liquidity buffer should be determined in three dimensions: the severity and characteristics of the stress scenarios, the time horizon fixed as the survival period, and the characteristics of the assets in the buffer. The remainder of the paper sets out guidance for credit institutions' choices on these three dimensions. The first two dimensions are covered in Section 2, and the third is covered in Section 3.

2. Assumptions driving the size of the buffer

2.1 General principles

33. As liquidity risk is largely institution-specific, banks are expected to tailor their liquidity management, stress tests, and liquidity reserves to their specific needs. This, however, does not preclude the approach aiming to capture liquidity risk factors that are common to all banks.

34. The combination of tiered market structure and concentration of activity imply that the potential severity of contagion is higher for money centre banks than for small banks at the fringe of the market. This provides a rationale for authorities to focus on the liquidity risk management, stress tests, liquidity buffers, and contingency funding plans of money centre banks and underlines the case for proportionality.

35. Liquidity risk varies across credit institutions, and the underlying risk should be properly reflected. This provides a rationale for a risk-based approach. In line with CEBS's Advice on liquidity risk management, the banks' liquidity stress tests are subject to supervisory review.

36. All material sources of liquidity risk should be included under any approach, regardless of their nature as liabilities or assets, on-balance-sheet or off-balance-sheet, currency denomination etc.

2.2 Types of stresses to be considered

37. The calibration of the buffer in the first dimension will depend on the assumptions used to define the stress conditions that a banking group should be able to withstand. Three fundamental types of stresses should be considered: idiosyncratic stress; market specific stress; and a combination of the two. This has the advantage of covering most possible types of scenarios a banking group could face and providing insights into the dynamics of each of these scenarios.

38. Idiosyncratic stress is typically defined by a loss of market confidence in an individual bank or banking group, equivalent to a multi-notch downgrade. It is likely to affect all of the institution/the group's funding sources. A plausible assumption would be no rollover of unsecured wholesale funding in the acute phase of the stress. Secured funding would potentially be less affected than unsecured funding. Some outflow of retail funding is likely. As well as having an impact upon funding sources, a multi-notch downgrade can trigger demands for collateral and margin from counterparties (for example under the agreed terms of widely accepted documentation), which will have an impact upon the size of the buffer just at the time when it might most be needed.

39. The market-wide stress is typically defined as the simultaneous unavailability of several funding markets, with widespread concerns

about the solvency of financial sector firms and uncertainty about or a general decline in the value of financial assets and the impact of economic recession (or slowdown). In a market-wide shock, a general negative impact on the value of marketable assets (as well as on the marketability of some types of assets) should be assumed. Wholesale funding (both unsecured and secured, if there is a general lack of trust in financial instruments used to secure funding) should be assumed to decline first and be most affected. Wholesale funding outflows should be assumed to consist of a gradual leakage of funds, with a reduction in the maturity profile of the funding available. Significant potential liquidity requirements beyond their expected and historic levels from off-balance sheet contingent lines should also be assumed.

***Guideline 2* – Institutions should apply three types of stress scenarios, idiosyncratic, market specific and a combination of the two. The core of the idiosyncratic stress should assume no rollover of unsecured wholesale funding and some outflows of retail deposits. The market-wide stress should assume a decline in the liquidity value of some assets and deterioration in funding market conditions.**

40. Each type of stress should be characterised by specific assumptions.

41. These stress scenarios should be consistent with other bank-wide stress tests to ensure that the entire risk management system is consistent and logically integrated.

42. For detailed guidance on stress tests' assumptions, please refer to CEBS Guidelines on stress testing[4].

2.3 Time horizons

43. The time period considered should be divided into two phases: a short acute phase of stress (for example, up to one or two weeks) followed by a longer period of less acute but more persistent stress (for example, up to one or two months). This approach has the merit of looking at different levels of severity for the stress scenarios, linked to different ways of addressing the stress within the liquidity buffer. Beyond these time horizons, other measures should be considered such as contingency funding plan, activity adjustment, business model change, etc.

44. Keeping the survival periods relatively short seems necessary due to the difficulty of defining specific assumptions for longer time horizons: the static[5] dimension of liquidity buffer calibration cannot account for the changes that can occur in a bank's liquidity risk profile over a protracted period of stress. Furthermore, recent experience shows that

[4] CEBS's Guidelines on stress testing are available at http://www.c-ebs.org/getdoc/e68d361e-eb02-4e28-baf8-0e77efe5728e/GL03stresstesting.aspx

[5] "Static" refers here to the absence of change in the business model, funding strategy, or similar assumptions, and not to the modelling of the flows.

confidence in an individual bank or a given banking system can disappear rapidly.

45. The two-tiered construction of the buffer will not influence the buffer's total size, which is driven purely by the total anticipated needs over the longer of the two sub-periods; but it will ensure that the buffer is composed of appropriate assets which can be liquidated under the assumed stresses in the given sub-periods. The relative size of each of the tiers will determine the amounts of the buffer to be held in various forms with various degrees of liquidity of the assets. For the shorter end, only very cash-near assets would qualify, whereas for the remainder of the period, other funds could qualify, respecting the progressive need for liquidity anticipated over the entire survival period.

***Guideline 3* – A survival period of at least one month should be applied to determine the overall size of the liquidity buffer under the chosen stress scenarios. Within this period, a shorter time horizon of at least one week should also be considered to reflect the need for a higher degree of confidence over the very short term.**

46. The resulting buffer requirements should reflect the assumed liquidity strains in the respective sub-periods as determined by the stress scenarios.

47. The distribution of the buffer, in terms of composition and relative size over the two horizons, should reflect the projected liquidity needs given the underlying assumptions.

48. In any period chosen as the survival horizon, the buffer will need to ensure that the institution can survive each day of this period as cumulative flows build up. Banks should establish appropriate action plans to regularise the situation in the event that the buffer falls below the required minimum amount of the stress scenario.

3. Composition of the buffer

49. The buffer should be composed mainly of cash and the most reliably liquid assets, even in stressed circumstances, which banks can sell or repo regardless of their own condition (short of a complete loss of confidence) without accepting large 'fire sale' discounts which would further erode the market's confidence in them and generate mark-to-market losses for other banks holding similar instruments.

50. While highly liquid marketable assets should constitute the core of the buffer, allowing it to cover the acute phase of stress, other assets which require a longer time to liquidate could be included in the buffer, which therefore would be available for the longer end of the survival period. Assets chosen for the core of the buffer need to be liquidable with a greater degree of confidence.

***Guideline 4* – The liquidity buffer should be composed of cash and a core of assets that are both central bank eligible and highly liquid in private markets. For the longer end of the buffer, a broader set of liquid assets might be appropriate, subject to the bank demonstrating the ability to generate liquidity under stress from them within the specified period of time.[6]**

51. The liquidity buffer is a key component of any firm's liquidity risk management, being more particularly, but not exclusively, available in the event that the institution suffers an institution-specific short-term stress.

52. Eligible cash is the cash corresponding to the monetary base as defined by the central banks. It should exclude cash that is unavailable due to business-as-usual requirements such as cash held in ATMs, etc. For the purpose of determining the amount of cash available, sight deposits held in the interbank market should be treated consistently and symmetrically with assumptions made in the stress scenarios.

53. When considering the eligibility of reserves held at the central bank, it is important to take account of the particularities of the facilities at different central banks. For example, some central banks have voluntary reserve systems and some have compulsory minimum reserves.

54. In the case of voluntary reserve systems, all reserves held at the central bank should be considered eligible for the liquidity buffer.

55. In the case of compulsory minimum reserves, banks need to consider the time horizon over which the reserves may be available. For the shorter time horizon (i.e., at least one week) the entire O/N cash holdings at central banks, including reserves, can be included in the liquidity buffer. In the absence of an averaging mechanism in the reserve requirement regime, banks should, however, establish predefined action plans to regularise the reserve requirements in the event of a breach and define formal trigger points for implementing these plans. When an averaging mechanism in the reserve requirement regime applies, banks should establish predefined action plans to regularise the reserve requirements when the risk for a breach starts to arise and define formal trigger points for implementing these plans. Over the longer horizon (at least one month), only excess cash above reserve requirements may be included.

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[6] A few members advocate a more restrictive definition of the assets eligible for the buffer. One member's favoured approach is to define the liquidity buffer as comprising high quality securities that have low credit risk (not correlated with the credit risk of the banking sector) and which are resiliently liquid in private markets, even in stressed circumstances.

56. Firms should hold a core of assets that are both central bank eligible and highly liquid in private markets (such as high quality unencumbered government bonds, covered bonds, etc.; qualifying assets vary according to specific jurisdictional circumstances) to guard against severe but short-term (at least one week) periods of liquidity stress where market liquidity is under strain and the institution needs to be able to generate liquidity immediately and at predictable values without adding to the market strain.

57. For less intense but longer duration stress events (at least one month), banks may hold a wider set of liquid assets subject to the bank demonstrating the ability to generate liquidity from them under stress[7] within the specified period of time. In their internal policies credit institutions could specify criteria relevant for distinguishing assets that are more likely than others to remain liquid under stress. Such criteria could, for example, encompass characteristics of the issuer of a security; the depth and breadth of the relevant market over a sufficiently long period of time (e.g. 10 years); etc… These examples are provided as mere suggestions with a view to prompt discussion during the consultation period. It should remain clear that credit institutions remain responsible for the market liquidity risk associated with the assets they hold in their liquidity buffer.

58. As previously indicated in CEBS's Interim Report on Liquidity Buffers[8], central bank eligibility plays a role in identifying the liquid assets composing the liquidity buffer, since central bank collateral lists are defined in normal times predominantly around marketability criteria. Furthermore, the reference to central bank eligibility in this paper excludes emergency facilities that may be offered by central banks in stressed times.

59. It will be important for banks to have a clear understanding of the terms and conditions under which central banks may provide funding against assets eligible as collateral under stressed conditions. Banks should test periodically whether central banks will effectively provide funding against such assets and should apply appropriate haircuts to reflect the amount of funding that central banks might actually provide in stressed scenarios (for the assets in question and for the banks themselves). Furthermore, banks will have to demonstrate adequate diversification in the total composition of the buffer so as to guarantee to supervisors that they are not relying too heavily on access to central bank facilities as their main source of liquidity.

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[7] "under stress" means not only stressed liquidity but also stress on value of these assets (especially in the case of market and combined stress, since the value of such assets is more likely to be negatively affected).

[8] Please see CEBS's Interim Report on Liquidity Buffers & Survival Periods (March 2009), Section 3, page 12.

60. As banks are often subject to various forms of regulatory requirements related to liquidity in several jurisdictions, a potential conflict between these requirements and the demand for liquidity buffers might arise. Where such a conflict is present, the overlap between the pools of liquid assets that banks would hold in response to the present guidelines and other pools of liquid assets that banks hold to meet regulatory requirements has to be assessed.

61. The buffer is meant to be used to withstand a liquidity stress, whereas a regulatory requirement should be complied with at all times. As the liquidity buffer is determined as excess liquidity over business-as-usual conditions, banks should assess to what extent any regulatory requirement also exceeds their business-as-usual liquidity needs. In this case, a conflict potentially arises and a delineation of qualifying assets for both purposes should be made. Where assets qualify for both purposes, the liquidity buffer should be calculated as an excess over the regulatory requirement. In any other case, no conflict exists and both should be met separately without influencing each other. The only exception would be where supervisors allow a diminution of the regulatory requirement in times of stress. In this case, and where an overlap is clearly present, this part of the overlap could be included in the buffer. In any case, it is important for banks to establish a dialogue with regulators concerning possible overlaps or conflicts between the two.

***Guideline 5* – Credit institutions need to manage their stocks of liquid assets to ensure to the maximum extent possible that they will be available in times of stress. They should avoid holding large concentrations of single securities and there should be no legal, regulatory, or operational impediments to using these assets.**

62. Depending on the structure of the asset, issuer-specific factors (such as the issuer's credit quality), issuance-specific factors (such as the maturity and size of the issuance), and institutional factors (such as whether the asset is traded in centralised markets or over the counter and whether it has a diversified investor base) can be important factors in determining the liquidity of asset classes and whether they will remain liquid in times of stress. Investors are more likely to regard an asset as a safe haven when the issuer's credit quality is high, the issuance is large, it is actively traded in organised markets, and it has a diversified investor base.

63. Concentrations of particular securities should be avoided, as a market breakdown for these asset types could severely damage the institution's funding capacity. Banks should seek to diversify, for example, by issuer, maturity, and currency. The need to diversify holdings of assets becomes greater as the liquidity of the asset becomes lower (as indicated by the above factors). For example, it is more important to diversify a portfolio of high-quality corporate bonds than a portfolio of high-quality government bonds. Attempts to

liquidate large concentrated positions of less liquid assets could trigger illiquidity in the market itself, with declines in market prices (fire sales), which may force other institutions to take write-downs on similar assets that they hold. That in turn could weaken the liquidity position of other banks, prompting further asset sales and an evaporation of market liquidity, adversely affecting the financial system as a whole.

64. Firms should seek to be active on a regular basis in each market in which they hold assets for liquidity purposes. Accessing the market regularly will help to reduce the potential stigma of firms' suddenly accessing markets, alerting other firms to the fact that they may be under liquidity pressure (in turn causing more investors to withdraw funds, thereby accentuating the liquidity pressure).

65. In addition, as there may be legal or cross-border regulatory constraints that restrict firms' ability to use their buffer of liquid assets at particular times or for particular purposes, firms should also ensure that they are aware of the specific constraints that apply in particular jurisdictions.

66. To use certain funding markets (e.g., repo or securitisation), banks need to have well-established platforms that allow them to raise more funds promptly. Setting up arrangements from scratch typically requires significant due diligence and thus time. If such operational arrangements are not in place as a matter of normal business, rapid access in stressed times should not be relied upon.

67. The specification of the liquidity buffer (type and amount of assets) should also be driven by the degree to which legal entities should be self-sufficient in terms of liquidity, taking into account intra-group dependencies and the extent to which liquidity should be allocated to different currencies because of potential disruptions in swap markets, etc.

***Guideline 6* – The location and size of liquidity buffers within a banking group should adequately reflect the structure and activities of the group in order to minimize the effects of possible legal, regulatory or operational impediments to using the assets of the buffer.**

68. The buffer should differentiate between currencies, and should reflect legal entity specificities where appropriate, especially with regard to intra-group exposures. Determining the adequate location and size of buffers for legal entities, jurisdictions, and regions should be responsive to individual needs and situations. In general, several drivers of the decision process can be identified, such as operational risk considerations, the degree of centralisation of liquidity management, jurisdictional specificities in terms of winding up directives, deposit guarantee schemes and local regulatory requirements, different treatment of branches and subsidiaries, and differences in local business models, time zones and access to capital markets. A final

decision should be made and applied through the dialogue between the group and its home and host supervisors.

69. There is no single model for the organisation of liquidity management. Banks range from fully centralised liquidity management to fully decentralised independent local management of liquidity. Centralised management of the buffers may be acceptable once it has been established that there are no impediments to the transfer of liquidity within the group and the relevant regulators are satisfied that the ability to move funds between entities would be resilient in a stress situation[9].

70. As a general principle, when an entity responsible for liquidity management has a material holding of a currency, it by implication has a material level of liquidity risk in this currency and should hold a buffer for it. The holding of several buffers may impose additional costs on banks, but it addresses the risk of potential disruptions in the foreign exchange market that may impair the ability to convert across currencies.

[9] See CEBS Technical Advice to European Commission on Liquidity Risk Management, September 2008, paragraphs 94-96, for a discussion on the complexities that may arise in a banking group using centralised liquidity management.

Annex - Cash flows and Counterbalancing Capacity

1. Institutions should develop cash-flow projections covering expected cash inflows and outflows and expected counterbalancing capacity. Each of these projections should be further broken down into separate lines equivalent to the categories (origins/types) of the cash flows and/or the counterbalancing capacity. The breakdown into individual lines of categories of flows should be individual by bank and should reflect its business model, size, and complexity. The breakdown should allow an adequate representation of the main sources of inflows, outflows, and funds. Within each line, a further allocation of flows to the different time horizons in which they are expected to occur should be applied. The time horizons should be mutually exclusive and collectively exhaustive, and should be broken down into several buckets. These buckets should reflect the expected maturity of the various flows, and will be called maturity buckets. The maturity buckets shall range from overnight to one year, with intermediate categories of more than one day and up to one week, more than one week and up to one month, more than one month and up to three months, more than three months and up to six months, and finally more than six months and up to one year. Institutions are at liberty to extend their projections further if relevant to their business.

2. When determining expected cash flows and counterbalancing capacity, institutions should distinguish between contractual and behavioural flows and choose the most appropriate or most conservative type in estimating their liquidity situation over time. Indeed, there could be a huge divergence between what normally happens as a matter of day-to-day reality and what the contractual entitlements of the liability holders actually are. Contractual flows are those determined by the contractual determinants of cash-flows, such as the term period of a term deposit. In reality, term deposits are generally rolled over, and as such, a reasonable assumption could be the continuing availability of these deposits over a much longer period of time under normal circumstances. The impact of such a behavioural assumption would be to postpone the expected outflow of a specific deposit in time to a later maturity bucket than the pure contractual assumptions would imply. Where such assumptions are made, they must to be based on observed behaviour and regularly back-tested where possible. Assumptions should be revised appropriately when applying stress scenarios to expected cash-flows.

3. For each maturity bucket, the sum of expected outflows should be determined and subtracted from the sum of expected inflows. Whenever this leads to a funding gap – i.e., when outflows outweigh inflows within a given time bucket – this gap should be filled by liquidity available from various funding sources that part of the counterbalancing capacity or carried over from other periods. A cumulative view over time of the inflows, outflows, and counterbalancing capacity should be constructed to take into account

carryovers from one period to the next and to give a view on the total balance between the flows and counterbalancing capacity over time. Carryovers should be reasonable and conservative where possible. Carryovers from fairly distant periods or of major importance should be avoided, as they will increase uncertainty and hence risk.

4. Cash-flow projections of this type allow an institution to gain insight into its future liquidity situation, to plan its liquidity management, to manage its activities, and to develop alternative tactics or strategies, by uncovering potential problem areas early on. It also forms the basis for the application of stress scenarios at a later stage and hence the active management of liquidity risk, the determination of required liquidity buffers, and the dialogue with the authorities.

5. The example outlined below illustrates this concept of cash-flow projections for up to three months:

Date	Currency					
Flow Type	**Position/Souce**	**Up to 1 day**	**1 to 7 days**	**7 to 30 days**	**1 to 3 months**	**> 3 months**
Cash Inflows						
	Sum of cash inflows					
Cash Outflows						
	Sum of cash outflows					
	Net Funding Gap					
	Cumulated Funding Gap					
Counterbalancing Capacity						
	Sum of counterbalancing capacity					
	Cumulated counterbalancing capacity					

6. The example below shows a possible construction of a cash-flow projection for up to six months:

	Credit Institute						
	Date	Currency: EUR Mio (extra sheets for USD, CHF, GBP, YEN, other currencies in Euro equivalents)					
		Positions	up to 5 days	> 5 days ≤ 1 month	> 1 month ≤ 3 months	> 3 months ≤ 6 months	Comments
Cash Inflows	1.1.	Loans due from credit institutions (interbank deposits)					
	1.2.	Fixed issuances (short term, e.g. CP, CD, FRN) [incl. private placements] [conservative estimate]					
	1.3.	Fixed issuances (long-term, e.g. bonds) [incl. private placements] [conservative estimate]					
	1.4.	Expected issuances (short term, e.g. CP, CD, FRN) [incl. private placements] [conservative estimate]					
	1.5.	Expected issuances (long term, e.g.bonds) [incl. private placements] [conservative estimate]					
	1.6.	Expected inflow of wholesale deposits [conservative estimate]					
	1.7.	Expected inflow of retail deposits [conservative estimate]					
	1.8.	Expected loans due from non-banks					
	1.9.	Other (e.g. reverse repos)					
	1.0.	**Sum Cash Inflows**					
Cash Outflows	2.1.	Wholesale Funding					
	2.1.1.	Tender (due)					
	2.1.2.	Liabilities due to credit institutions (interbank deposits)					
	2.1.3.	Repos (due)					
	2.1.4.	Short-term paper due (e.g. CP, CD, FRN) [incl. private placements]					
	2.1.5.	Long-term paper due (e.g. bonds, incl. coupon) [incl. private placements]					
	2.1.6.	Planned advances to credit institutions (money market)					
	2.2.	Expected/modelled outflow of deposits [conservative estimate]					
	2.3.	Expected new loans					
	2.4.	Liquidity support of subsidiaries/branches (actually required)					
	2.5.	Other (e.g. payments for long-term liabilities, coupons)					
	2.6.	Expected calling of credit committments [non-banks, conservative estimate, no stress]					
	2.7.	Expected calling of credit committments [banks, conservative estimate, no stress]					
	2.8.	Expected financial investments					
	2.0.	**Sum Cash Outflows**					
	3.0.	**Net Funding Gap**					
	4.0.	**Cumulated Net Funding Gap**					
	5.0.	**Counterbalancing Capacity****					
	5.1.	Tender/unencumbered collateral					
	5.2.	Liquid Assets*** (Marketable Securities, excl. Collateral posted with CBs)					
	5.2.1.	Cash, excess reserves at CBs					
	5.2.2.	AAA rated [average haircut: in %]					
	5.2.3.	AA rated [average haircut: in %]					
	5.2.4.	A rated [average haircut: in %]					
	5.2.5.	BBB rated [average haircut: in %]					
	5.2.6.	Others [average haircut: in %]					
	5.3.	Other assets assets available for collateralisation [e.g. credit claims and other illiquid assets)					
	5.4.	Callable, committed creditlines					
	5.5.	Liquidity support received from holding company (binding committment)****					
	6.0.	**Cumulated counterbalancing capacity**					Self-assessment
		* Consolidated/sub-consolidated level.					
		** NB.: If the entire counterbalancing capacity can be liquidised within the first week, 5.0. will remain 0 for all other maturity bucketts [non-cumulated].					
		*** How much liquidity can be generated in the respective maturity buckett under the current market situation (e.g. by repo or sale)?					
		**** Only applicable on if completed on sub-consolidated level.					

7. Two types of cash-flow projections should be made, one under business-as-usual assumptions for day-to-day liquidity management purposes, and one under stressed conditions, following various stressed scenarios for liquidity risk management purposes. The application of stress scenarios should be based on the business-as-usual projections. All expected flows in all lines and for all maturity buckets should then be revised according to the assumptions made under the stress scenarios. The number of scenarios, their granularity in terms of the business, and the positions/sources should adequately reflect the level of complexity, the business model, and the size of the individual institution.

8. All three types of flows should be subjected to stressed assumptions concerning the inflows, outflows, and the counterbalancing capacity according to the relevant scenarios. The insights gained from this exercise should be instrumental in developing the liquidity risk management approach, including the institution's liquidity risk tolerance, funding strategy, and contingency funding plans. The

institution should, as a result, plan its liquidity generation capability, its liquidity holdings, its business strategy, and its funding approach according to its risk tolerance.

9. Whereas cash inflows and outflows are a function of the business strategy and the business model of the bank under normal circumstances, counterbalancing capacity will be viewed as a derived plan to ensure the necessary funding to allow the execution of the planned business activity and strategy over a longer term. Counterbalancing capacity should therefore provide for greater requirements for funding under stressed conditions, as well as a possible decrease in the value of any planned or future funds, and hence it should always exceed normal levels assumed under business-as-usual in order to mitigate risks. Also, the availability of certain funds, funding sources, etc., which are part of the normally assumed counterbalancing capacity should not be assumed equally under all scenarios; alternatives have to be developed and planned for. This should be reflected in a contingency funding plan.

10. In other words, the counterbalancing capacity should be a plan to hold, or have access to, excess liquidity over and above a business-as-usual scenario over the short-, medium-, and long-term time horizons in response to stress scenarios, as well as a plan for further liquidity generation capabilities, whether through tapping additional funding sources, making adjustments to the business, or through other more fundamental measures. The latter element should be addressed through the establishment of contingency funding plans. Counterbalancing capacity therefore includes – but is much broader than – the liquidity buffer.

11. For the purposes of determining a liquidity buffer, counterbalancing capacity shall be viewed as the necessary and available funding under stressed assumptions of a foreseeable nature.

12. Below is an illustration of these alternative views of counterbalancing capacity:

<table>
<tr><th colspan="2">Counterbalancing Capacity under different views</th><th colspan="3">Timeframe</th></tr>
<tr><th>View</th><th>Definition</th><th>Short-term</th><th>Medium-term</th><th>Long-term</th></tr>
<tr><td>Business-as-Usual view</td><td>Projections according to business plan</td><td colspan="3">Readily available funds to offset Business-as-Usual Net Funding Gap</td></tr>
<tr><td>"Planned Stress" view</td><td>Projections according to stressed business plan under "Planned" scenarios</td><td colspan="3">Readily available funds to offset Business-as-Usual Net Funding Gap
+
Planned additional funds to offset Incremental "Planned Stress" Net Funding Gap</td></tr>
<tr><td rowspan="2">"Protracted Stress" view</td><td rowspan="2">Readying the business for "Protracted Stress" scenarios, more severe and/or longer stresses</td><td colspan="3">Readily available funds to offset Business-as-Usual Net Funding Gap
+
Planned additional funds to offset Incremental "Planned Stress" Net Funding Gap
+</td></tr>
<tr><td colspan="2"></td><td colspan="2">Other fund generation through Contingency Funding Plan to offset Incremental "Protracted Stress" Net Funding Gap</td></tr>
</table>

13. The liquidity buffer should be the short end of the counterbalancing capacity. It is defined as the excess liquidity available outright to be used in liquidity stress situations within a given short-term period. In other words, it is liquidity available without the need to take any extraordinary measures. The size of the buffer should be determined according to the funding gap under stressed conditions over defined time horizons (the "survival periods"). The survival period and the related liquidity buffer should not supersede or replace other measures taken to manage the net funding gap and funding sources, and the institution's focus should be on surviving well beyond the stress period. Therefore the a survival period should be only the time period during which an institution can continue operating without needing to generate additional funds and still meet all its payments due under the assumed stress scenarios.

14. The liquidity buffer as a subset of counterbalancing capacity is defined conceptually below:

Liquidity Buffer as Subset of Counterbalancing Capacity		**Timeframe**		
View	**Definition**	**Short-term**	**Medium-term**	**Long-term**
Business-as-Usual view				
"Planned Stress" view	Projections according to stressed business plan under "Planned" scenarios	Readily available funds to offset Business-as-Usual Net Funding Gap + Planned additional funds to offset Incremental "Planned Stress" Net Funding Gap		
"Protracted Stress" view				