CEBS

Committee *of* European Banking Supervisors

Liquidity Identity Card

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INTRODUCTION

1. In the context of domestic-based liquidity regimes within the European Union, the proposed "Liquidity Identity Card" (hereafter "liquidity ID") aims at providing supervisors of European cross-border groups with a single prudential language in order to enable meaningful exchanges of information in going-concern situations, in particular within colleges of supervisors.

2. The qualitative and quantitative information provided in the liquidity ID is designed to enable the supervisors of a cross-border group to gain a common understanding of the liquidity risk and resilience of a group and its entities (subsidiaries and branches) in both the short and longer term, given the specificities of the group's business and its risk tolerance. Liquidity vulnerabilities can be exacerbated by inadequate capital levels. However, information on capital adequacy is not included in the ID card, as it is assumed already to be covered by information exchanges within the colleges[1].

3. The liquidity ID provides information on liquidity risk and liquidity risk management. It should serve as a basis for planning and coordinating liquidity risk supervision within colleges, as will be required under Article 129(1)(b) of the proposed revised Directive 2006/48/EC)[2]. This common set of information should:
   (i) provide a clear overview of liquidity risk at the group level, including intra-group dependencies and limits to transfers of liquidity within the group;
   (ii) enable rapid exchanges of information on the liquidity risk profile and positions of the entities of a cross-border group, and provide early warnings of possible liquidity difficulties at entities within the group;
   (iii) ensure coordinated liquidity supervision across the group to the extent possible.

4. The liquidity ID will also be a useful tool for the broader exchanges of information between home and host supervisors that are required by Article 42(a) of proposed Directive 2006/48/EC[3]. It should also capture any specific actions taken by host supervisors in the context of Article 30 of the same directive.

5. While the liquidity ID is prescriptive in nature, it is up to the college to decide exactly how it will be used (the frequency of updates, the need for a contact list of liquidity experts, etc.) and whether the information provided merits inviting representatives of the banking group to present their own liquidity risk assessment to the college. The liquidity ID should be read in conjunction with the college's monitoring template, which provides useful information on the structure, capital, and main business lines of the group.

6. Depending on the level of centralisation of liquidity risk management at cross-border groups, some information may be available only to home supervisors. Two slightly different ID templates have therefore been developed: one for the home supervisor and one for host supervisors, each covering qualitative and

[1] For more information on the supervisory colleges, please see CEBS's Template for written agreement within colleges (http://www.c-ebs.org/News--Communications/Latest-news/CEBS-has-published-a-revised-Template-for-written-.aspx) and CEBS's Good Practices Paper on colleges (http://www.c-ebs.org/getdoc/c0bbff1b-a268-4149-9897-15d1ae2bcd3c/CEBS-publishes-a-good-practices-paper-on-the-funct.aspx).

[2] The proposed Article 129(1)((b) reads as follows: The authority responsible for the exercise of supervision on a consolidated basis shall carry out "(b) planning and coordination of supervisory activities in going concern situations, including in relation t the activities referred to …/… in Annex V, in cooperation with the competent authorities involved".

[3] The work on the Liquidity ID served as the basis for responding to the European Commission's call for advice on implementation of Article 42, as far as liquidity is concerned.

quantitative information while also requiring supervisors to state clearly their opinion on the liquidity risk resilience of the supervised entities at a given point in time.

7. Each template is divided into two parts. Part one presents a common set of information ("core ID"), and Part II proposes a non-exhaustive range of additional metrics and indicators that could prove helpful in assessing and following up on an institution's liquidity risk profile and potential vulnerabilities.

8. Notwithstanding their domestic liquidity regimes and regulatory reporting requirements, the supervisors of cross-border groups should have at their disposal the same types of information, to allow meaningful exchanges of information. Definitions are therefore provided, in particular in the Annex, to ensure homogeneous implementation of the listed metrics and indicators to the greatest extent possible.

9. In addition, specific guidance is provided for optimising the choice of additional metrics or indicators, if needed, based on the liquidity risk associated with the strategy and main business lines of the group and its entities. This does not preclude supervisors from exchanging additional or more detailed information, depending on the setting of the colleges and the risk profile and the specificities of the group.

10. The liquidity ID is not meant to substitute for a single liquidity regime or to modify the home-host allocation of responsibilities set out in Directive 2006/48/EC. Nor is it intended to establish common reporting requirements, although adjustments to the current domestic reporting frameworks may be necessary in order to provide liquidity information in line with the proposed definitions.

11. **The proposed indicators will be reviewed at the latest one year after implementation in order to adjust the indicators based on user feedback and to ensure their consistency with other indicators currently being developed in the European Union and globally.**

12. The CEBS report on lessons learned by supervisors emphasised the need to enhance a group's perspective on liquidity risk. CEBS members will therefore be expected to make all necessary efforts to comply with the provisions of the liquidity ID. When a supervisor is not be able to provide the required information under the proposed format, it will state this clearly when completing a liquidity ID template and indicate the alternative definition used, in line with the "comply or explain" approach.

A/ Liquidity Risk Identity Card for Consolidating Supervisors

Date of completion: XX/XX/XXXX

Name of the banking group:

Name of the group's consolidating supervisor:

Overall supervisory opinion of the liquidity risk profile[4] 

Brief comments to support the assessment (if necessary): *For example, (absence of) concerns on the liquidity situation of the group following a recent on-site examination; information on (non-)compliance with domestic liquidity regulations; liquidity buffer used/not used; information on significant follow-up actions.*

The quantitative information provided below is in line with the definition and guidance provided in the Annex Yes O / No O

If "No", please explain why and describe the extent and impact of the divergence.

[4] *Please tick the appropriate box:*
Green: satisfactory: no major concerns
Yellow: satisfactory, but tensions have been identified
Red: unsatisfactory: there are major difficulties or concerns with regard to the entity

Part I – Common set of information (Core ID)

1. General and qualitative information to be provided at the group level

Objective: To clarify the degree of centralised management of liquidity risk and liquidity support of the group

Please tick the appropriate column in the table below.

		Yes	No	Not Fully
1	**Liquidity strategy** - Does the parent company (or any other relevant entity of the group) define the liquidity strategy that is applied by all of the entities of the group?			
Please explain				
1.a	**Cash pooling** - Does the parent company (or any other relevant entity) manage funds centrally (e.g., via cash pooling?)			
Please explain				
1.b	**Liquidity support in normal times** - Does the parent company (or any other relevant entity) provide most or all of the entities of the group with liquidity support?			
Please explain				
1.c	**Stress test scenarios** - Does the parent company (or any other relevant entity) design group-wide liquidity stress scenarios?			
Please explain				
1.d	**Liquidity buffer** - Does the parent company (or any other relevant entity) define and hold a liquidity buffer for the entire group?			
If "Yes" or "NF", please explain whether or not this buffer complements local buffers. Please indicate where it is held, in what currency, how it is calibrated and whether there are internal allocation rules.				
1.e	**Concentration –** Are there any maturity dates at which funding concentrations arise?			
If "Yes", please explain.				
2	**Liquidity policy** - Does the parent company define internal limits or metrics for liquidity risk that apply to all of the entities of the group?			
Please explain				
3	**Obstacles to liquidity transfers** - Are there any impediments in the liquidity policy or prudential regulation, or any other legal or fiscal impediments to transferring cash or collateral to foreign subsidiaries or branches?			
Please explain				
4	**Contingency Funding Plan** – Is there a single group-wide CFP that only the parent company – or another relevant entity – can activate?			
Please explain				

2. Quantitative information

Objective: To allow supervisors to have a view on:

- short-term resilience as indicated by a liquidity buffer
- longer-term resilience and changes in balance sheet structure

These metrics can be complemented by the additional metrics or indicators presented in Part II to take into account the specific business model and activities of the group (please see Annex).

The level (solo, sub-consolidated, consolidated) at which consolidating supervisors compute the quantitative metrics needs to be indicated clearly. While this choice is left to the supervisors, it is generally agreed that consolidated data have more meaning if the banking group under review operates under centralised liquidity management than if it has a decentralised management model.

2.1 Liquidity Buffer

Objective

Any relatively short-term liquidity stress – maturity mismatch or contingent liability – should be covered by a buffer of cash or highly liquid assets sufficient to weather a period of liquidity stress lasting at least one month. For this reason, a clear view on the capacity of the liquidity buffer is a top priority for any supervisory assessment of the liquidity position of a firm.

Indicators

- size of the buffer(s)
- composition of the buffer(s) (type of assets, duration, and principal currencies)
- contextual information (principal assumptions used for the combined stress scenario and time horizons considered)

Definitions

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.

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 time period can 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). 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 under stress from these types of assets within the specified period of time. The adequate size of the buffer is derived from three types of

stress scenario (idiosyncratic, market specific, and a combination of the two). However, in the context of the liquidity ID, the assumptions of only the most demanding scenario, i.e., the combination of an idiosyncratic and market specific stress scenario, need to be disclosed.

2.2 Long-Term Funding Ratio

Objective
To assess the potential liquidity risks associated with an institution's longer-term balance sheet position.

CEBS recommends that the colleges also disclose information on the components of the ratio.

Indicator

1) Long-term funding ratio

The long-term funding ratio compares long-term, stable funding ("core funding") with long-term assets. The ratio measures the extent to which core funding is used to finance longer-term, illiquid assets and contingencies. Based on the individual components of the ratio – long-term funding and illiquid assets - it is possible to determine whether and to what extent any excess of long-term funding over illiquid assets is available to absorb unexpected liquidity needs. Thus, the excess of core funding compared to long-term assets (the "net") indicates the capacity to fund volatile asset positions such as additional haircuts on assets and other contingencies.

$$\frac{\text{Retail deposits + wholesale funding > 1 year + equity instruments}}{\text{Illiquid assets + } \textit{contingent liabilities}}$$

NB: It would be useful to report the individual components of the ratio as well as the ratio itself. Please indicate if contingent liabilities are not available.

Some fine-tuning may be necessary in the light of the Impact Assessment. There may be merit in taking wholesale funding with a maturity of less than one year into account to some extent. In addition, due to the contingent liability component, the long-term ratio will probably be quite low. To avoid this risk, only a portion of contingent liabilities may be reported, based on the supervisor's judgement.

Definitions
The behaviour of funding sources should be the key driver in defining retail and wholesale funding. For this reason, a specific *a priori* definition cannot be given. The definitions of the components of the ratios are presented in the glossary. "Retail" and "wholesale" should be mutually exclusive and collectively exhaustive, so that their sum is equal to total liabilities.

2.3 Diversification of the funding structure

Objective
To monitor and prevent excessive reliance on wholesale funding and on concentrations of depositors.

CEBS recommends that the colleges also disclose information on the components of the ratio.

Definitions of secured and unsecured funding and wholesale funding are provided in the glossary.

Indicators

1) Wholesale funding ratio

In periods of stress, on-demand wholesale funding will be withdrawn at an early stage, and other wholesale funding will not be rolled over as it comes due. Moreover, contractual term deposits may in practice be broken open in spite of penalties. Thus the ratio of wholesale funding to total liabilities is the starting point for analysing an institution's reliance on credit-risk-sensitive – and therefore volatile and vulnerable – funding sources.

The wholesale funding ratio defined below is supplemented by an indicator of the unsecured portion of wholesale funding, in order to detect the dependency between the amount and value of available collateral and total available funding. If the proportion of secured funding is significant, it may be necessary to take a closer look at the quality of the underlying assets.

- Wholesale funding / total liabilities

- Unsecured wholesale funding as a percentage of total wholesale funding

It would be useful to provide the amounts of total wholesale funding and unsecured wholesale funding.

2) Funding Counterparty Concentration indicator

A large deposit from a specific counterparty implies a large funding risk if the deposit is withdrawn. Thus an indicator of the largest depositors will alert supervisors to counterparty concentration risks in the institution's funding.

The amount of each of the five largest depositors held at the parent institution across all currencies

The indicator covers intra-group funding.

2.4 Domestic quantitative ratio (if any)

Supervisors should have information about each other's systems. To be able to form a common understanding of local ratios, the definitions of the ratio must be provided. If a firm does not comply with local requirements, this should be reflected prominently in the overall supervisory assessment.

Part II – Additional "à la carte" information

This Part describes the metrics and indicators, including some market indicators that may be used in addition to the basic common metrics. **It will be up to the supervisors, in particular within a college, to decide which additional indicators, if any, should be considered for monitoring a given banking group's liquidity risk.**

1. Market indicators

Objective
To be alerted to potential funding weaknesses at an early stage.

Indicators

It is important to distinguish between general and bank-specific market stress factors. Both are relevant from a supervisory perspective, but bank-specific (idiosyncratic) indicators are the most important in the context of information exchange.

1) Bank-specific price indicators

- Share prices, indices
  - Share price of the group or, if relevant, of subsidiaries
  - Share price trends over one year compared to the relevant index, such as the Stoxx Financial Services price index (Bloomberg: SXFP Index) or the S&P 500 Banks index (Bloomberg: S5BANKX Index).

- CDS spread by name, trends over 6 months; absolute credit spread and relative to peer group, or a general index
  - Most liquid CDS: current, 5 yr CDS
  - [2 -3] peers
  - EU: iTraxx Europe index (most actively traded names in the six months prior to index roll): iTraxx Financials Senior, iTraxx Financials Sub, (Bloomberg: SNRFIN CDSI S10 5Y Index)
  - VS and emerging countries: CDX, Financials

- Credit spreads by name:
  - Institutions' bond yield, senior debt (3, 5, 10 yr) minus government bonds in relevant currency
  - CD's, CP debt spread, compared to peers
  - Ordinary savings interest rate, saving deposits compared to peers

CDS spreads and bond yield spreads should normally provide the same indications, but they could diverge due to market liquidity. They may be used together or alternatively.
One bank-specific indicator is the evolution of equity prices over time. Research has shown that in many cases – but not all – idiosyncratic liquidity stress was preceded by a decline in the share price of the institution, particularly when the share price of the institution diverged from the general index for comparable financial firms.

Another stress indicator can be found in credit spreads on the various debt products issued by an institution. The indicator is the spread between the yield on these debt products and the yield on government

debt (Treasuries) with the same maturity (e.g., 10 years), or the difference in yield for that tenor according to a generally accepted swap yield curve. Subordinated debt will be more sensitive than senior debt, but both may be used as indicators. Prices are taken from trades in the secondary market or at issue. As with equity prices a comparison should be made with peers, based on a relevant index for the peer group. One specific indicator of credit risk is the credit spread according to CDS prices, compared to a CDS index relevant for the firm.

This information can be based to a large extent on general information systems. However, institutions may provide contextual information on bank-specific spreads. Some information on relevant spreads may not be available. In particular, in the case of central funding by the holding, parent, or specialised financing group entity, information about funding costs is not always available to the supervisor. This kind of information should be requested from the institutions themselves.

2) Generally available market stress price indicator

- US $: Libor/OIS spread; Libor/Overnight Index Swap development over 1 yr
- EU, €: Euribor/OIS spread; idem, development over 1 year

2. Synthetic Maturity ladder

Objective
To provide summary information on the reliance of the banking group and its entities on maturity transformation, as a starting point for supervisory dialogue.

Proposed indicator

For information exchange purposes, a maturity ladder presenting at least the total expected cash inflows and outflows including off-balance sheet items, and overall counterbalancing capacity over 6 months, is deemed useful.

This information should be based on contractual data, adjusted by behavioural assumptions where appropriate. Supervisors should provide information on the behavioural assumptions used. A 5-year horizon is not proposed here, since the relevance of behavioural assumptions decreases over a longer time horizon.

The definition of the rows of the ladder is left to each supervisor. As general guidance, the most important line items can be distinguished by liquidity behaviour, and need not follow traditional balance sheet classification. It is generally helpful to distinguish at least between items with retail versus wholesale liquidity behaviour.

The maturity ladder shows the positive or negative maturity mismatch (*gap*) for each time band, based on cash inflows and outflows in each time band. The positions in the different time bands can be aggregated to determine the *cumulative liquidity gap* over a given period. Knowing the cumulative gap over a certain period, a minimum liquidity buffer or –

more broadly – the necessary counterbalancing capacity for the defined period can be determined.

Without any adjustments for behavioural assumptions, the resulting liquidity gap implies a theoretical liquidation scenario. The raw data based on contractual terms need to be adjusted for going-concern scenarios and stress scenarios in order to determine more realistic gap positions.

The adjustments made in this context reflect the fact that the *effective* maturity of some demand liabilities is longer than *on demand* (1 day), and has to be estimated based on experience. They also take into account whether, in practice, the amounts will be rolled over almost fully, partially, or not at all, depending on the chosen scenario. A similar adjustment should be made to cash inflows on assets due to redemptions, which will be and should be re-invested without running reputation risk or having to change the business model. Hence, to some extent the relevant cash inflow may not be considered as free available liquidity in the relevant time band. At the same time, adjustments – sometimes far reaching – must be made for the liquidity risk of contingent liabilities, whether or not they are contractually based, and for term deposits whose terms will be broken open during stress, with or without penalty clauses.

The exchange of information on behavioural maturity ladders within a group is essential, as customer or counterparty behaviour can vary substantially from one country to the next. The local supervisor is best placed to assess the extent to which the contractual commitments signed locally should be adjusted to reflect the expected behaviour of different categories of customers and counterparties. In addition, supervisors should be able to challenge banks' behavioural assumptions.

The table below shows an example of a possible maturity ladder, building on the funding structure (not the balance sheet structure). The level of granularity is tentative.

	1 week	**1 month**	**3 months**	**6 months**
Cash inflows				
Cash				
Loans due from credit institutions/interbank				
Loans due from non-banks				
Other (i.e. reverse repos) FR: repos				
Off-balance sheet financial instruments (derivatives?)				
TOTAL CASH INFLOWS				
Cash outflows				
Wholesale funding (interbank + issued securities)				
Tender (due)				
Liabilities to credit institutions				
Repos (due), FR: reverse repos				
Customer deposits				
Off-balance sheet financial instruments (derivatives?)				
TOTAL CASH OUTFLOWS				
COUNTERBALANCING CAPACITY				

3. "Core funding ratio" (Stable funding over liabilities)

Another type of long-term funding ratio is the amount of stable or "core" liabilities as a percentage of total liabilities and equity (the "core funding ratio"). This ratio provides insight on the extent to which effective long-term funding is used, given the business model. It reveals structural shifts in funding, which serves as a macro-prudential indicator for general developments in the funding behaviour of credit institutions.

The core funding ratio is calculated using the same data (in the numerator) as the long-term funding ratio:

$$\frac{\text{Retail deposits + wholesale funding > 1 year + equity instruments}}{\text{Total liabilities + equity instruments}}$$

4. Examples of additional metrics for specific vulnerabilities

Two examples of metrics drawn from the list of vulnerabilities presented in Annex are provided below. Other examples can be found in the Annex.

These additional indicators are not exhaustive, and it is up to each college to select the appropriate metrics for the business profile of the group, or to define other *ad hoc* indicators if appropriate.

Foreign currencies

Objective: To assess the magnitude of currency liquidity mismatches.

Examples of metrics:

- **Net cumulative (wholesale) funding gap in main foreign currency (or currencies) in period n, e.g. 1 month, 3 month, etc…**

For the 1-month period, it may be useful to assess the impact of including the liquidity buffer (liquid assets) denominated in the foreign currency under consideration for the funding gap analysis.

- **Swap market hedges on average (over period n)**

Central Bank relations

Objective: Assess the central bank refinancing dependency

Examples of metrics:

- Average percentage of funding from central banks over period n.
- Peak funding from the central bank (and frequency of outliers) during period n as an indicator of the adequacy of liquidity management.

B/ Liquidity Risk Identity Card for Host Supervisors

Date of completion: XX/XX/XXXX

Name of the banking group:

Name of the entity concerned (please specify if branch of subsidiary):
……
In the case of multiple entities win the same country, there is no need to fill out separate identity cards for each entity; an 'aggregated' view will suffice.

Name of the entity's supervisor:

Overall supervisory assessment of the liquidity risk profile[5]

Brief comments to support the assessment (if necessary):

For example: Entity X complies with the domestic liquidity regulation; or an on-site examination has been carried out recently and the difficulties identified previously have been adequately addressed by the entity.

The quantitative information provided below is in line with the definition and guidance provided in the Annex Yes O / No O

If "No", please explain why and describe the extent and impact of the divergence.

[5] *Please tick the appropriate box:*
Green: satisfactory: no major concerns
Yellow: satisfactory, but tensions have been identified
Red: unsatisfactory: there are major difficulties or concerns with regard to the entity

Part I – Common set of information

1. General and qualitative information:

Objective: to provide a clear picture of the specificities of the liquidity risk profile and risk management of a given entity within a banking group.

Please tick the appropriate column in the table below.

		Y	N	NF
1	Is the entity a key player (e.g. a money market or currency centre, securities/derivatives key market player, clearing & settlement) in the domestic country? Please specify.			
2	Does the entity have its own liquidity buffer (i.e., is the buffer defined and located at the entity level)? Please specify.			
3	Does the entity define its own stress scenarios and contingency funding plans? Please specify.			
4	Are there any cross-border impediments (other than legal or regulatory: i.e., set out in the liquidity policy) to transferring cash or collateral to the parent/head office? Please specify.			
5	Does the entity have access to liquidity on its own right (i.e. is its funding independent from the parent)? Please specify.			

2. Quantitative information

The metrics proposed here are the same as for home supervisors, with the exception of long-term funding ratios, which would not be relevant for branches since they do not have capital as such; nor for subsidiaries, unless if they have a largely self-sufficient funding policy.

Part II – Additional "à la carte" information

Same types of information as for the Home supervisor

GLOSSARY

A selection of definitions and/or recommendations are presented below in order to facilitate the computation of the metrics put forward in part I and II of the Liquidity Identity Card. This glossary is not intended to be exhaustive and may need updating based on users' feedback.

Equity instruments

The attention of supervisors is drawn to the risk of double-counting the subordinated debt components of regulatory capital as part of wholesale funding.

Illiquid assets

For the purpose of calculating the long-term funding ratio, illiquid assets consist of:

- Relatively non-marketable assets with a remaining maturity of one year or more, and non-maturing relatively non-marketable assets such as real properties.
- If available, haircuts to liquid assets: the *sum of all haircuts, whether derived from central bank policies or from internal policies,* applied to the liquid, marketable, and CB-eligible assets taken into account in computing of liquidity buffers.
- *Contingent liabilities,* including the maximum off-balance sheet credit risk exposure according to IFRS 7 as included in paragraph 36(a): *i.e., the amount by class of instruments that best represents the entity's maximum exposure to credit risk at the end of the reporting period without taking account of any collateral held or any other credit enhancements (such as netting agreements that do not qualify for offset under IAS 32).* This definition includes the amount of undrawn loan commitments which are irrevocable over the life of the facility or which are revocable only in response to a material adverse change. If the issuer cannot settle the loan commitment net in cash or another financial instrument, the maximum credit exposure is the full amount of the commitment. It also includes financial guarantees. In this case, the maximum exposure to credit risk is the maximum amount the entity could have to pay if the guarantee is called on.

For derivative contracts, the maximum credit risk exposure under IFRS 7 definition includes only the *on*-balance carrying - fair value - amount of the contract (if the resulting asset from derivatives is measured at fair value). In the context of Part II, an additional best estimate proxy amount of market risk related to potential off-balance-sheet liabilities may be agreed. This may also be the case for contingent liabilities related to securitisation (for example, due to performance triggers or buy-backs) and any non-contractual reputation-related "liability".

Metric:

In the context of the liquidity identity card, the term "metric" is used for a measure that facilitates the quantification of some particular characteristic of a bank's liquidity position or risk. As there is no single measure or simple quantitative number that captures the complexity of an

institution's liquidity risk, a set of metrics must be used in order to form a view on the institution's short- and long-term resilience to liquidity risk.

Metrics allow supervisors to compare data for a specific bank with supervisory benchmarks or standards and to detect important trends, especially compared to peers. Some measures are needed for bank-specific analysis, while others are used for macro-prudential analysis (and are more suitable for this purpose).

Retail funding:

Retail funding, broadly defined, includes SME with less sophisticated treasuries. Retail funding is understood to be the most behaviourally stable component of funding as a whole.

Secured funding:

Funding for which collateral has been provided at the reporting date.

Wholesale funding:

Wholesale funding is funding provided by professional – credit-risk sensitive - counterparties. It should include at least the following items (the list is not exhaustive):

- Issued debt securities, both unsecured and secured (e.g., covered bonds)
- Deposits and secured funding (e.g., repos) from credit institutions, other financial institutions, and governments
- Secured and unsecured funding from central banks
- Deposits and secured funding from "professional money market players" with a professional treasury function, such institutional investors and large corporations.

This list can be complemented by a more precise definition by the relevant supervisors. For example, fiduciary deposits may meet the criterion of professional counterparties. During periods of stress, they may to a large extent exhibit wholesale counterparty behaviour.

Long-term wholesale funding

For the purpose of calculating long-term funding ratios, long-term wholesale funding is defined as the total of secured and unsecured wholesale funding with a remaining contractual maturity superior to one year.

ANNEX – Mapping of general and business-line-specific liquidity-related vulnerabilities

1. Liquidity risk can be measured with a wide range of metrics. For the purpose of information exchange, supervisors need to choose metrics for measuring the most important liquidity vulnerabilities. Some of these liquidity vulnerabilities are general in nature, while others relate to the specific business model of the entity and the typical mix of activities in its business lines.
2. Consequently, a customised range of metrics is needed for information exchange, in addition to the common set of metrics listed in the "core ID" (Part I). These additional metrics will be determined by the colleges depending on the vulnerabilities of the individual institutions, based on the (non-exhaustive) list of potential vulnerabilities presented below.

I - General vulnerabilities

Independent of the business model used, there are some specific issues that could generate liquidity risk at an institution.

1.Intra-group exposures	Refers to	Vulnerabilities
o Intra-bank o Intra-group o Centralized management o Non-centralized	Liability side/cash outflow:	• Intra-group/bank drawings o Unsecured o Secured: adequacy of collateral
	Asset side/cash inflow:	• Branches' exposure to foreign head office (or other members of a banking group), credit risk (?) transparency, concentration on funding from consolidated entity and/or subsidiary • Market access • Subsidiaries' exposure to other members of the group • Collateral value of secured exposures • Regulatory ring-fencing by home supervisor or host supervisor
	Gap position	Net exposure

Examples of possible metrics:

- Net exposure.
- Intra-group exposure maturities.
- Volatility of amounts, or maturity.
- Intra-group exposure (assets) or intra-group liabilities on average.
- Percentage of total assets, or liabilities.

2.Foreign currencies	Refers to	Vulnerabilities
	Liability side/cash outflow:	• Convertibility, currency swap market functioning, general/idiosyncratic
	Asset side/cash inflow:	• Asset currency denomination
	Gap position	• Currency mismatch

Examples of possible metrics: please see part II

3.Payment & Settlement	Refers to	Vulnerabilities
o RTGS systems o Other o Correspondent banking	Liability side/cash outflow:	• Unencumbered collateral position at CB • Credit line usage of correspondent bank; undefined limits
	Asset side/cash inflow:	• Unexpected encumbrance of assets
	Gap position	• Net scheduled unencumbered collateral position

Examples of possible metrics:

- Net scheduled unencumbered collateral position.
- Amount of failed trades on average (over period n).
- Maximum collateral usage for (each) payment system and settlement system (peak position of encumbered collateral during period n).
- Stress scenario with wider haircuts on collateral. Pledging limits.

4.Clearing & Settlement business	Refers to	Vulnerabilities
o Central Clearing (CC) o Clearing Membership (CM)	Liability side/cash outflow:	• Margin requirements • Clearing fund commitments • Withdrawal of professional clients' deposits and collateral • CM responsibility to central clearing for customers' short positions
	Asset side/cash inflow:	o Market value/market liquidity of collateral, o Adequacy of haircuts
	Gap position	Mismatch between liquid collateral/deposits received and (potential) customers' liabilities from trading positions

Examples of possible metrics:

- Mismatch between liquid collateral/deposits received and (potential) customers' liabilities from trading positions.
- With regard to clients' trades: stressed haircuts and margin.

- Connected/correlated clients deposit concentration (e.g. from hedge funds) as percentage of total deposits/liabilities.

5.Secured Funding	Refers to	Vulnerabilities
o Repo business, Securities lending/borrowing o Securitisations	Liability side/cash outflow:	Contingent liabilities o Margin/collateral calls o Market liquidity o Credit/liquidity facilities
	Asset side/cash inflow:	o (Un)encumbrance planning/scheduling o Transparency of market values o Liquidity of securities
	Gap position	Net position to deliver securities Operational settlement risk Fast increasing mismatch due to stressed funding of ABS, ABCP

Example of possible metrics:

- Net position to deliver securities in relation to liquidity of securities lending and borrowing market during stress (e.g. as indicated by market delays/failures to deliver due to market constraints).

…..

6. Central Bank relations	Refers to	Vulnerabilities
o "G10" central banks o Other central banks	Liability side/cash outflow:	Roll-over dependency of central bank standard facilities: • Tender-based assignments, no guarantee to full assignment • *Temporary* longer-term refinancing operations • Stigma/reputation risk with regard to emergency (overnight) refinancing operations
	Asset side/cash inflow:	Adequacy of eligible collateral: • Various eligibility criteria by various central banks • Denomination in eligible currencies • CB, (G)CDS location, geographical location, transferability • Variations in range of eligible collateral • Variations in haircuts • *Temporary* extended range of collateral, securities swap arrangements etc: • Potential cliff effect at end of special crisis rules • Market valuation of eligible collateral • Encumbrance due to RTGS payment and settlement systems
	Gap position	• Central bank refinancing dependence related maturity mismatch

Explanation

- For example: due to fair value valuation issues for eligible ABS, the total haircut to the nominal value can be unexpectedly large.

Examples of possible metrics: please see part II

7. Derivatives	Refers to	Vulnerabilities
Derivatives o Futures/forwards/swaps o Options o CDS o Margin and collateral requirements	Liability side/cash outflow:	• Futures and options: margin requirements: variation (cash) margin • (OTC) Forwards and swaps: cash margin/collateral requirements • CDS: downgrade trigger-related collateral requirements, • TRS: term structure vulnerability • Misstated liquidity characteristics of call features embedded in structured investment products (e.g., 10-year term but three month rolling deposits liquidity profile
	Asset side/cash inflow:	• Inverse correlation between the complexity of an asset derivative position and its liquidity o Volatile m-t-m asset value o Documentation-risk-related settlement issues
	Gap position	▪ Liquidity gap due to TRS term structure mismatches ▪ Net margin requirements due to uncovered liquidity hedge from a basically VaR-neutral hedged position based on exchange-traded derivatives and OTC derivatives ▪ Negative basis transactions

Explanation

- Total Return Swap arrangements are used for funding purposes. The TRS is used to take advantage of differences in funding costs between firms. Institutions with a low cost of funding can finance assets on-balance sheet and transfer the economics of these assets via a TRS to a firm with a higher cost of funds. The difference is shared. However, the entity may seek to benefit from the term structure of financing costs by providing long-term financing via a TRS hedged with a TRS of a shorter duration. Institutions may therefore be exposed to the risk that the "hedge" TRS does not roll over at its maturity.
- Negative basis transactions: purchase of credit assets, funded via Treasury; and the hedging of the associated credit risk through the purchase of CDS protection.

Examples of possible metrics

- Stress scenario results.

- Downgrade trigger levels with regard to collateral agreements (CSA).
- Incomplete (liquidity) hedges: liquidity gap due to TRS term structure mismatches or negative basis transactions.

8. Liquid assets, Collateral	Refers to	Vulnerabilities
o Liquidity of assets o Collateral management	Liability side/cash outflow:	• Adequacy of collateral movements scheduling • Shortages in securities borrowing market for return delivery of securities borrowed
	Asset side/cash inflow:	• Adequacy of a liquidity buffer for short-term purposes (1 month) with highly liquid/marketable and eligible assets relative to a pool of marketable assets for counterbalancing purposes on a longer term. • Appropriateness of the ratio between central bank eligible, highly marketable assets to central bank eligible but less marketable assets. • Central bank eligible assets vulnerabilities: see central bank relations Unencumbered marketable assets: • Time to convert to cash • Outright sale: market liquidity/market price volatility • Repo, securities lending: market and bank-specific related haircut-variability or access impediments • Location, e.g., in CDS or geographical area: transferability issues (local impediments such as regulatory ring-fencing, tax issues, operational infrastructure) • Encumbered/unencumbered: adequate collateral management/scheduling of collateral movements and projected periods of encumbrance • Appropriate currency denomination/ related currency conversion hurdles
	Gap position	• Net availability of scheduled unencumbered eligible assets/collateral • Net availability of scheduled unencumbered highly liquid and marketable assets/collateral

		• Net availability of scheduled less liquid unencumbered marketable assets/collateral

Examples of possible metrics

- Net availability of scheduled unencumbered eligible assets/collateral
- Net availability of scheduled unencumbered highly liquid and marketable assets/collateral
- Net availability of scheduled less liquid unencumbered marketable assets/collateral
- Distinction in the portfolio of pledgeable (CB and industry criteria) and repo-able assets in the market during stress. Relative size of haircuts applied. Net cash capital position (resilience to haircut fluctuations).

II - Business model, business lines

3. In the following overview, various business models and business lines are listed with the corresponding specific liquidity vulnerabilities that can be linked to various metrics. Additional explanation on certain vulnerabilities is provided separately if the topic is not self-explanatory.
4. At any particular institution, inadequate diversification in the funding basis or the underlying collateral is always a direct consequence of over-reliance on one business model, and may need to be addressed by the college as part of the institution's RAS (see Guidelines on Liquidity Buffer). Whatever the business model, liquidity risk has to be assessed separately for each currency, as FX markets may be disrupted in times of stress. This assessment should also take into account potential covenants.
5. The following tables list vulnerabilities in terms of liquidity risk of individual business activities and the underlying business model.
6. In the first table, the particular vulnerabilities of the deposit-taking business as a main activity and funding source are listed. This applies particularly for direct banking entities.

1. Retail business activities	Refers to:	Vulnerabilities
1. 1 Saving business		
o Specialised "direct" banking entities and specialised ordinary savings	Liability side/cash outflow:	• Correlated *rapid* withdrawal related to: o Entity's, and group's or banking industry's reputation/capital adequacy o Relative extent of deposit

business		insurance o Loose relationship to the bank • Decay of deposits due to o Competitiveness of interest rates o Level of interest rates
	Asset side/cash inflow:	• Non-diversified assets • Marketability, eligibility • Intra-group exposures
	Gap position	• Fixed term: contractual maturity, early redemption due to penalty clauses • Open term: core duration according to stochastics

Explanation

- o The level of interest may influence the client to substitute savings for alternatives. A very low level may make a saving funding basis less stable.
- o Intra-group exposures: savings orientated banks are often highly dependent on intra-group assets on the asset side of their balance sheet.

Examples of possible metrics

- distinction of DGS insured savings and non-insured. *In cash flow projections, higher retention - or roll over - rates may be assumed for insured savings. Lower retention/roll over rates should be applied to savings attracted via Internet direct banking formulas, if clients ties can be assumed to be loose.*
- Cash flow projections for stressed scenarios may be insufficient if based only on stochastic approaches

The following vulnerabilities might be found at credit institutions whose main business model is residential mortgage lending.

1.2 Residential mortgage business	Refers to	Vulnerabilities
o Secondary home market residential mortgages o New home/building mort-gages o Mortgage offers	Liability side/cash outflow:	• Growth of business (funding) vulnerability • Required rather long effective funding duration (if no securitisation) • Core retail deposits stochastics, correlated reputation-related withdrawals during stress. • High credit-risk-related wholesale funding sensitivity during downturn: o Unsecured: idiosyncratic credit risk and general wholesale/interbank market liquidity linked risk of impeded market access and withdrawals

		○ Secured: general market and counterparty credit risk linked risk of hampered market access ○ Issued unsecured debt, idem securitisations ○ Covered bonds: incl. asset related risk • Roll-over on adequate terms related to relative price of short/long-term funding (yield curve related risk) • Credit spread long-term funding • Originator and/or sponsor related contingent liabilities due to recourse, performance triggers, collateral calls, and other committed credit enhancement/liquidity facilities to securitisations and conduits/SPVs
	Asset side/cash inflow	• Illiquidity of assets ○ Wholesale market related securitisation risks ▪ (Il)liquidity of ABS, ABCP markets, re-securitisations • Credit-related payment delays • Asset value if not diversified and if dependent on collateralised funding ○ Home price/credit related asset prices ○ Foreclosures: fire sale (auction) home prices
	Gap position	• Inherent large contractual maturity mismatch: often relatively weak cash capital position • Stochastic – general market stress sensitive – securitisation-related effective asset duration, combined with • interest-driven early redemption stochastics,

SME business Model.
The vulnerabilities of the SME business model depend on the concrete funding strategy, which may vary from bank to bank. The quality of assets and the maturity transformation may also vary.

Examples of possible metrics

- Growth of business versus core funding ratio trends.
- Net cash capital.

2. Wholesale business	Refers to	Vulnerabilities

2.1 Large Corporate (LC)/Government		
o Large corporate (LC) loans/deposits o Money market (funds) professional related business o Governments, except small local	Liability side/cash outflow:	• On-demand and short-term wholesale funding: professional money market behaviour stochastics: credit risk/reputation-linked risk of rapid withdrawals • Fixed term deposits, longer term: o Roll-over risk stochastics ▪ Dependent on concentration ▪ High credit risk sensitivity o Correlated/concentrated early withdrawals with penalty during bank-specific stress • Secured funding: o Repo market access impediments, market stress related, and/or idiosyncratic (CCR) o dependent on asset value • Credit lines, underwriting, stand-by facilities o Contractual/irrevocable ▪ Incl project finance related o Non-contractual reputation-linked risk o Corporates: business cycle related usage of credit lines ▪ Upward phase: investment related ▪ Downturn: increasing stock and loss financing
	Asset side/cash inflow:	LC loan specifics: • Part of core business with substantial pressure to roll over (reputation sensitive) • Loans: net cash (in)flows according to maturity schedule after LC client related loan roll-over/reinvestment stochastics: o Unstable during stress
	Gap position	LC loan/deposit gap specifics: • Net cash-flows after loan and deposit roll-over • Money market fund related ABCP funding business: potential gap driven by securitisation stochastics and back up facilities

Examples of possible metrics

- Concentration of short-term wholesale funding

- FX mismatch: see above.
- Secured borrowing capacity
- Ratio of unencumbered liquid assets to uninsured retail deposits and wholesale funding
- Intra-group funding (see above)
- Secured funding: relative size of haircuts applied
- Contingent wholesale funding: amount of undrawn irrevocable commitments
- Geographical concentration of funding

2.2 Commercial mortgages	Refers to	Vulnerabilities
Commercial mortgages o Project Finance	Liability side/cash outflow:	Wholesale funding: • On-demand and short-term wholesale funding: professional money market behaviour stochastics: liquidity/credit risk/reputation-linked risk of rapid withdrawals • Fixed term deposits, longer term: o Roll-over risk stochastics ▪ Dependent on concentration ▪ High credit risk sensitivity o Correlated/concentrated early withdrawals with penalty during bank-specific stress
	Asset side/cash inflow:	• Illiquid, long-term assets • (Il)liquidity of securitisation pipeline • Credit lines: o Contractual committed, irrevocable ▪ Incl project finance covenants sensitivity o Non-contractual, reputation related
	Gap position	o Inherent large maturity mismatch

2.3 Interbank wholesale business	Refers to	Vulnerabilities
o Interbank loans/deposits (excluding central banks and intra-group) o Correspondent bank-ing	Liability side/cash outflow:	Run off scenario: • Idiosyncratic run-off: o On-demand and short-term wholesale funding: professional market stochastics: full and rapid liquidity/credit risk/reputation linked withdrawals and no access to markets o Impeded access to secured

		lending due to repo-related counterparty credit risk • Money and capital market liquidity related decay and shortening of funding terms: o Due to systemic liquidity hoarding o Due to money market shortages o Due to systemic transparency issues • Fixed term: early withdrawal possibility? o market • Credit lines/guarantees/margin/collateral requirements o Contractual/irrevocable o Contingent liabilities ▪ Downgrade trigger related o Non-contractual: less applicable to pure interbank (non-intra-group)
	Asset side/cash inflow:	Interbank loan specifics: • Assumed 100% liquidity value of amounts on demand and instalments to receive
	Gap position	• According to run-off scenario during stress

2.4 Wholesale securitisation business	Refers to	Vulnerabilities
o Securitisations o Re-securiti-sations o Structured products	Liability side/cash outflow	Conduit, SPV, securitisation-related contingent liabilities: • Originator-related performance triggers, buy-backs • Sponsor-related credit enhancements: e.g., CSA-based collateral requirements related to downgrade (SPV/Conduit, CDS) • Sponsor and/or liquidity provider: correlated/concentrated drawings on general market and idiosyncratic (SPV) related liquidity facilities • Non-contractual reputation-related buy-backs (SPVs,SIVs), ABCP support • Inadequate limit structure to the relevant contingent liabilities • Treasury inadequately informed about the nature of structured

		products • Derivatives vulnerabilities used for structured products, e.g. interest rate hedging, credit enhancement and/or funding: see derivatives On balance sheet: • Pipeline funding roll-over • Deposit withdrawals by SPVs/conduits • Funding requirement of buy-backs and ABCP support •
	Asset side/cash inflow:	• Warehousing: securitisation related (il)liquidity horizon of pipeline assets during protracted market stress • Illiquidity of assets bought back from SPVs • Illiquidity of bought/supported ABCP from SPVs/Conduits
	Gap position	• Potential high maturity mismatch due to market driven liquidity squeeze caused by shortening of (available) funding and illiquidity of bought (back) assets

2.5 Wholesale prime brokerage business	Refers to	Vulnerabilities
o Hedge funds o Clearing member of exchange related professional market makers in securities and derivatives	Liability side/cash outflow	• Idiosyncratic stress: o Concentrated deposit withdrawals during idiosyncratic stress o Loss of funding possibility by re-hypothecation of received collateral due to withdrawal of accounts • Market stress: impediments to securities borrowed needed to cover liabilities related with repo- and securities lending/borrowing business
	Asset side/cash inflow:	• Market stress: o Hedge funds: liquid/illiquid ratio of collateral, o Hedge of hedge funds: extremely illiquid collateral, low frequent valuation o Market makers: risk of shortfall of deposits and liquid collateral
	Gap position	• Potential high mismatch due to withdrawal of deposits and collateral

		due to cancelled accounts

2.6 Retail linked wholesale business	Refers to	Vulnerabilities
o Fiduciary funds o Trust funds o "Treuhand" funds	Liability side/cash outflow:	• Stress: on-demand and short-term wholesale funding: professional money market behaviour stochastics: liquidity/credit risk/reputation-linked risk of rapid withdrawals • Fixed term deposits, longer term: o Roll-over risk stochastics ▪ Dependent on concentration ▪ High credit risk sensitivity o Correlated/concentrated early withdrawals with penalty during bank-specific stress
	Asset side/cash inflow:	n/a [?]
	Gap position	n/a

3.Trade Finance	Refers to	Vulnerabilities
o Letters of credit o Acknowledgement o Exchange bills o Documentary credit	Liability side/cash outflow:	o Generally: stable projected cash flows o Possible funding of irregular (pre)finance; drawing on letters of credit
	Asset side/cash inflow:	o Liquidity value of exchange bills o Inter bank claims (CCR)
	Gap position	n/a

4. Custody services	Refers to	Vulnerabilities
o (G)CDS	Liability side/cash outflow:	*If* contractually allowed: Vulnerabilities of re-hypothecation, repo-transactions, and securities lending/borrowing
	Asset side/cash inflow:	If allowed to use customers' assets: (un)encumbrance planning
	Gap position	Possible mismatch in specific securities needed and availability in the securities borrowing/lending market