EUROPEAN CENTRAL BANK

BANKING SUPERVISION

Sensitivity Analysis of Liquidity Risk – Stress Test 2019

Final results

7 October 2019

The assessment of banks' liquidity risk has been one of the SSM supervisory priorities for 2019

- ECB Banking Supervision conducted the **Sensitivity Analysis of Liquidity Risk - Stress Test 2019 (LiST 2019)** to assess banks' ability to withstand **hypothetical idiosyncratic liquidity shocks**

- The **sensitivity analysis was successful,** processes were smooth and the exercise benefitted from good cooperation with all involved banks

- **Liquidity reserves were found to be adequate to counterbalance the simulated net outflows** for the vast majority of banks

- Specific issues relate to individual banks' liquidity constraints in **foreign currencies** and/or **individual subsidiaries outside of the euro area**

- **Several important data quality issues** in regulatory reporting were identified

- Results are being used by the Joint Supervisory Teams in the **2019 Supervisory Review and Evaluation Processes (SREP) assessment** and were discussed with the banks

Overview of topics covered / not covered in this document

- Recap of the **key features** of **the LiST 2019**

- **Aggregate results**

- **Integration** of 2019 stress test results into the **SREP**
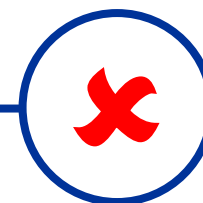
- Discussion of **individual bank performance or implications** of stress test results

- Considerations on the **Eurosystem monetary policy decisions**

Overview

1	**Background**
2	Results
3	Integration into SREP
4	Key takeaways
	Technical annex

The liquidity stress test 2019 was a sensitivity analysis focused on idiosyncratic liquidity shocks

Key features of the methodology

- Focus on **short-term liquidity risk**, which is a **new stress test risk profile** not included in EU-wide stress tests (e.g. EBA 2018), with a number of **deep-dive analyses**

- **Sensitivity analysis** focused on hypothetical **idiosyncratic shocks** calibrated on the basis of supervisory experience from recent liquidity crisis episodes (February 2019 launch document)

- Impact measured in terms of **survival period** by looking at **cash inflows/outflows** and available **counterbalancing capacity**

Included

- ✓ Stressed liquidity outflows lasting for 6 months
- ✓ Deep-dive assessment of 'by currency' and 'intragroup' liquidity flows, as well as the ability to mobilise further collateral beyond what is immediately available
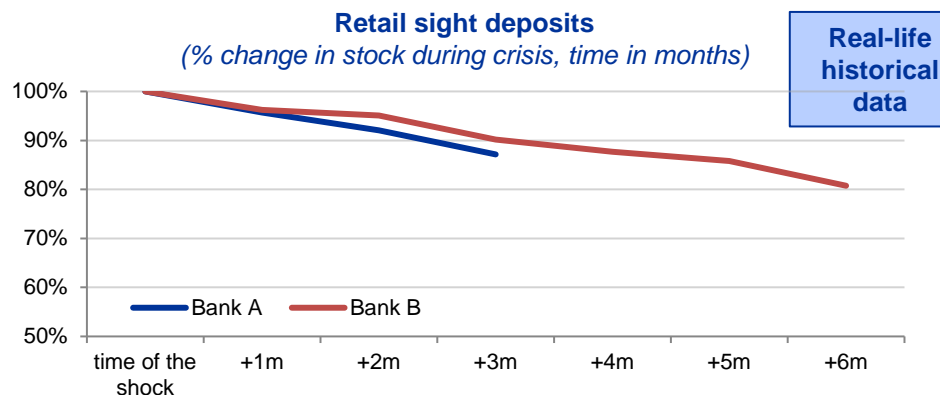- ✓ Impact of bank credit rating downgrade

Excluded

- ✗ Macroeconomic/geopolitical scenarios or market-wide stress simulations
- ✗ Reference to monetary policy decisions
- ✗ Structural (long-term) funding risk
- ✗ Capital/profit & loss implications

The exercise shocks were calibrated based on supervisory experience from recent crisis episodes
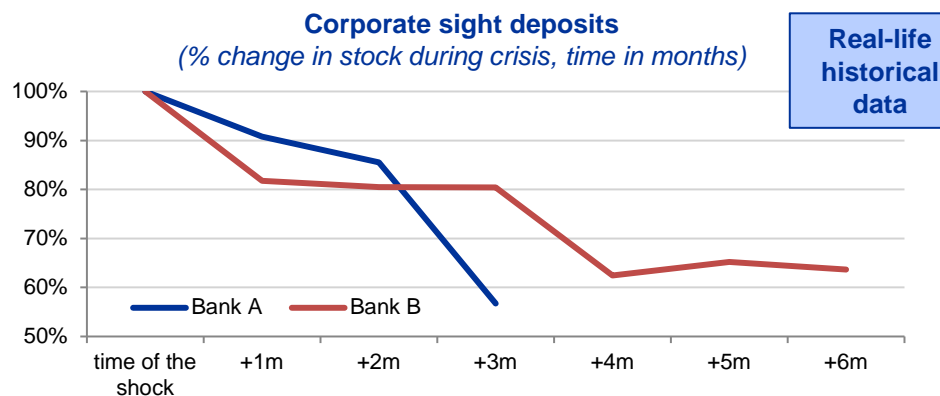
- The ECB analysed the **liquidity dynamics** observed in **recent bank-specific liquidity crises** through multiple sources

- Patterns identified by supervisors informed the **design of the shocks**, including their **length**

- The **severity of shock factors** was calibrated based on **real crisis cases**

- **Deposit outflows** were identified as **one of the main channels** through which **idiosyncratic shocks** may hit banks

Retail deposit outflows can be material …

Retail sight deposits
(% change in stock during crisis, time in months)

Real-life historical data

Bank A   Bank B

… corporate clients are even more reactive

Corporate sight deposits
(% change in stock during crisis, time in months)

Real-life historical data

Bank A   Bank B

Based on the selected shocks banks' liabilities would decrease dramatically

Deposits

Overall depletion fully defined by shocked outflow rates applied on initial stocks

| Stable retail | Other retail | Operational | Non-operational from financial institutions[a] | Non-operational from corporates and others |

Sight

- Stable retail: -12%, -18%
- Other retail: -37%, -42%
- Operational: -48%, -61%
- Non-operational from financial institutions: -100%, -100%
- Non-operational from corporates and others: -58%, -74%

Term

- Stable retail: -12%, -18%
- Other retail: -25%, -31%
- Operational: -32%, -43%
- Non-operational from financial institutions: -48%, -48%
- Non-operational from corporates and others: -34%, -50%

Overall depletion depends both on shocked roll-over rates and maturity profile

Debt securities issued

All securities maturing within 6 months assumed not to be rolled-over

- -16%, -16%

☐ **Adverse shock:** cumulated 6m outflows in % of initial stock

☐ **Extreme shock:** cumulated 6m outflows in % of initial stock

Note: Simple average figures within the full sample.

(a)   Includes non-operational deposits from 'credit institutions' and from 'other financial customers'. Treated as 'wholesale liabilities' in the chart on page 13.

The main outcome metrics were derived from the evolution of a bank's net liquidity position

The '**net liquidity position**' **(NLP)** at a given point in time is equal to the difference of the bank's available liquidity (i.e. its counterbalancing capacity) and the expected net outflows since the reference date

The '**survival period**' **(SP)** corresponds to the first day in which the NLP turns negative (i.e. when a bank would have no further available liquidity to counter the simulated net outflows)

The '**cliff effect**' indicates potential Liquidity Coverage Ratio (LCR) 'optimisation' strategies as it measures the difference between the NLP at day 35 and the NLP at day 30 (scaled by total assets)

- Key maturity ladder output metrics are computed at a **consolidated level**, as well as '**by currency**' and '**intragroup**' for internationally active institutions

- Availability of **additional collateral** and **collateral management** practices assessed by means of ad-hoc 'deep-dive' analyses

The exercise was carried out smoothly but it revealed significant data quality issues

Smooth yet intense process

- **103 banks** involved over the course of **4 months**
- **About 250 FAQs** addressed ahead of the first submissions deadline
- Overall, the **process was smooth**, also thanks to the reliance to the greatest extent possible on **existing supervisory reporting**

Banks were generally able to comply with intense pace of ECB requests in a timely manner

- On average, each bank faced **11 quality assurance (QA) requests**
- **Delays** only affected **less than 1% of the interactions**
- However, some banks needed extended timelines to address ECB questions, as QA interactions revealed significant **room for improvement in data quality**

ECB requests led to improved quality of existing liquidity supervisory reports

- On average, **banks changed 25% of data points** following ECB inquiries
- **Data aggregation issues** relatively **more severe for larger banks**; past exposure to liquidity stress also seems to lead to better data quality
- Several banks **re-stated their regulatory liquidity reports** as a result of the LiST 2019

We thank bank teams involved for their engagement and cooperation

Quality assurance activities ensured comparability of figures reported by banks

Illustrative example of QA workstream – Deposit re-classifications enforcing LCR rules

'4-step' sequential approach to challenge figures reported by banks:

1. **Consistency with other regulatory information sources** (e.g. LCR reporting)

2. **Compliance with the** shock factors prescribed by the LiST 2019 **methodology**

3. **Benchmarking of deposit-related LCR figures** to assess consistency over time

4. **Ad-hoc queries on amounts** and **counterparty** types of largest deposits to assess compliance with regulatory criteria (LCR Delegated Regulation)

   – 'Stable' vs. 'Other' retail deposits (only insured deposits qualify as stable) – Art. 24 and 25

   – Definition of 'Retail' deposits (thresholds for deposits to qualify as retail) – Art. 3(8)

   – 'Operational' vs. 'Non-operational' deposits – Art. 27

Several institutions re-classified some of their deposits, which reduced their net liquidity position and their LCR figures

The ECB will follow up on the data quality issues affecting regulatory reporting
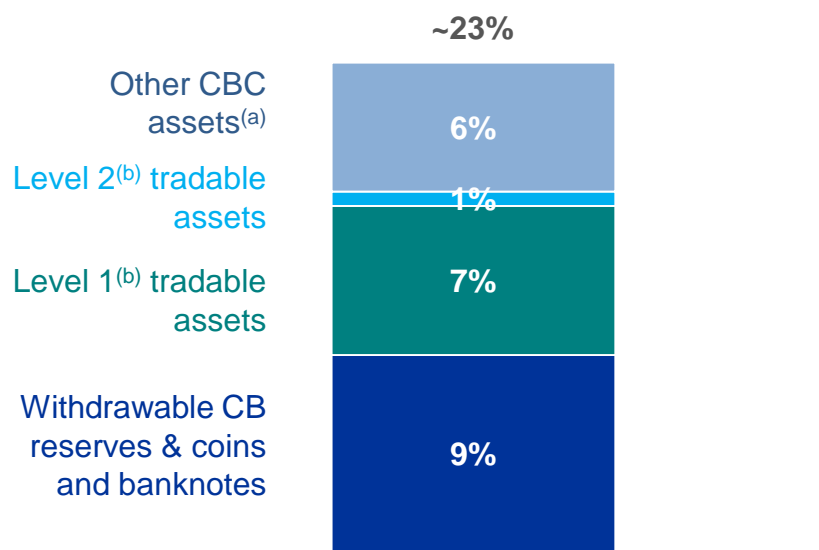
Overview

Most banks have ample liquidity buffers on their balance sheets

Composition of the initial stock of counterbalancing capacity (CBC) in % of total assets

~23%

Other CBC assets[a] — 6%

Level 2[b] tradable assets — 1%

Level 1[b] tradable assets — 7%

Withdrawable CB reserves & coins and banknotes — 9%

Note: Simple average within the full sample. 'Liquidity value' (i.e. post haircut) components of the CBC shown in % of total assets. Weighted average figure by total assets: ~20%.
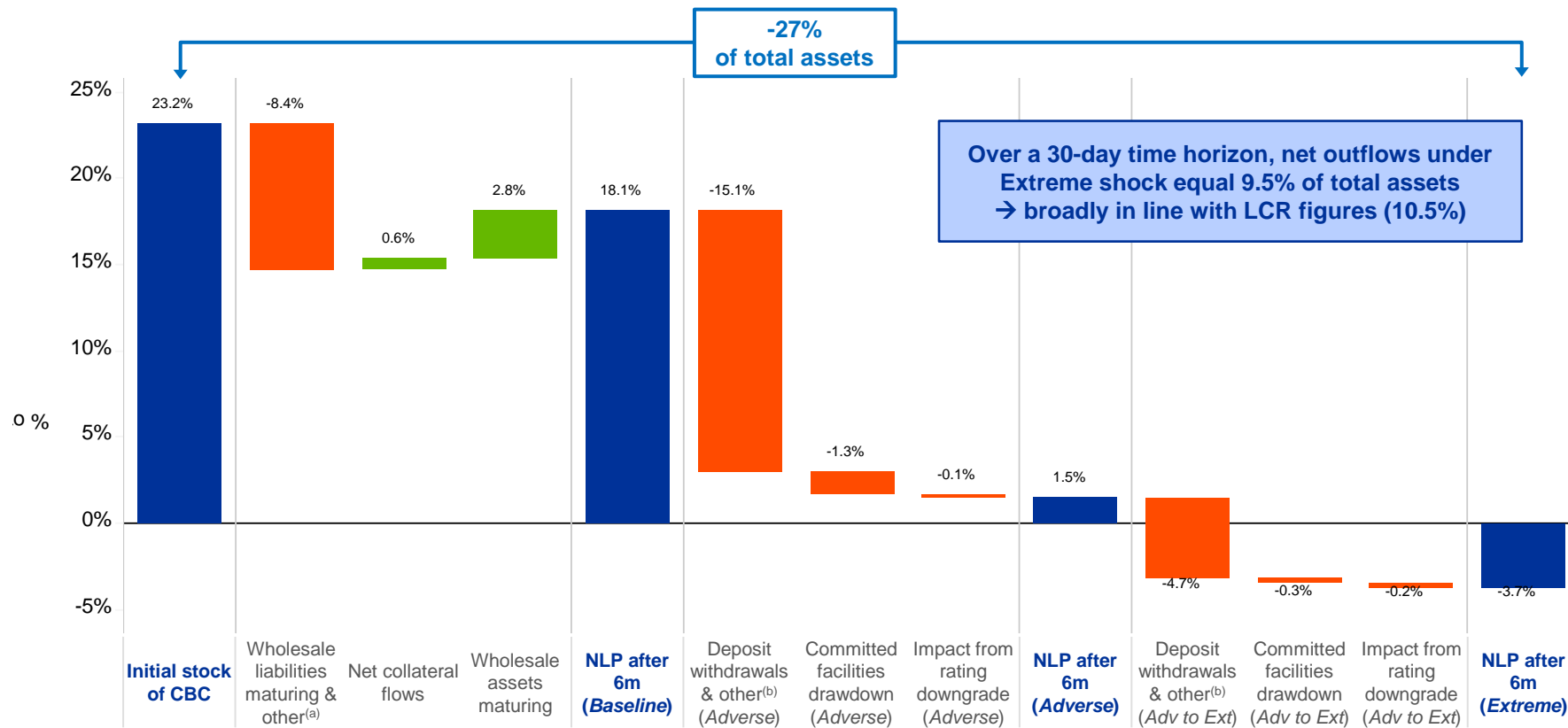*(a) Includes: other tradable assets, non-tradable assets eligible for central banks and undrawn committed facilities received.*
(b) Level 1 and Level 2 categories refer to the Liquidity Coverage Ratio classification of High Quality Liquid Assets (HQLAs). The categories are not related to the IFRS Fair Value hierarchy.

- The average sample bank's initial stock of **counterbalancing capacity is 23% of total assets**

  ➢ Withdrawable central bank reserves and Level 1 tradable assets account for the majority of the collateral buffer

- Within the sample, **collateral management strategies differ**

  ➢ Smaller banks mostly adopt a 'buy-and-hold' strategy for their collateral buffers

  ➢ Larger banks report a much more active collateral management as they engage in repo trading and other types of securities financing transactions

Overall outflows equaled to approximately 27% of total assets under the Extreme shock

Bridge between net liquidity position starting point Baseline to net liquidity position 6-month Extreme

Over a 30-day time horizon, net outflows under Extreme shock equal 9.5% of total assets
→ broadly in line with LCR figures (10.5%)

Note: Simple average within the full sample. The sum of individual bars may not perfectly match due to rounding.
(a)   Includes items marked as 'other' inflows / outflows in the LiST 2019 Template.
(b)   Includes variations in the stock of counterbalancing capacity mostly due to deposit withdrawals (e.g. lower minimum reserve requirements).

# 90% of banks report a survival period longer than 2 months, even under the Extreme shock

Distribution of banks with a survival period <6m
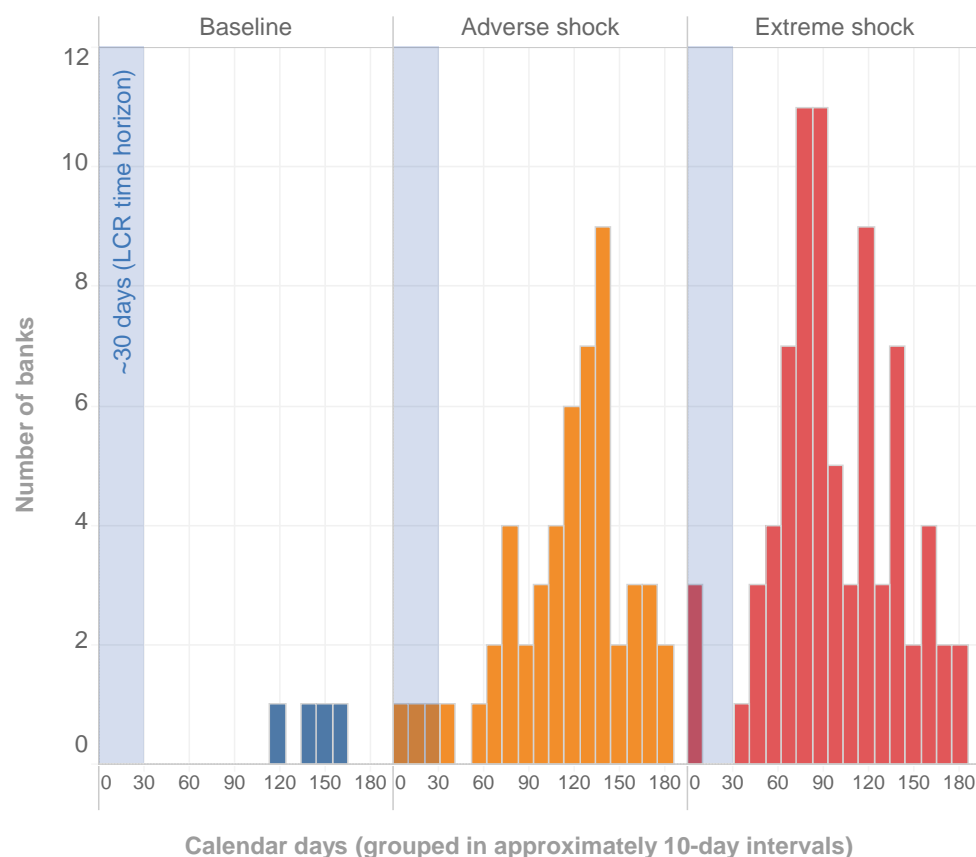
> ➢ **4 banks** from different jurisdictions and business models report a **survival period** shorter than the exercise time-horizon of **6 months** in the **Baseline** (which includes a freeze in wholesale markets)

> ➢ **Only 11 banks** report a **survival period** shorter than **2 months** under the **Extreme shock**

The median survival period would be about 6 months under the Adverse shock and 4 months under the Extreme

## Median NLP in % of total assets
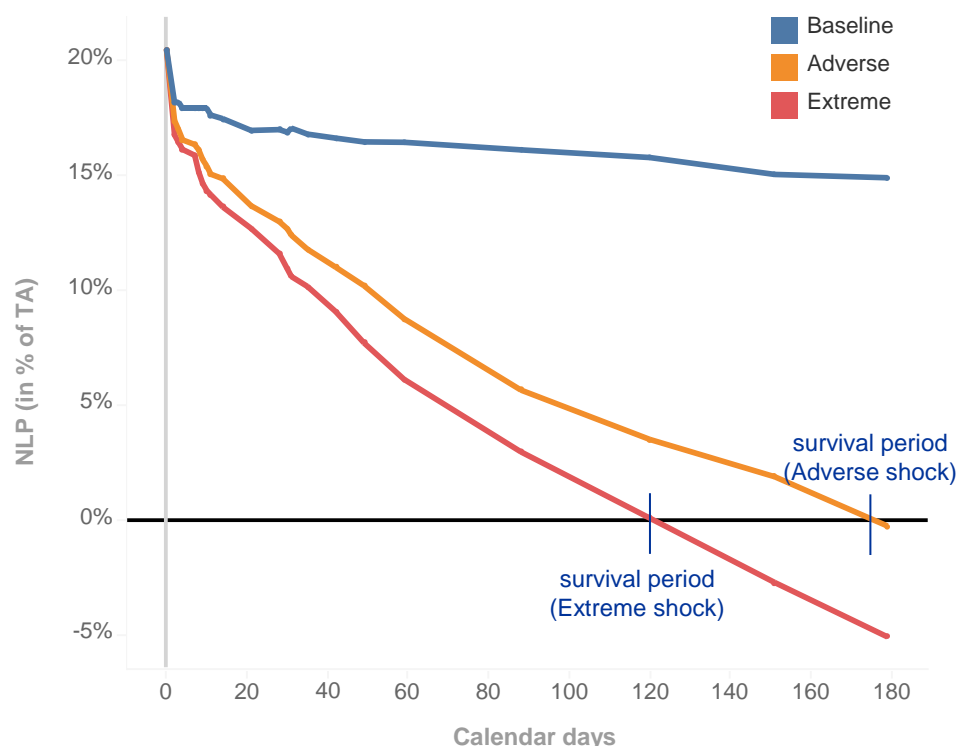
Note: NLP lines reflect linear interpolation of values reported in the template's maturity buckets.
(a)   Banks reported the exact dates (among all calendar days except those when TARGET2 was closed. i.e. the LiST 2019-relevant days) corresponding to the survival periods in the 3 scenarios. In case the sample median did not correspond to a relevant day (e.g. in case it fell on a weekend day), the next relevant day would be shown.

- **Median survival period as reported by banks[a]** (full sample):

  - **Baseline: > 6 months**

  - **Adverse shock: 176 days** (51 banks report a survival period longer than 6 months)

  - **Extreme shock: 122 days** (26 banks report a survival period longer than 6 months)

Universal banks and G-SIBs report the highest sensitivity to LiST 2019 shocks

Median NLP in % of total assets by business model
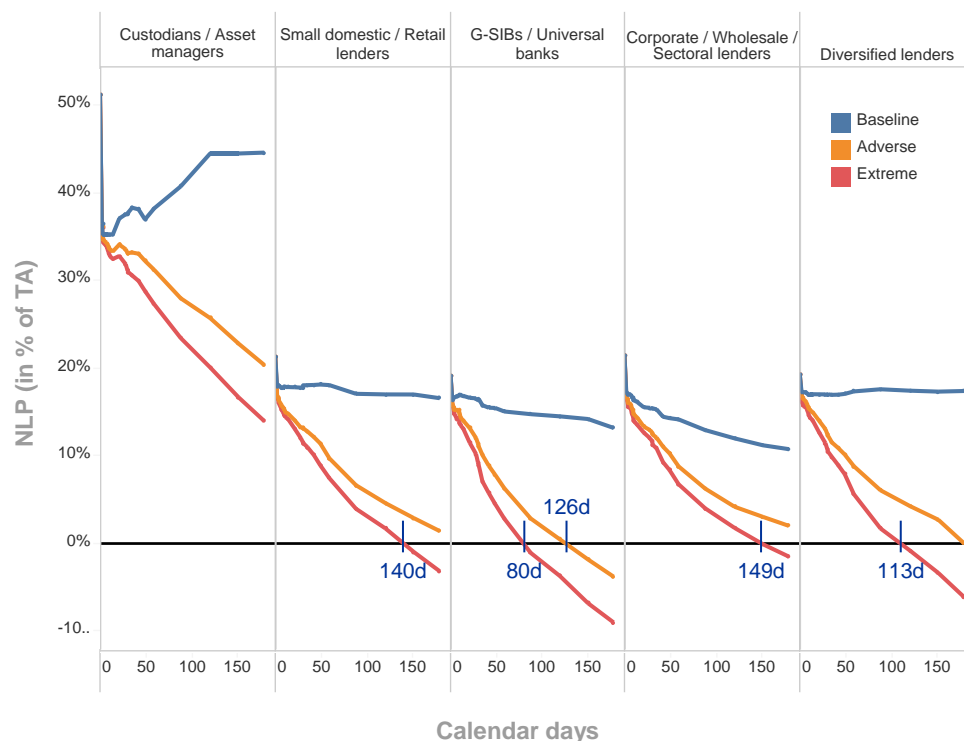
*Note: Banks were grouped into **5 high–level business models** to report on key differences in the results. The SSM employs a more granular breakdown in its assessment.*
Reported median survival periods have been calculated based on exact dates reported by banks. NLP lines reflect linear interpolation instead (see previous page).

- **Differences are mostly driven by the funding mix** (see technical annex)

  ➢ **Universal banks** and **G-SIBs** are in general hit the hardest by the LiST 2019 shocks, owing to a higher reliance on less stable deposit types and wholesale funding

  ➢ **Retail banks** and other lenders are relatively less affected, largely thanks to a higher reliance on more stable deposits

  ➢ **Custodian banks**' peculiar pattern is affected by the availability of large amounts of liquid assets, which is inherent in their business model

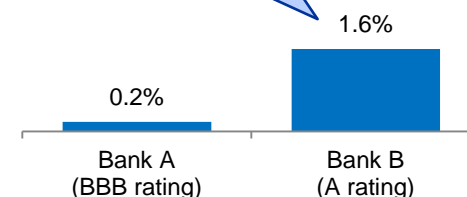# Some banks may underestimate the impact triggered by a rating downgrade

- Overall, expected **net outflows** triggered by a potential rating downgrade **look somehow low**

  - Figures are heterogeneous within the sample

- The negative impact exhibits an **inverse relationship with a bank's starting rating**

  - In principle, highly rated banks may be shielded from the adverse consequences of a downgrade

- **Lack of awareness by banks** may help explain the small scale of reported outflow figures

  - Banks with recent downgrade experience tend to report a higher impact than peers

  - Less than 30% of banks map rating-dependent contractual agreements in their IT systems

Net outflows caused by a 3-notch rating downgrade in % of total assets

Average

Median

AA- and above | A+ to A- | BBB+ to BBB- | BB+ and below
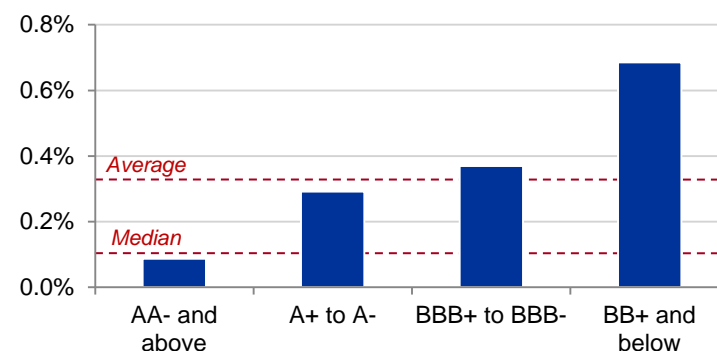
Bank B experienced a downgrade in recent years

Example of two peers

1.6%

0.2%

Bank A (BBB rating) | Bank B (A rating)

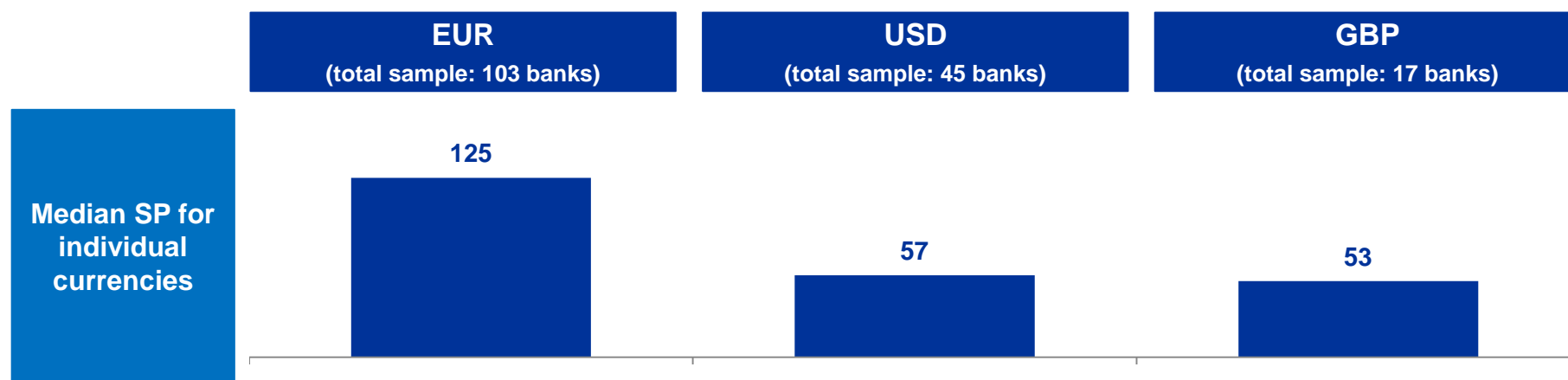*Note: Impact of a 3-notch downgrade (**Extreme shock**) over 6 months. Positive figures in the charts represent negative net outflows.*

Follow-up analyses for banks most exposed will take place in the coming months

Survival periods in foreign currencies are generally shorter than euro ones

EUR (total sample: 103 banks)	USD (total sample: 45 banks)	GBP (total sample: 17 banks)

Median SP for individual currencies

EUR: 125
USD: 57
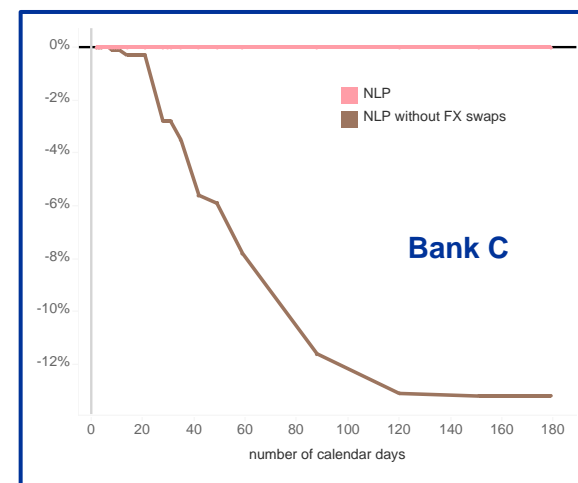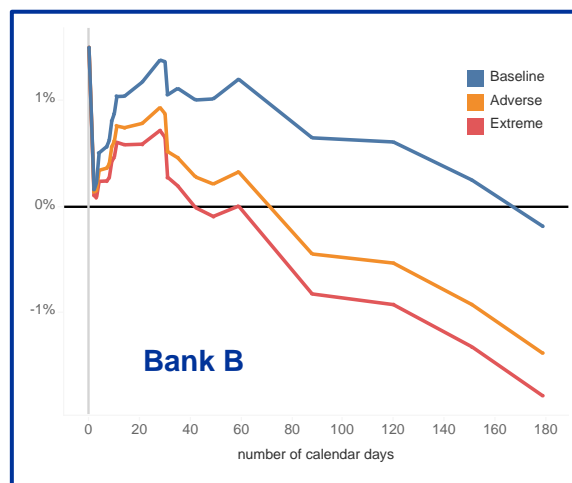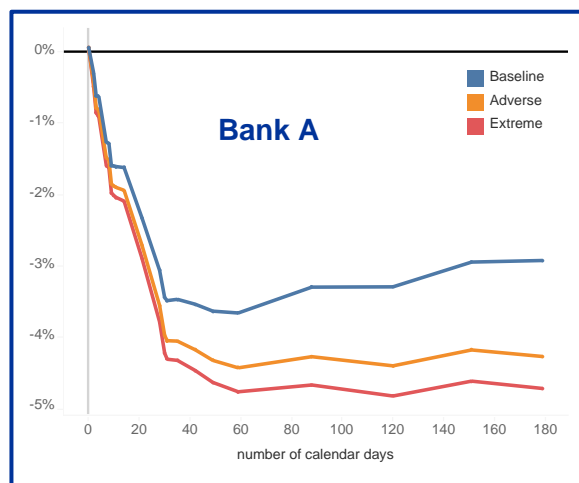GBP: 53

*Note: Survival periods under the **Extreme shock** assumptions reported in number of calendar days.*

- **Several institutions report a negative USD/GBP NLP within 30 calendar days**

- Furthermore, several banks exhibit **'low points' over the course of the exercise time horizon,** i.e. they have some short term liquidity outflows which are compensated by inflows in the medium term

Liquidity positions in USD exhibit different patterns reflecting different banks' strategies

Evolution of the net liquidity position in USD: 3 case studies

Bank A

Baseline
Adverse
Extreme

number of calendar days

Bank B

Baseline
Adverse
Extreme

number of calendar days

Bank C

NLP
NLP without FX swaps

number of calendar days

➢ **Bank A has USD wholesale short term liabilities** with limited USD liquidity buffer (USD commercial loans' inflows do not enter LiST survival period calculation)

➢ **Bank B exhibits a volatile profile of USD liquidity** with 'lows' and 'highs' due to mismatches between inflows and outflows (e.g. FX swaps hedging commercial flows)

➢ **Bank C systematically hedges its significant USD liabilities with FX swaps**, but it has no USD denominated buffer

Note: By-currency NLP scaled by consolidated total assets.

Banks' euro area components exhibit longer survival periods than their non-euro area subsidiaries

Euro area subgroups (total sample: 30)	Extra-euro area subgroups (total sample: 49[a])
*EA subgroups include the **most relevant subsidiaries domiciled within the euro area** (30 banks reported 1 euro area subgroup each)*	*Extra-EA subgroups include the **most relevant subsidiaries domiciled outside of the euro area** (banks reported up to 3 extra-EA subgroups each, defined by JSTs according to banking groups' geographic footprint)*

Median survival period for individual subgroups

99

74

*Note: Survival periods under the **Extreme shock** scenario assumptions reported in number of calendar days.*
(a)   At least one extra-EA subgroup reported by 30 banks, with 12 banks reporting two and 7 banks reporting three

- **Extra-euro area subgroups report shorter survival periods**, as i) liquidity buffers held by subsidiaries outside of the euro area are slimmer and ii) reliance on short term wholesale funding (including intragroup flows) is higher

In most cases, banks' euro area components are net providers of liquidity to their non-euro area subsidiaries

Net intragroup cash flows for the EA subgroups (in % of total assets)

Net cash inflows

Net cash outflows

20%
15%
10%
5%
0%
-5%
-10%
-15%
-20%

Net providers of liquidity to extra euro area group entities

Balanced intragroup flows to/from the EA

Net receivers of liquidity from extra euro area group entities
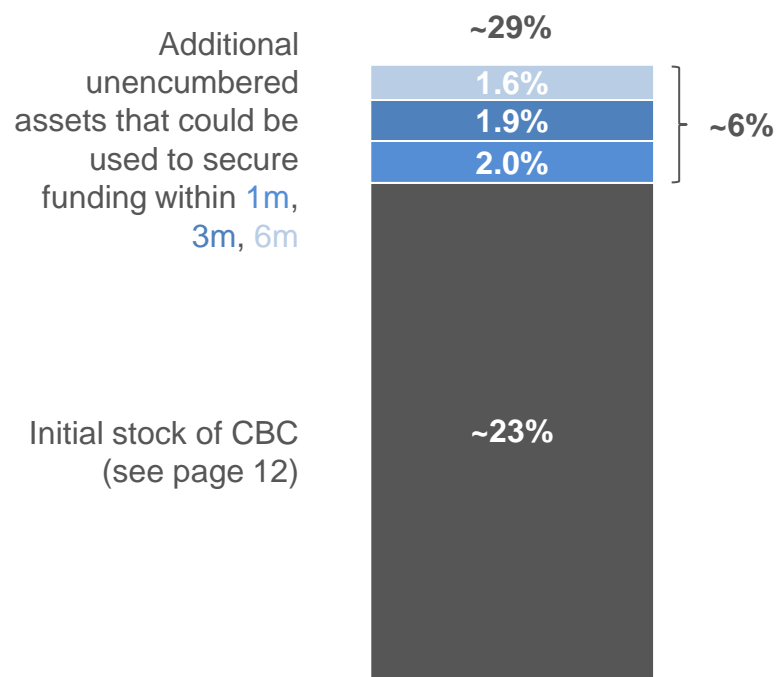
30 euro area subgroups
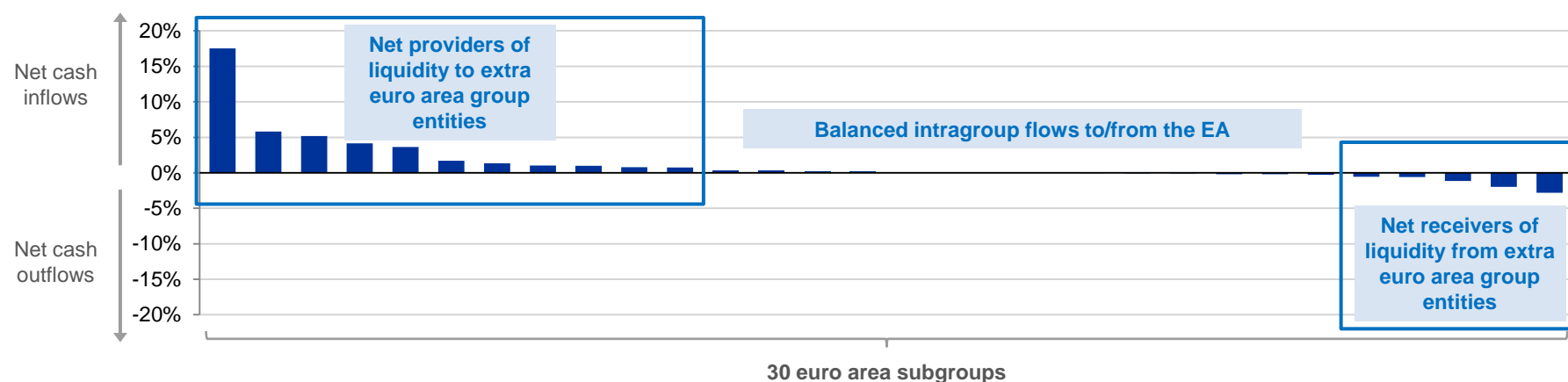
*Note: Intragroup flows (both inflows from and outflows to other non-euro area group entities, from the perspective of the EA subgroup) including both open and contractual maturity items, under the **Baseline** assumptions, cumulated over 6 months. Total assets used in ratios are always the consolidated ones.*

- **Euro area subgroups** are more frequently **net providers of intragroup liquidity**, i.e. they fund the group and entities outside the euro area

  - For some banks this is the result of deliberate investment choices (e.g. carry trades), in other cases these flows seem nested within banks' business models (e.g. funding to capital markets operations)

  - In principle, unbalanced liquidity group structures are more exposed to ring fencing risk

Banks have additional capacity to mobilise collateral on top of the initial stock
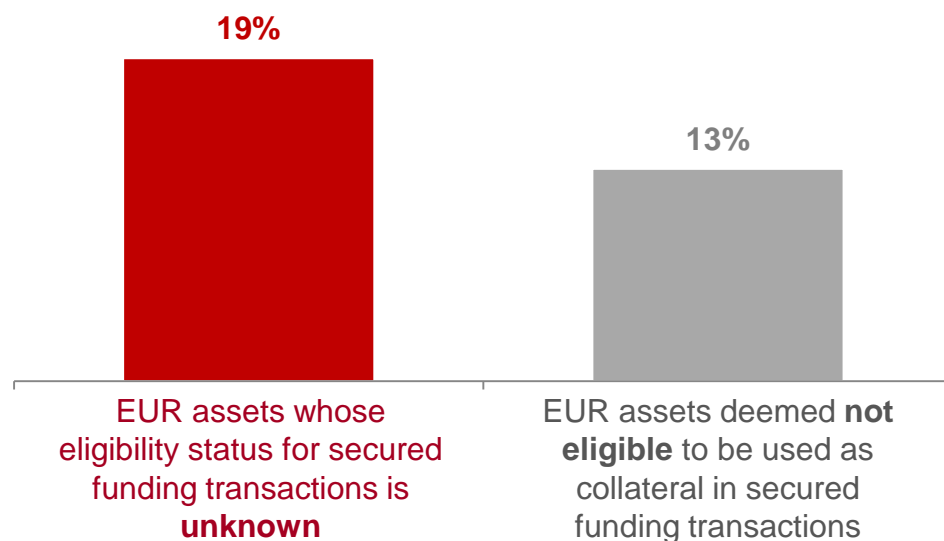
Additional 'mobilisable' collateral in % of total assets

Additional unencumbered assets that could be used to secure funding within 1m, 3m, 6m

~29%

1.6%
1.9%
2.0%

~6%

Initial stock of CBC (see page 12)

~23%

- **Additional collateral** could be generated out of **unencumbered non-tradable assets**

  - The sample average is about 6% of total assets within 6 months (+25%)

  - The average expected haircut of the 'to-be-mobilised' collateral is 37%

- However, there is significant **heterogeneity within the sample**, due to both the difference in encumbrance levels and the low awareness at some banks

*Note: Simple average within the full sample. '**Liquidity value**' (i.e. post haircut) components of the CBC and **EUR denominated 'additional collateral'** shown in % of total assets.*

Some banks should improve their awareness over the availability of 'to-be-mobilised' collateral

EUR assets with 'No' / 'Unknown' collateral eligibility (scaled by total assets)

19%

13%

EUR assets whose eligibility status for secured funding transactions is **unknown**

EUR assets deemed **not eligible** to be used as collateral in secured funding transactions

Note: Simple average within the full sample. Non-tradable/tradable assets reported at their outstanding nominal value/market value as of the reference date. If scaled down by total EUR denominated assets only, the ratios would increase to 22% ('eligibility unknown') and 16% ('not eligible').

- Banks report a **relatively high amount** of unencumbered EUR assets (c.19% of total assets) whose **eligibility to be mobilised into additional collateral is 'unknown'**

  ➢ 37 banks (out of 103) report assets whose eligibility status for secured funding transactions is 'unknown' greater than 20% of total assets

- **Results are heterogeneous within the sample**

Banks exhibiting high proportion of assets with unknown eligibility will be engaged by JSTs to improve their 'mobilisation' capacity

Some banks report cliff effects right after the LCR time horizon

Banks reporting a cliff effect larger than 0.5% of total assets
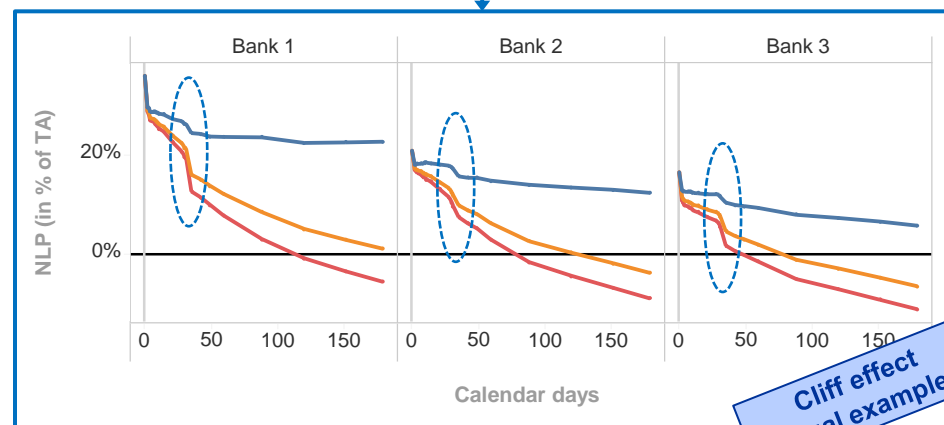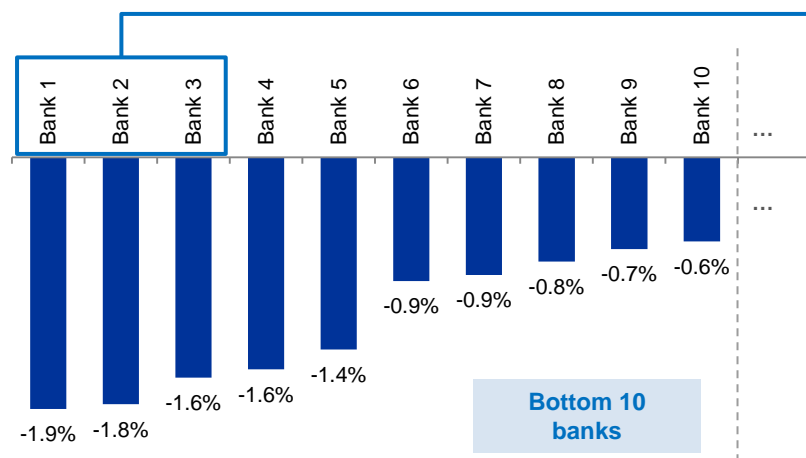
Note: The cliff effect is the difference between the NLP at day 35 and at day 30, scaled by total consolidated assets. A negative value implies a drop in the net liquidity position.

- A number of banks report a **pronounced liquidity drop after day 30** which may result from **Liquidity Coverage Ratio (LCR) 'optimisation' strategies**. Main drivers include:

  ➢ Collateral swaps aimed at improving the quantity/quality of the LCR buffer

  ➢ Term deposits/securities maturing or having a notice period just beyond the LCR time horizon

Collateral swaps aimed at optimising LCR profiles are a source of interconnectedness among banks

Bank A

Bank B

Both legs constituted of retained own issuance

One leg constituted of retained own issuance

Bank D retained securities € 0.3bn & Gov. bonds € 0.5bn

€ 0.8bn

€ 0.3bn

€ 0.5bn

€ 0.7bn

€ 1.1bn

€0.4bn

Bank C   Bank D   Bank E   € 0.8bn   Bank F

Gov. bonds €1.2bn

€ 1bn

Gov. bonds € 1bn

€ 0.5bn

€ 0.7bn

€ 0.5bn

Bank G

Gov. bonds € 0.5bn

Bank H   Bank I   Bank J

€ 0.5bn
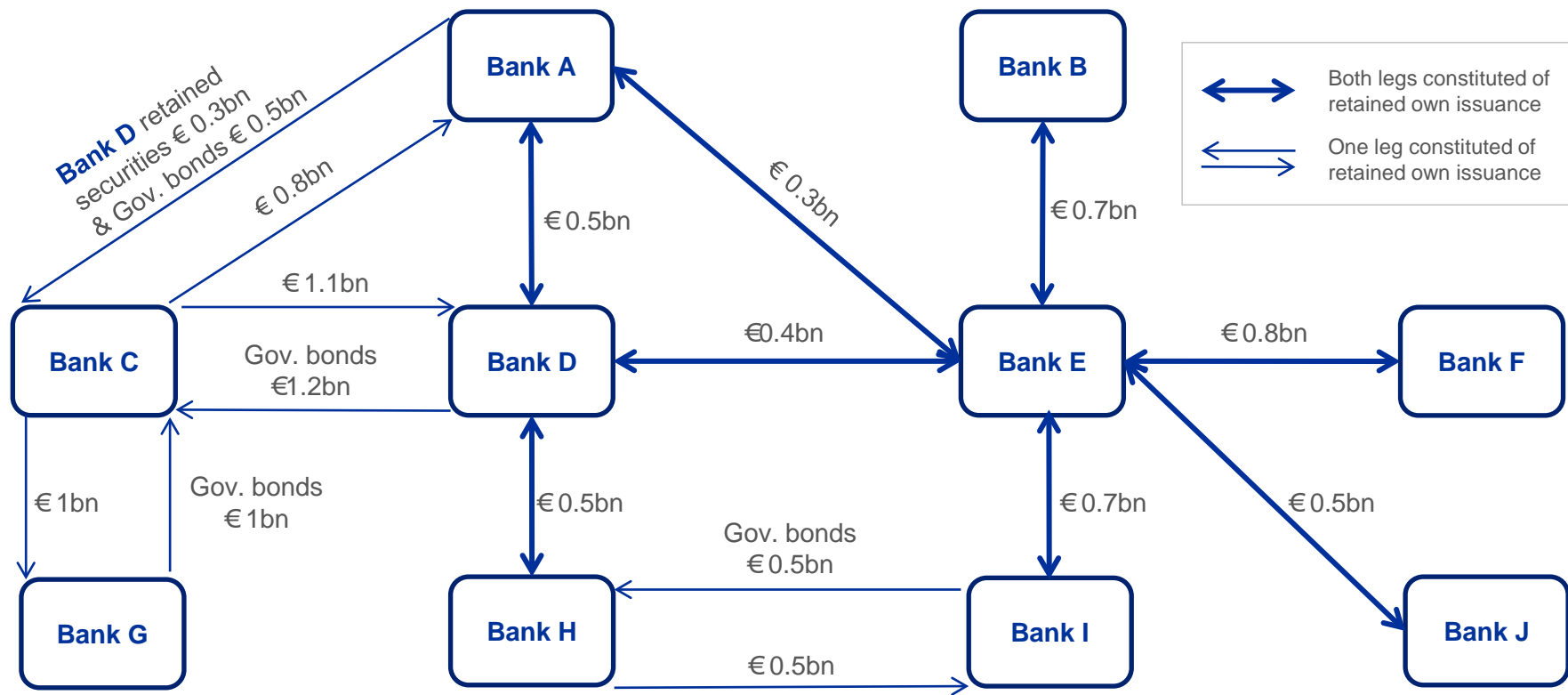
*Note: **Non-exhaustive example** based on information gathered through the QA phase of the exercise, as well as from internal ECB data used as a cross-check.*

Banks exchange retained securities (e.g. covered bonds) possibly to prop-up LCR eligible collateral: these shall be subject to supervisory follow-up activities

Overview

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The results of the sensitivity analysis have contributed to the overall SREP

- Guiding principle: LiST results will have **no direct impact on capital requirements**

- Two main outcome metrics of the LiST, **survival period** and **cliff effect**, had an **impact on the Liquidity Adequacy Score** of the institutions

Liquidity adequacy score
(x-axis: bank score)

78 banks

4 banks   16 banks   5 banks

1   2   3   4

- **Qualitative information** (data availability & quality, timeliness of submission) informed the SREP assessment of the institutions' governance

- JSTs followed a **common methodological approach** regarding the integration of the LiST into SREP, including guidance on quantitative and qualitative **liquidity measures**

- Based on the **results of the SREP Liquidity Adequacy assessment,** JSTs assessed the **materiality** of **LiST risk drivers and** addressed issues with appropriate **quantitative** and **qualitative liquidity measures**[a]
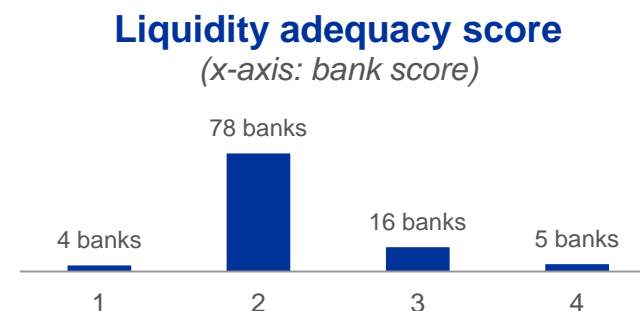
LIST strengthened the Liquidity Risk assessment in the 2019 SREP

(a)   E.g. requests to reinforce internal liquidity stress test processes to cover certain aspects or liquidity risk not adequately captured so far; requests to include in the next ILAAP an assessment of the risk appetite towards products that generate cliff effect risks.

Overview

Key takeaways of the exercise

➡️ Overall focused exercise with **smooth processes** and banks delivering on time

➡️ The LiST 2019 triggered **improvements in the data quality of associated regulatory reporting**, as several issues were identified in the context of quality assurance activities

➡️ **Banks reported an overall comfortable liquidity position**, as long survival periods would buy time for banks to deploy contingency funding plans

➡️ Yet specific frictions were detected in relation to **foreign currencies** and in relation to **individual bank subsidiaries**

➡️ Other points of attention are related to **banks' awareness** over **impact of rating downgrades** and **collateral mobilisation processes**

➡️ Incentives provided to banks by the Liquidity Coverage Ratio make them sounder, yet **it is important to complement the LCR Pillar 1 view** in the assessment of liquidity risk

➡️ Results are being used by Joint Supervisory Teams in the **2019 SREP**, amongst other factors, to **adjust the Liquidity Adequacy Score**

Follow-up activities will be led by individual JSTs in the coming months

Overview

The LiST 2019 revolved around a core exercise, complemented by ad-hoc deep-dives

	Baseline	Adverse shock	Extreme shock	Business view
✔ Submission of template ✘ No submission of template				*Not impacting SREP outcome and as such not included in this presentation*
'Core exercise' (fully consolidated)	✔ Consolidated maturity ladder	✔ Consolidated maturity ladder	✔ Consolidated maturity ladder	✔ Consolidated maturity ladder
'Deep dives' — **FX**	✔ Single CCY maturity ladder	✔ Single CCY maturity ladder	✔ Single CCY maturity ladder	✘
Intragroup (sub-consolidated)	✔ EA Subgroup maturity ladder ✔ Ex-EA Subgroups maturity ladders	✔ EA Subgroup maturity ladder ✔ Ex-EA Subgroups maturity ladders	✔ EA Subgroup maturity ladder ✔ Ex-EA Subgroups maturity ladders	✘
Collateral mobilisation	✔ Ad-hoc reporting template	✘	✘	✘

Overview of scenario assumptions for the key balance sheet items

		Baseline	Adverse shock	Extreme shock	Business view
1 **Contractual maturity items**	Securities issued & secured market funding	**100%** outflow rate	**100%** outflow rate	**100%** outflow rate	**Based on banks' own business plans and assumptions**
	Secured market lending	**100%** outflow rate	**100%** outflow rate	**100%** outflow rate	
	Term deposits (commercial counterparties)	**Constant stock**	**18%-52%** outflow rate[a]	**27%-76%** outflow rate[a]	
	Term deposits (financial counterparties)	**100%** outflow rate	**100%** outflow rate	**100%** outflow rate	
	Derivatives & FX swaps (inflow/outflow)	**100%** in/outflow rate	**100%** in/outflow rate	**100%** in/outflow rate	
	Loans (commercial counterparties)	**Constant stock**	**Constant stock**	**Constant stock**	
	Loans (financial counterparties)	**100%** inflow rate	**100%** inflow rate	**100%** inflow rate	
	Own portfolio investments	**100%** inflow rate	**100%** inflow rate	**100%** inflow rate	
	Others (inflow/outflow)	**100%** in/outflow rate	**100%** in/outflow rate	**100%** in/outflow rate	
2 **Open maturity items**	Sight deposits (commercial clients)	**Constant stock**	**12%-58%** outflow[a]	**18%-74%** outflow[a]	
	Sight deposits (financial counterparties)	**100%** outflow	**100%** outflow	**100%** outflow	
	Sight loans	**Constant stock**	**Constant stock**	**Constant stock**	
	Open repos & reverse repos	**100%** in/outflow	**100%** in/outflow	**100%** in/outflow	
3 **CBC**	Coins banknotes and CB reserves	**Nominal** value	**Nominal** value	**Nominal** value	
	HQLA (L1 & L2) and non tradable assets eligible for CB	**Post-haircut** value	**Post-haircut** value	**Post-haircut** value	
	Other tradable assets	**Post-haircut** value	**Post-haircut** value	**Post-haircut** value	
	Undrawn committed facilities received	**Nominal** value	**Nominal** value	**Nominal** value	
4 **Contingencies**	Outflows from committed facilities	Not relevant **(excl. from NLP)**	**12%/60%** outflow rate[b]	**15%/75%** outflow rate[b]	
	Impact from own rating downgrade		**1-notch ↓**	**3-notch ↓**	
	Net liquidity position computed as:	①+②+③	①+②+③+④	①+②+③+④	①+②+③+④

'Constant stock' implies no liquidity inflow from these loans

Haircuts based on current monetary policy frameworks
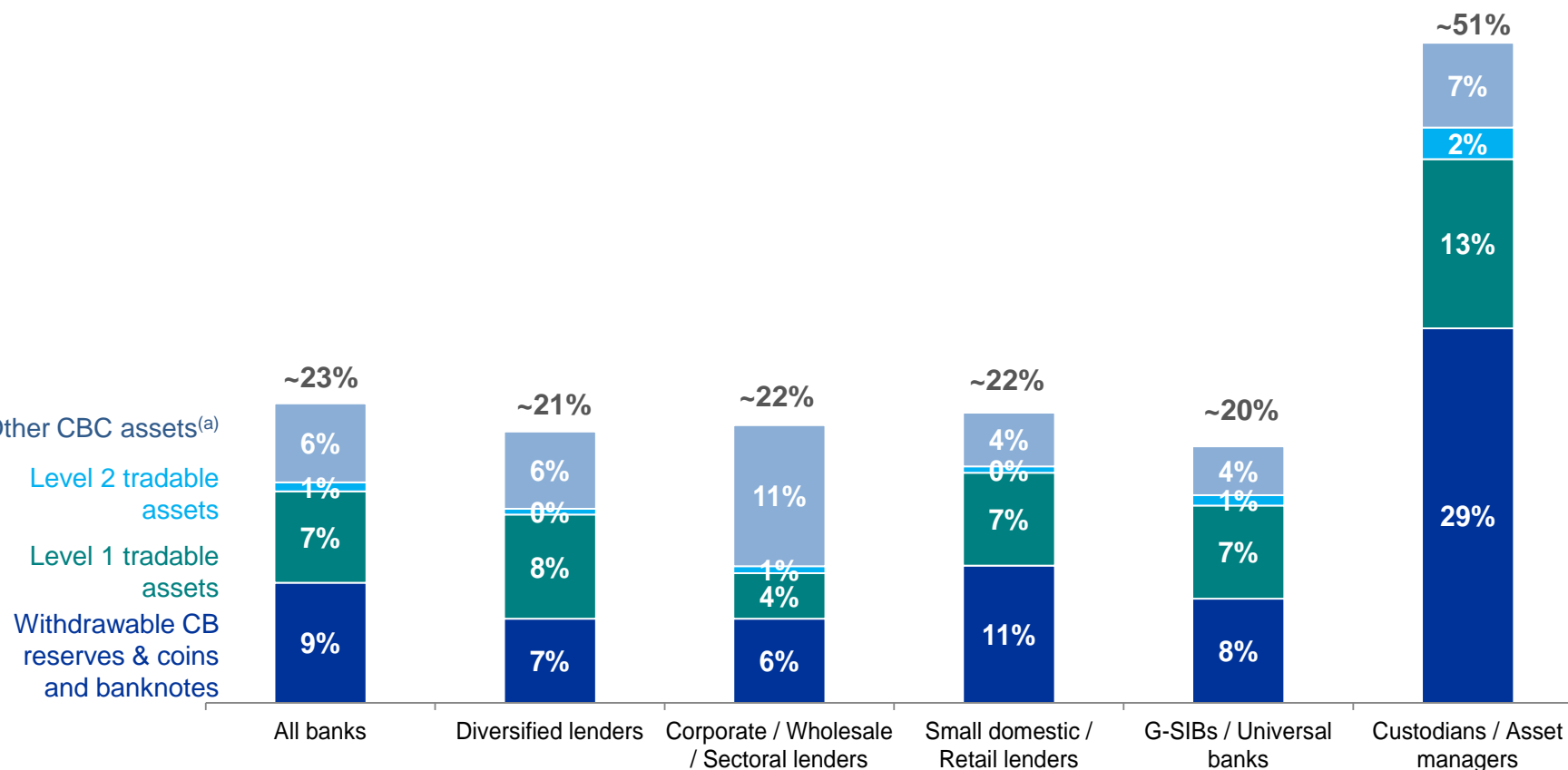
(a) Outflow rates relate to particular types of deposits which are assumed to differ in terms of stability. Lowest outflow rates are attributed to 'stable deposits', whereas the highest outflow rates relate to 'deposits from non-financial corporates'.
(b) The lower rate shall be applied to committed credit facilities whereas the higher rates apply to committed liquidity facilities.

Breakdown of the initial stock of counterbalancing capacity (CBC) by business model

Composition of the initial stock of counterbalancing capacity (CBC) in % of total assets


Other CBC assets[a]
Level 2 tradable assets
Level 1 tradable assets
Withdrawable CB reserves & coins and banknotes

	All banks	Diversified lenders	Corporate / Wholesale / Sectoral lenders	Small domestic / Retail lenders	G-SIBs / Universal banks	Custodians / Asset managers
Total	~23%	~21%	~22%	~22%	~20%	~51%
Other CBC assets	6%	6%	11%	4%	4%	7%
Level 2 tradable assets	1%	0%	1%	0%	1%	2%
Level 1 tradable assets	7%	8%	4%	7%	7%	13%
Withdrawable CB reserves & coins and banknotes	9%	7%	6%	11%	8%	29%

*Note: '**Liquidity value**' (i.e. post haircut) components of the CBC shown in % of total assets.*
(a)   Includes: other tradable assets, non-tradable assets eligible for central banks and undrawn committed facilities received

# Composition of funding sources. Distribution by business model

Breakdown of funding sources by business model
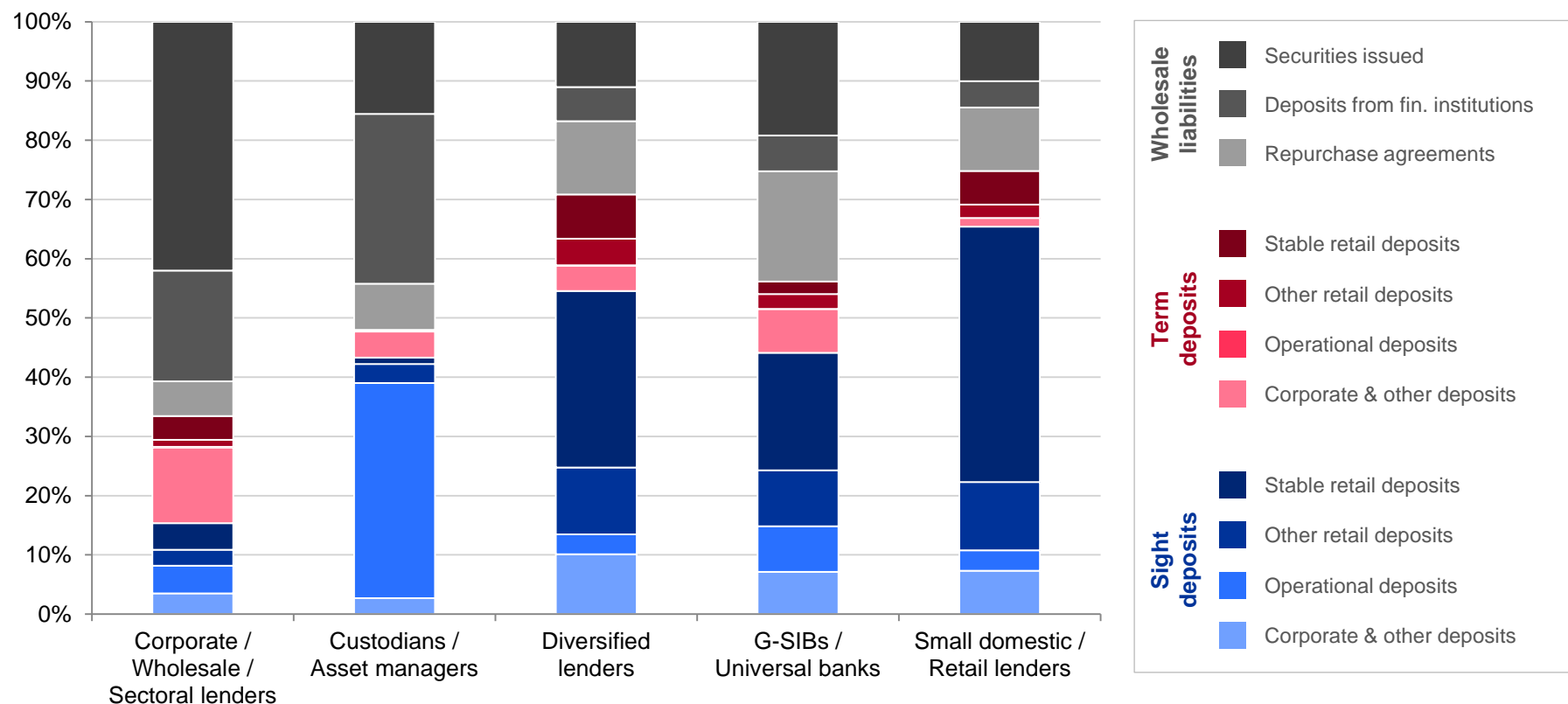
Note: Each bar represents the breakdown of on-balance sheet liabilities other than equity, short trading positions and derivatives under the breakdown used in the LiST 2019 Template.

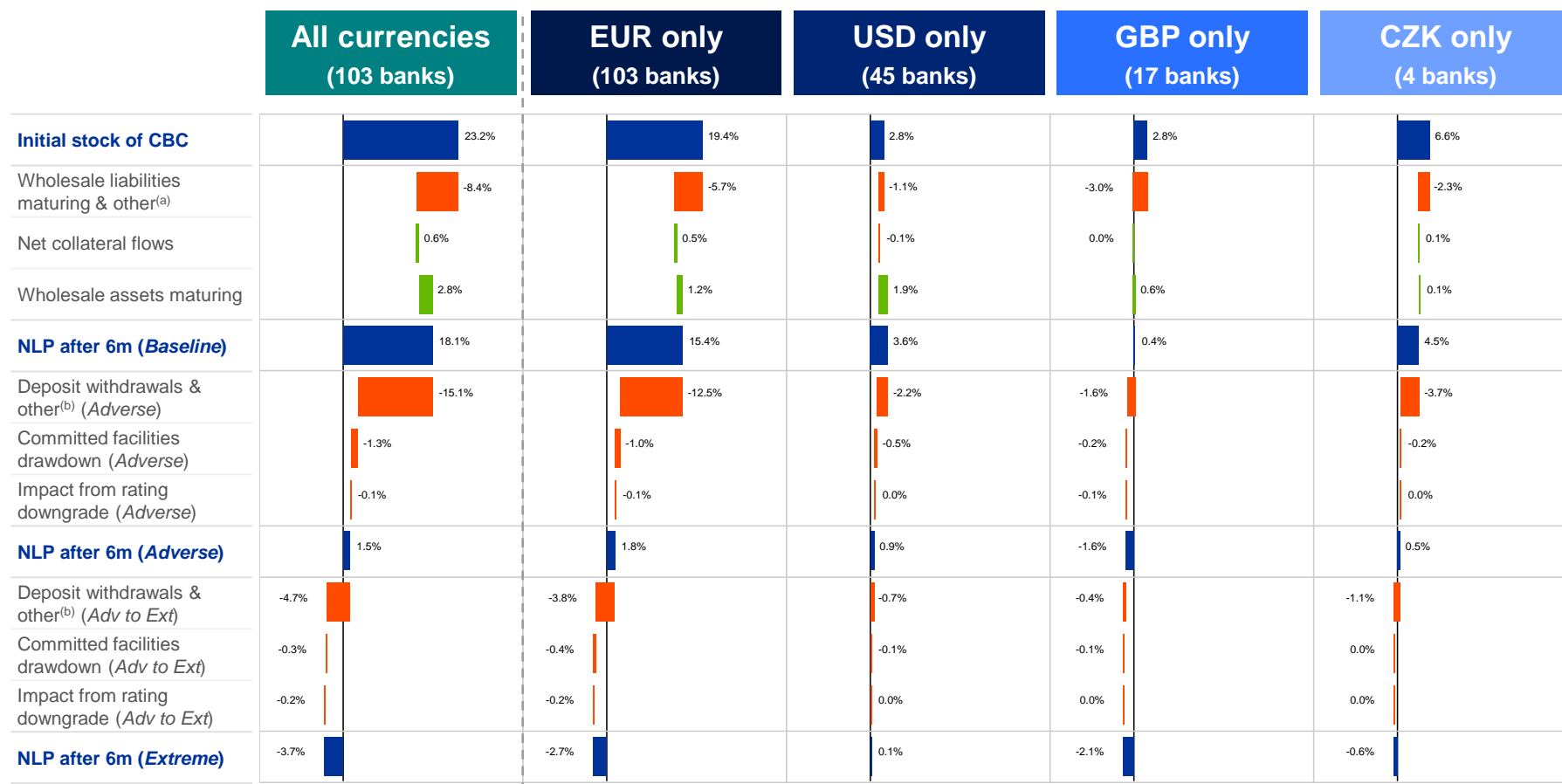# Overall liquidity impact of LiST 2019 shocks. Distribution by business model

Overall liquidity outflows[a] in % of total assets by business model
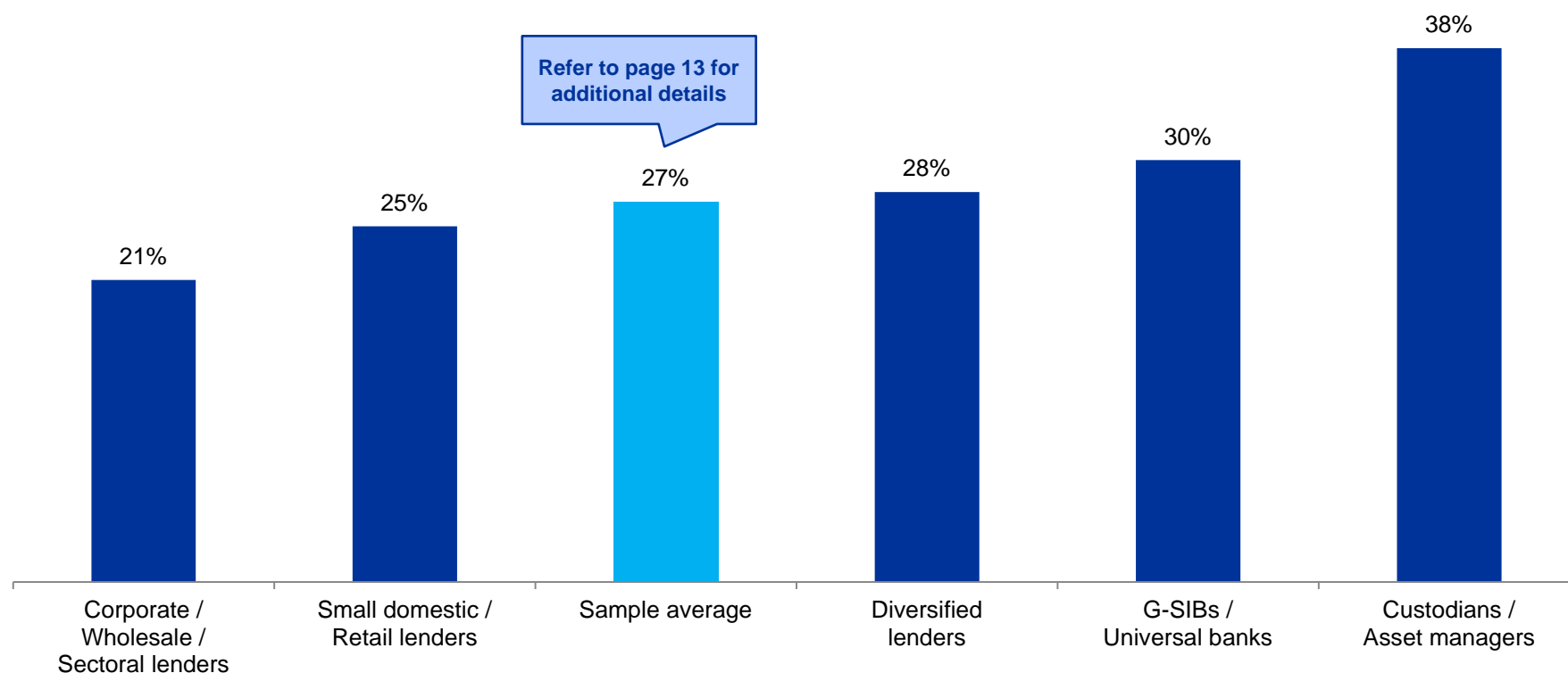
Note: Simple averages either within the full sample or within the individual business model clusters.
*(a)   Cumulated net liquidity outflows, in % of total assets, starting from the reference date up to the end of the 6th month in the **Extreme shock** scenario.*

Overview of the key LiST flows for the most shared relevant currencies in the sample

|	All currencies (103 banks)	EUR only (103 banks)	USD only (45 banks)	GBP only (17 banks)	CZK only (4 banks)
Initial stock of CBC	23.2%	19.4%	2.8%	2.8%	6.6%
Wholesale liabilities maturing & other[a]	-8.4%	-5.7%	-1.1%	-3.0%	-2.3%
Net collateral flows	0.6%	0.5%	-0.1%	0.0%	0.1%
Wholesale assets maturing	2.8%	1.2%	1.9%	0.6%	0.1%
NLP after 6m (*Baseline*)	18.1%	15.4%	3.6%	0.4%	4.5%
Deposit withdrawals & other[b] (*Adverse*)	-15.1%	-12.5%	-2.2%	-1.6%	-3.7%
Committed facilities drawdown (*Adverse*)	-1.3%	-1.0%	-0.5%	-0.2%	-0.2%
Impact from rating downgrade (*Adverse*)	-0.1%	-0.1%	0.0%	-0.1%	0.0%
NLP after 6m (*Adverse*)	1.5%	1.8%	0.9%	-1.6%	0.5%
Deposit withdrawals & other[b] (*Adv to Ext*)	-4.7%	-3.8%	-0.7%	-0.4%	-1.1%
Committed facilities drawdown (*Adv to Ext*)	-0.3%	-0.4%	-0.1%	-0.1%	0.0%
Impact from rating downgrade (*Adv to Ext*)	-0.2%	-0.2%	0.0%	0.0%	0.0%
NLP after 6m (*Extreme*)	-3.7%	-2.7%	0.1%	-2.1%	-0.6%

Note: Simple average values for banks reporting liquidity figures in a specific currency. Total assets used in ratios are always the consolidated ones. The sum of individual bars may not perfectly match due to rounding.

(a) Includes items marked as 'other' inflows / outflows in the LiST 2019 Template.

(b) Includes variations in the stock of counterbalancing capacity mostly due to deposit withdrawals (e.g. lower minimum reserve requirements).

Reliance on short-term unsecured wholesale funding. Distribution by average credit rating

**Net 6-month wholesale funding maturities in % of total assets**
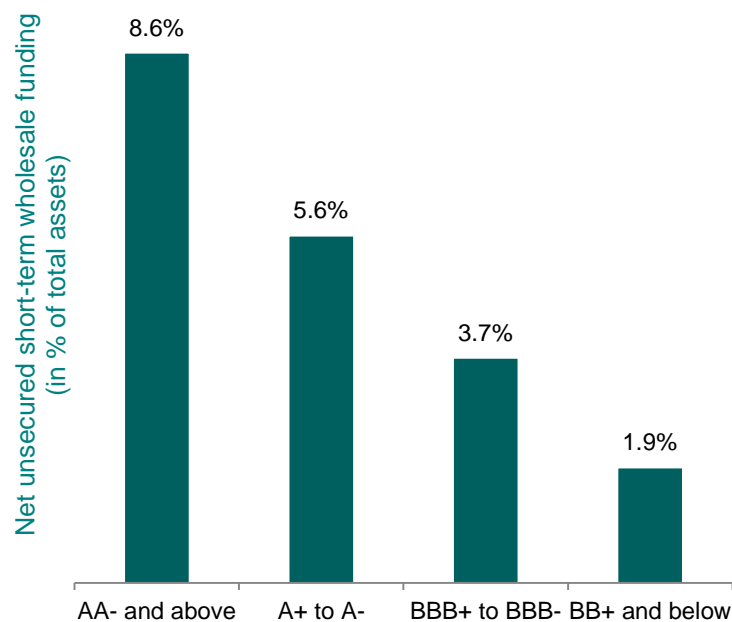
Banks' ability to access short-term unsecured wholesale funding markets is a function of their credit rating.

Note: "net unsecured short-term wholesale funding" defined as the sum of outflows over 6 months from: i) non operational deposits of credit institutions and other financial customers (less the inflows from loans and advances with the same types of counterparts); ii) unsecured bonds and other unsecured securities issued; iii) derivatives and FX swap transactions (net of the corresponding inflows).

Liquidity impact of a credit rating downgrade. Distribution by average credit rating

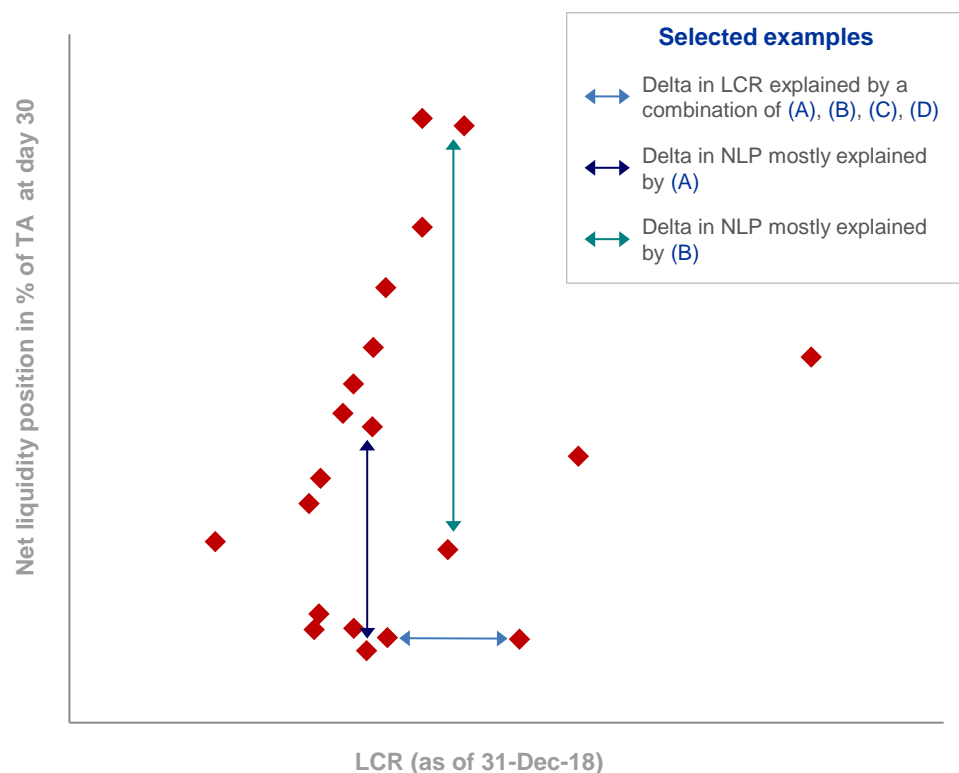**Impact of own credit rating downgrade over 6 months as a % of consolidated CBC**
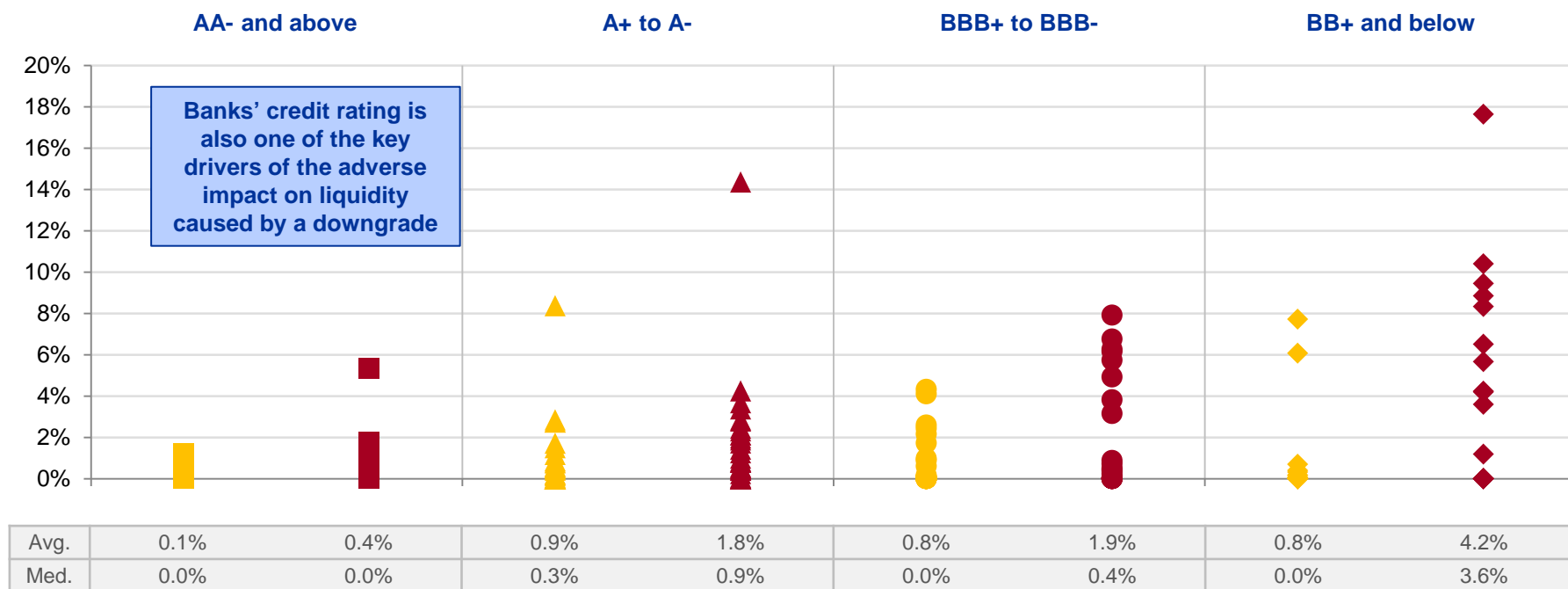
Note: The values shown in the chart are the cumulated net outflows over 6 months triggered by a 1-notch (3-notch) credit rating downgrade in the Adverse (Extreme) shock scenario divided by the outstanding stock of CBC at the end of month 6. The credit ratings are an average of the main four agencies' ratings, when assigned, as of the reference date. Two banks are not included in the analysis as 'not rated'.

Methodological differences between the LCR (Pillar 1) and the Net Liquidity Position (LiST 2019)

LCR vs. NLP

Selected examples

↔ Delta in LCR explained by a combination of (A), (B), (C), (D)

↔ Delta in NLP mostly explained by (A)

↔ Delta in NLP mostly explained by (B)

Net liquidity position in % of TA at day 30

LCR (as of 31-Dec-18)

*Note: NLP after 30 days under the **Extreme shock** scenario assumptions.
Only **G-SIBs / Universal banks** shown in the graph.*

▪ **Methodological differences** – magnified by business model specificities – **explain the cases of banks with similar LCR levels but different survival periods** (and vice-versa):

A. NLP reflects additional non-HQLA assets included in the LiST 2019 counterbalancing capacity (e.g. retained securities)

B. Differences in the deposit outflow rates between the LiST 2019 and LCR

C. No inflows from commercial loans in the LiST 2019

D. No market shock in the LiST 2019

Benchmark of risk management practices 1/2
Collateral management

Questions	Answers

1 — *Does the bank have in place an organisational structure dedicated to collateral management?*

Yes: 89, No: 14

2 — *If answer to 1 is 'Yes', does the bank have the ability to overview in real time all of the values after haircuts of the bank's existing collateral pool(s) / earmarked assets?*

Yes: 64, No: 25, N/A: 14

3 — *Does the bank have in place an IT system for 'earmarking' collateral on an asset-by-asset basis?*

Yes: 73, No: 30

4 — *Have any external third parties / auditors reviewed the capabilities and effectiveness of the collateral management operations in the last two years?*

Yes: 54, No: 48

5 — *Does the bank make use of collateral swaps?*

Yes: 38, No: 65
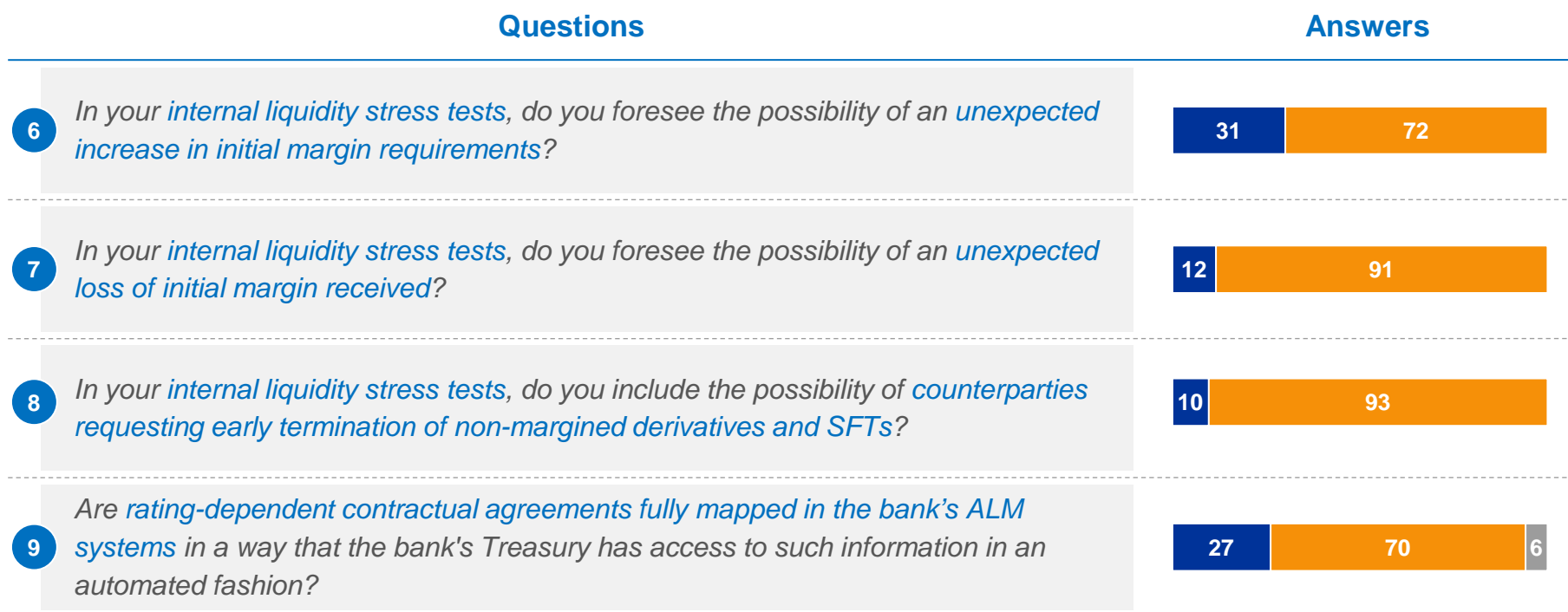
Legend: ■ Yes   ■ No   ■ N/A

Note: Information submitted by banks as 'Additional memo items' in the LiST 2019 Template.

Benchmark of risk management practices 2/2
Internal liquidity stress tests

Questions	Answers

6 — *In your internal liquidity stress tests, do you foresee the possibility of an unexpected increase in initial margin requirements?*

Yes	No
31	72

7 — *In your internal liquidity stress tests, do you foresee the possibility of an unexpected loss of initial margin received?*

Yes	No
12	91

8 — *In your internal liquidity stress tests, do you include the possibility of counterparties requesting early termination of non-margined derivatives and SFTs?*

Yes	No
10	93

9 — *Are rating-dependent contractual agreements fully mapped in the bank's ALM systems in a way that the bank's Treasury has access to such information in an automated fashion?*

Yes	No	N/A
27	70	6

Legend: ■ Yes   ■ No   ■ N/A

Note: Information submitted by banks as 'Additional memo items' in the LiST 2019 Template.