

Assessing the Liquidity Coverage Ratio



November 2, 2011

Executive summary (1/4)

In order to analyze crisis experience and compare it to the calibration of the LCR, we collected data from 10 U.S.-headquartered banks, with ~\$8.8 trillion of assets (~54% total U.S. banking system) during the period of time including July 2008 through January 2009. In addition, our analyses included data from 4 acquired and distressed institutions, whose total assets prior to acquisition totaled over ~\$1 trillion¹, in order to include the liquidity experience of institutions under severe idiosyncratic and systemic stress. Not all institutions provided data for each product/segment we analyzed; thus, analyses of some products/segments do not include all banks. LCR sensitivity analyses are calculated using banks' positions as of 12/31/2010.

The crisis experience for the sample of banks we examined appears to differ significantly from the calibration of the LCR in some respects.

Deposits: crisis experience differed from the LCR calibration in the following ways:

- Aggregate worst run-offs were below LCR factors (lower run-off for wholesale, but higher run-off for retail)
 - Worst 30-day wholesale run-offs of 33% vs. LCR 72% for the worst-case bank.
 - Financial institutions: largely aligned with LCR for operational (23% observed vs. 25% LCR) but ~62% percentage points lower than LCR for non-operational (38% observed vs. 100% LCR)
 - Non-financial corporates: 10-35 percentage points lower than LCR (16% observed vs. 25% LCR for operational; 41% observed vs. 75% LCR for non-operational)
 - Governments: 10-15 percentage points lower than LCR (15% observed vs. 25% LCR for operational; 60% observed vs. 75% LCR for non-operational)
 - Retail run-offs were 12% vs. LCR 7% factor for the worst-case bank

¹ Acquired firm assets are included in the ~\$8.7 trillion figure above

Executive summary (2/4)

Credit and liquidity (C&L) line crisis experience we collected compared to LCR factors:

- Worst drawdowns of liquidity lines to non-financials and all lines to financials observed in our sample were well below LCR factors
 - Committed credit and liquidity lines to financials: ~90 percentage points lower than LCR (9% observed vs. 100% LCR)
 - Liquidity lines to non-financials: ~90 percentage points lower than LCR (10% observed vs. 100% LCR)
- Worst non-financial and retail credit line drawdowns observed in our sample were largely aligned with LCR factors
 - Retail: largely aligned (4% observed vs. 5% LCR)
 - Non-financial credit lines: largely aligned (10% observed vs. 10% corporate LCR/5% SME LCR)

Diversification: The LCR assumes worst-case run-off across all LCR categories occurs simultaneously, which differed from the data we collected, in which worst-case run-offs did not occur at the same bank nor in the same month.

Additional potential sources of liquidity:

FHLBs: The FHLBs provided increased liquidity to the U.S. banking system and increased funding to banks (including acquired firms) during the crisis. Including the excess FHLB capacity in the liquid asset buffer would reduce the shortfall by \$250-400 billion

Level 2 assets: The L2 cap increases the industry-wide liquid asset buffer shortfall by more than \$450 billion

Sensitivity analysis

- Setting deposit run-off and C&L lines drawdowns to crisis experience increases LCR by 21% and decreases shortfall by \$800 billion
- Additional potential liquidity sources: including FHLB capacity and removing L2 cap increases LCR by 24% and decreases shortfall by \$720-870 billion
- Combining deposits, C&L and prepayments with additional potential sources increases industry LCR from 60% to 104% and reduces U.S. industry shortfall from ~\$1,450 billion to a surplus of \$0-100 billion
- Removing simultaneous worst-case event assumption increases LCR by ~6% and decreases shortfall by ~\$240 billion
- Combining all 3 impacts increases LCR from 60% to 110% and reduces shortfall from ~\$1,400 billion to a surplus of ~\$300-400 billion

Executive summary (3/4)

Implications: product and market level impacts of the LCR

- Leading banks currently hold liquidity against products based on internal liquidity stress assumptions, which they develop based on historical experience. Accordingly, there is a significant difference between banks' internal liquidity held and the 2008 crisis experience versus the LCR requirement, across the same product areas identified in the historical analysis
 - Liquidity lines to non-financials and all lines to financials (19% average historical liquidity held and 10% maximum drawdown during 2008 crisis vs. 100% assumed in LCR)
 - Non-operational deposits (40% average historical liquidity held and 41% maximum drawdown during 2008 crisis vs. 75% and 100% assumed in LCR for corporate and financial institution deposits, respectively)
- Consistent with the calibration analyses, we have found a significant cost impact to 5 products and markets, which may lead to changes in either price, structure, or availability for customers:
 - Credit and liquidity lines
 - Commercial paper backstops
 - Variable rate demand note backstops
 - Financial institution credit and liquidity lines (e.g., to money market funds)
 - Non-operational deposits
 - Corporate non-operational deposits (e.g., money market demand accounts, term deposits)
 - Financial institution non-operational deposits
- This fact-based view on the impact of the LCR on banks, products, and markets was developed with a 4-step approach:
 - Collected internal data on current economics and cost impact of LCR across 15 products and 13 banks (representing ~\$9.2 Tr in assets, or 57% of U.S. bank assets)
 - Interviewed product managers to understand implications for product pricing, structure, and availability in response to increased costs (26 interviews across 13 banks)
 - Interviewed customers and investors to understand implications of product impact for their cash management, financing, and investing (18 customers, including municipal treasurers, corporate CFOs, and money market investors)
 - Interviewed bank treasurers to understand implications for overall balance sheet management (e.g., overall lending availability) (12 treasurers across 13 banks)

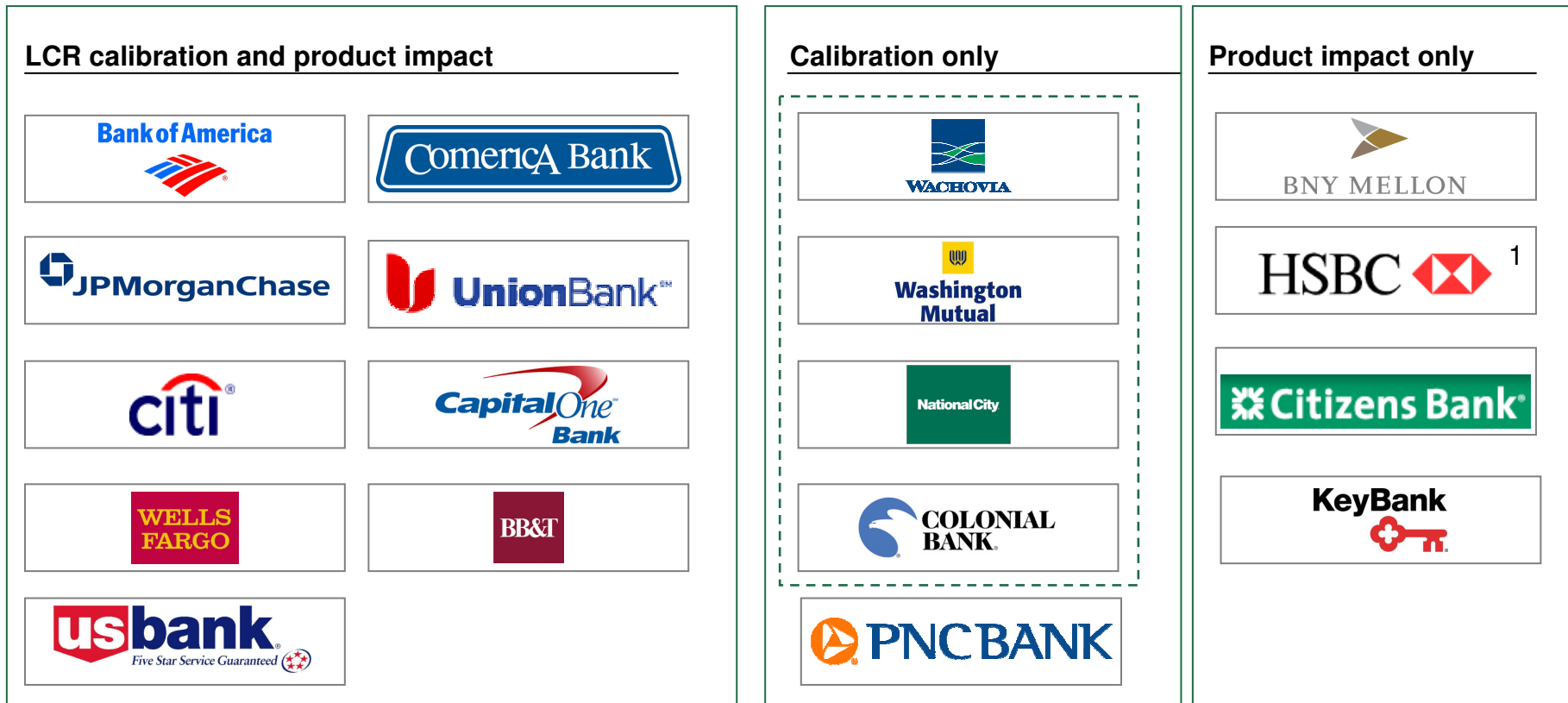
Executive summary (4/4)

Changes to balance sheet management

- As a result of the discrepancy between the liquidity that banks hold today, based on historical experience, and the LCR assumptions, the industry will need to increase the liquid asset buffer by \$1.4 Tr to meet an LCR of 100% (currently at ~60%)
 - Banks will also need to increase liquid assets because of the limit on L2 assets counting towards the liquid asset buffer (L2 cap)
 - For LCR outflows, the liquid asset shortfall is driven primarily by those products where a large discrepancy exists between current bank assumptions and the LCR assumptions
- To meet the liquid asset shortfall, banks have indicated that they will take a number of actions at the central level:
 - Increase the adjusted liquid asset buffer (i.e., post L2-cap) by exchanging L2s for L1s or issuing additional debt to fund purchase of L1s
 - Decrease LCR outflows selectively by decreasing off balance sheet liquidity line commitments, decreasing non-operational deposits, and decreasing the volume of short-term funding (e.g., overnight repos)

Analyses for LCR impact on products and calibration are based on data from 14 banks and 4 acquired institutions

 Acquired banks



Total assets (including banks in either calibration or product impact)

Bn	9,430
(% of U.S. market as of Q4 2010)	58

¹ North America only

SOURCE: SNL Financial; data from Q4 2010. Note that not all banks submitted data for all analyses

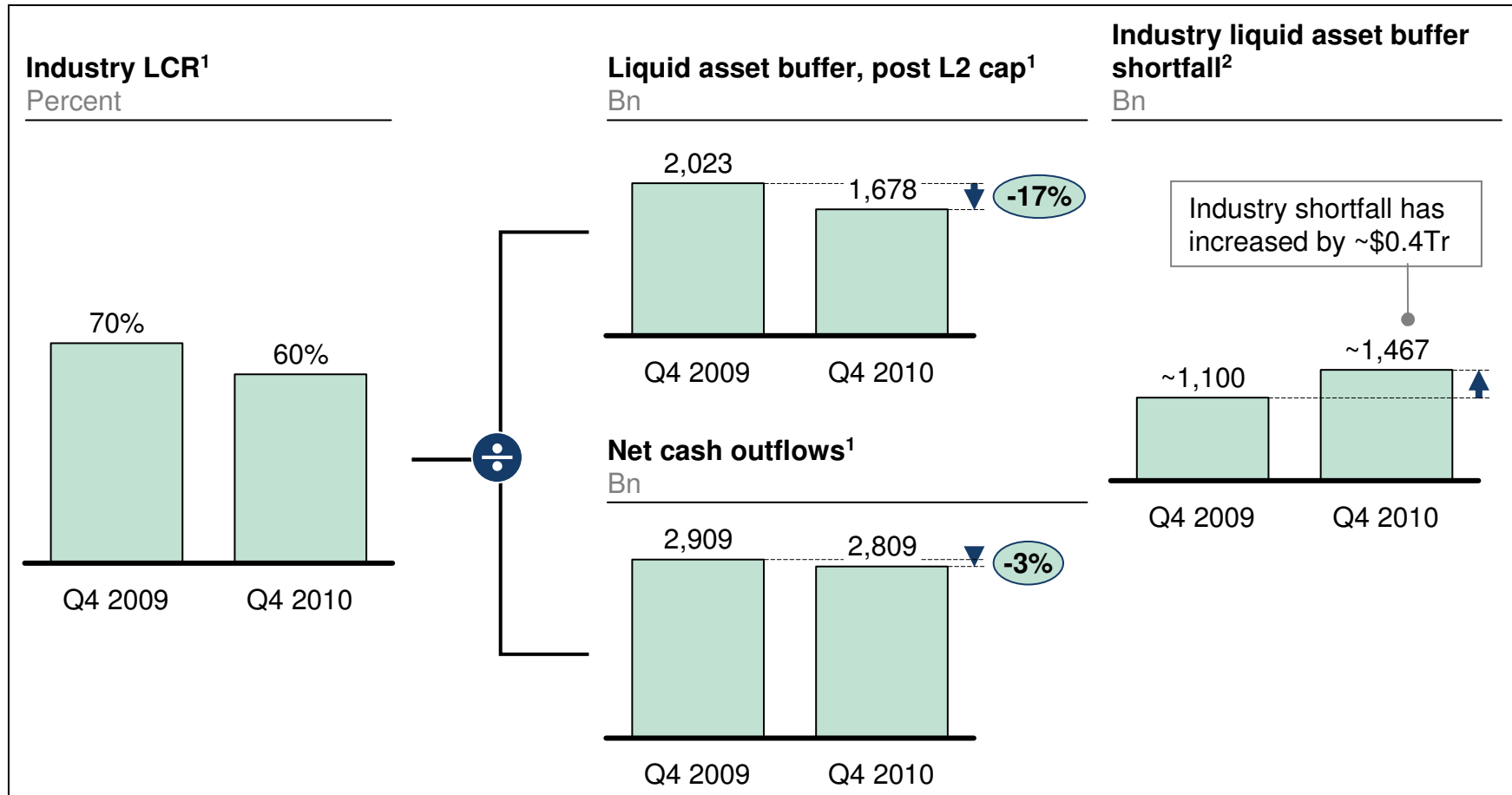
Caveats and limitations

- This report contains the results of an **observational study**, which aggregates information from a **sample** of US banks, reflecting **recent historical** and **current experience** of those sample of banks
- Results from banks outside this sample, in non-US geographies, or from other historical or future periods may differ from the results reported here
- The reporting of data was based on Quantitative Impact Study definitions and instructions; if such definitions or instructions were to change, results may differ

Contents

- **Current industry LCR**
 - Calibration
 - Other liquidity sources
 - Overall sensitivity analysis
 - Product and balance sheet impacts

The U.S. banking industry LCR has decreased from 70 to 60% since 2009 primarily due to a drop in the recognized liquid asset buffer



Note: Industry numbers were estimated by scaling up based on total assets

1 The industry LCR, liquid asset buffer, and net outflow were computed using all banks in the sample including those with a liquid asset surplus

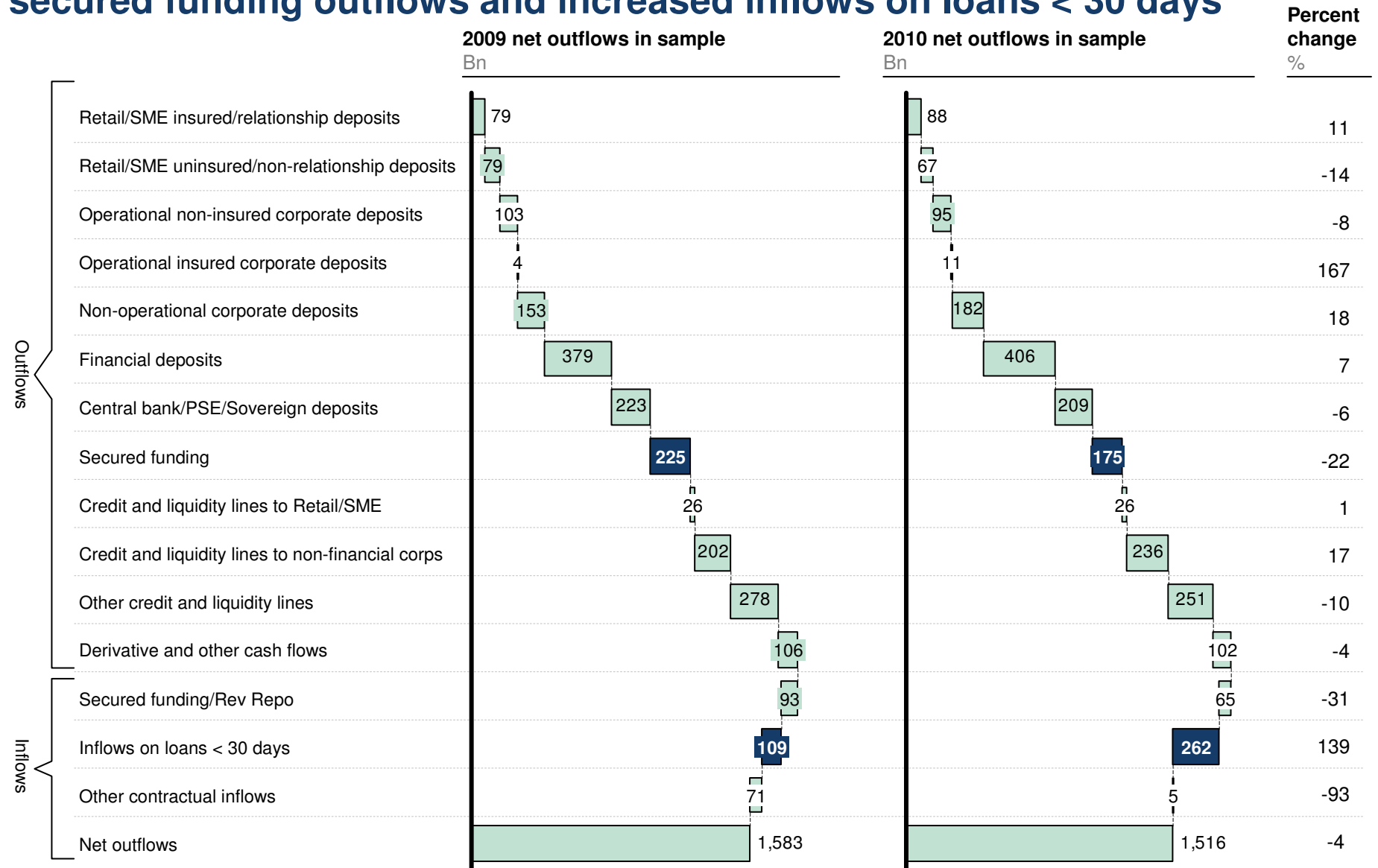
2 The shortfall did not include banks with a liquid asset surplus, given that the excess liquidity of these banks is not fungible across the industry

While banks have increased their liquid assets since 2009, the liquid asset buffer has declined due to the L2 cap



SOURCE: Q4 2009 and Q4 2010 QIS from banks submitting both datasets

Net outflows did not change significantly, but there were decreased secured funding outflows and increased inflows on loans < 30 days

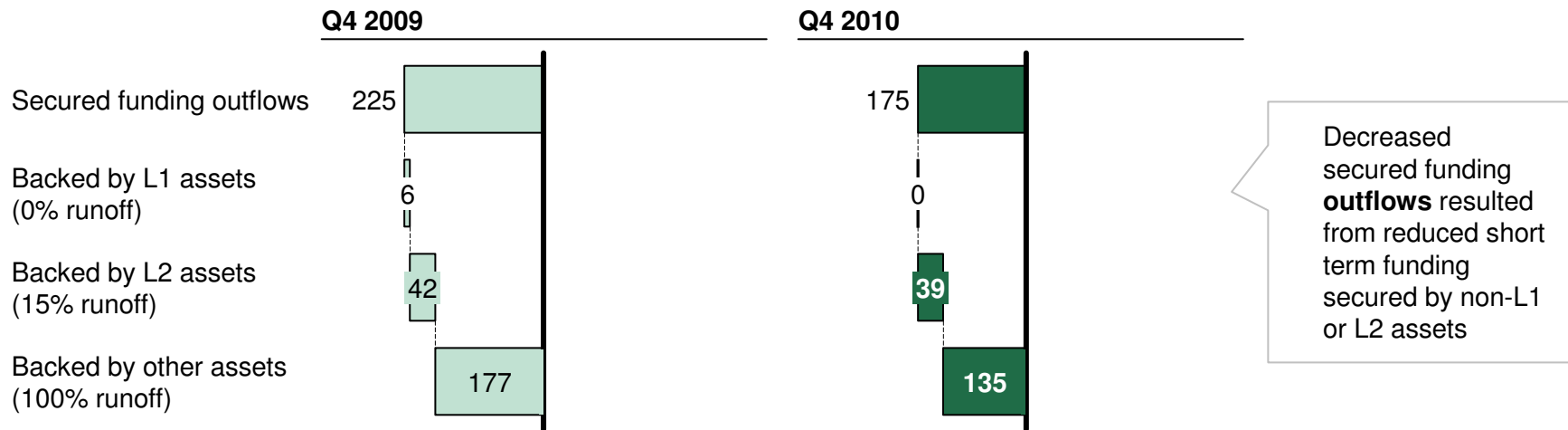


SOURCE: Q4 2009 and Q4 2010 QIS from banks submitting both datasets

Decrease in secured funding outflows was driven by funding backed by other assets and increase in loan inflows was driven by loans to FIs

Secured funding outflows in sample

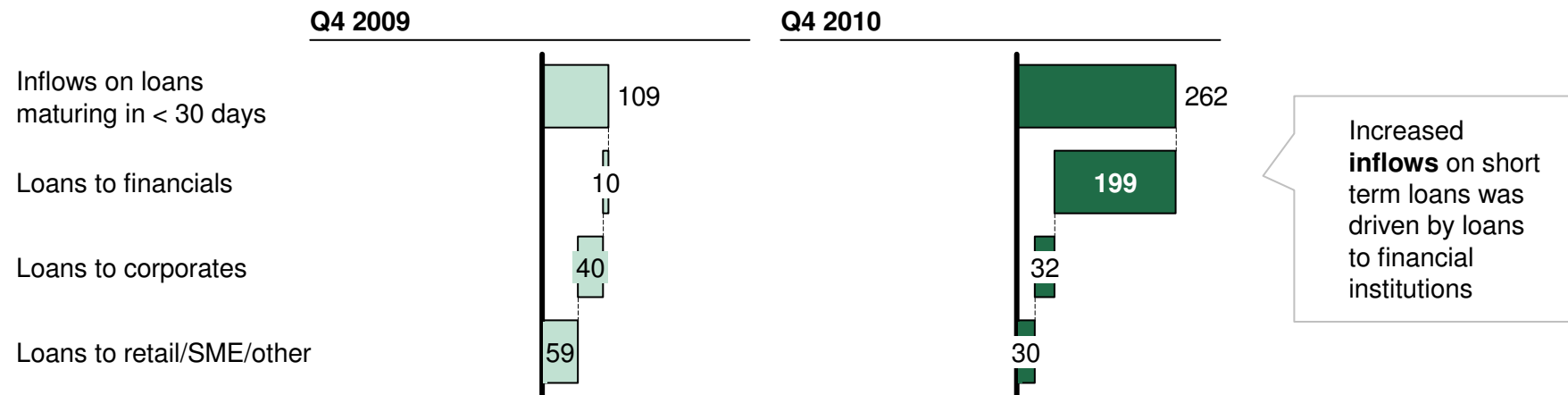
Bn



Decreased secured funding **outflows** resulted from reduced short term funding secured by non-L1 or L2 assets

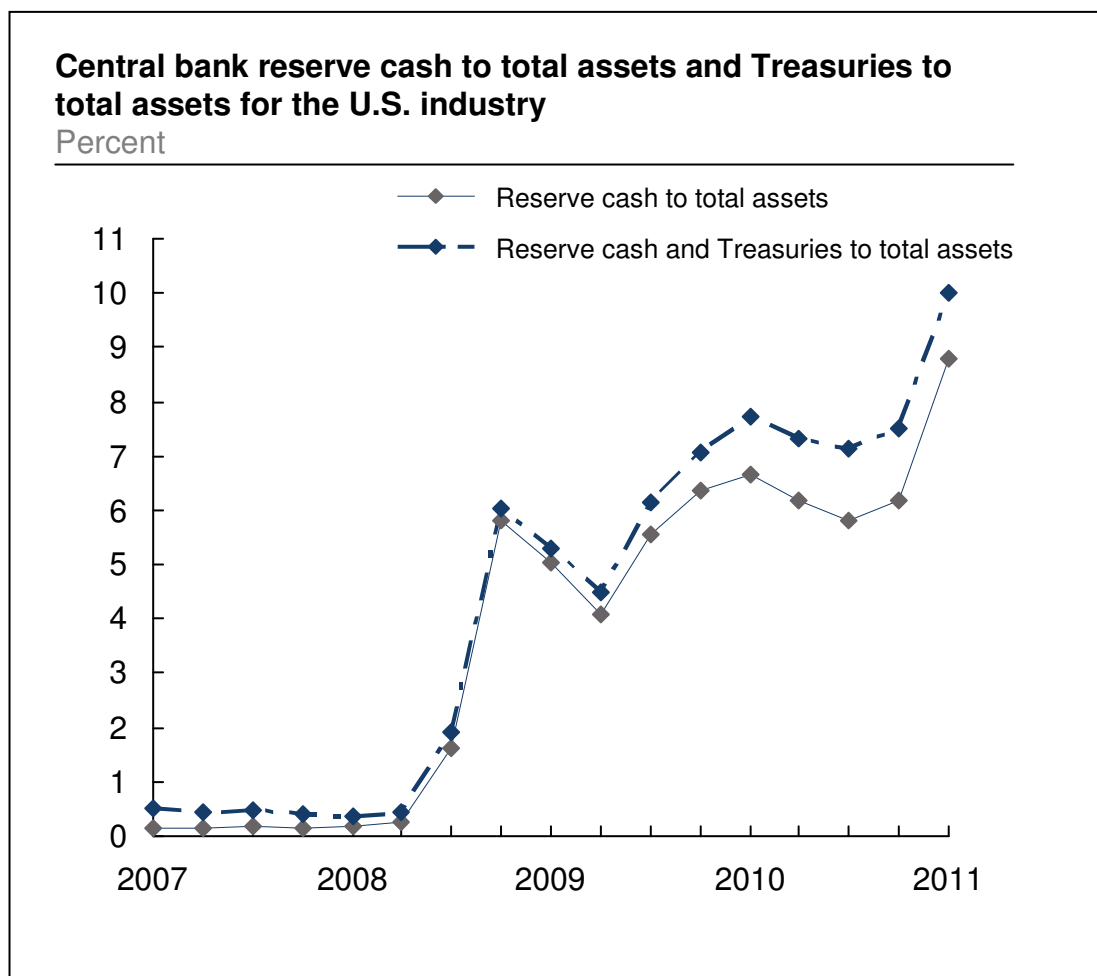
Inflows from loans maturing in < 30 days in sample

Bn



Increased **inflows** on short term loans was driven by loans to financial institutions

Banks are holding 10% of total assets today as reserve cash and Treasuries, both of which increase the observed LCR

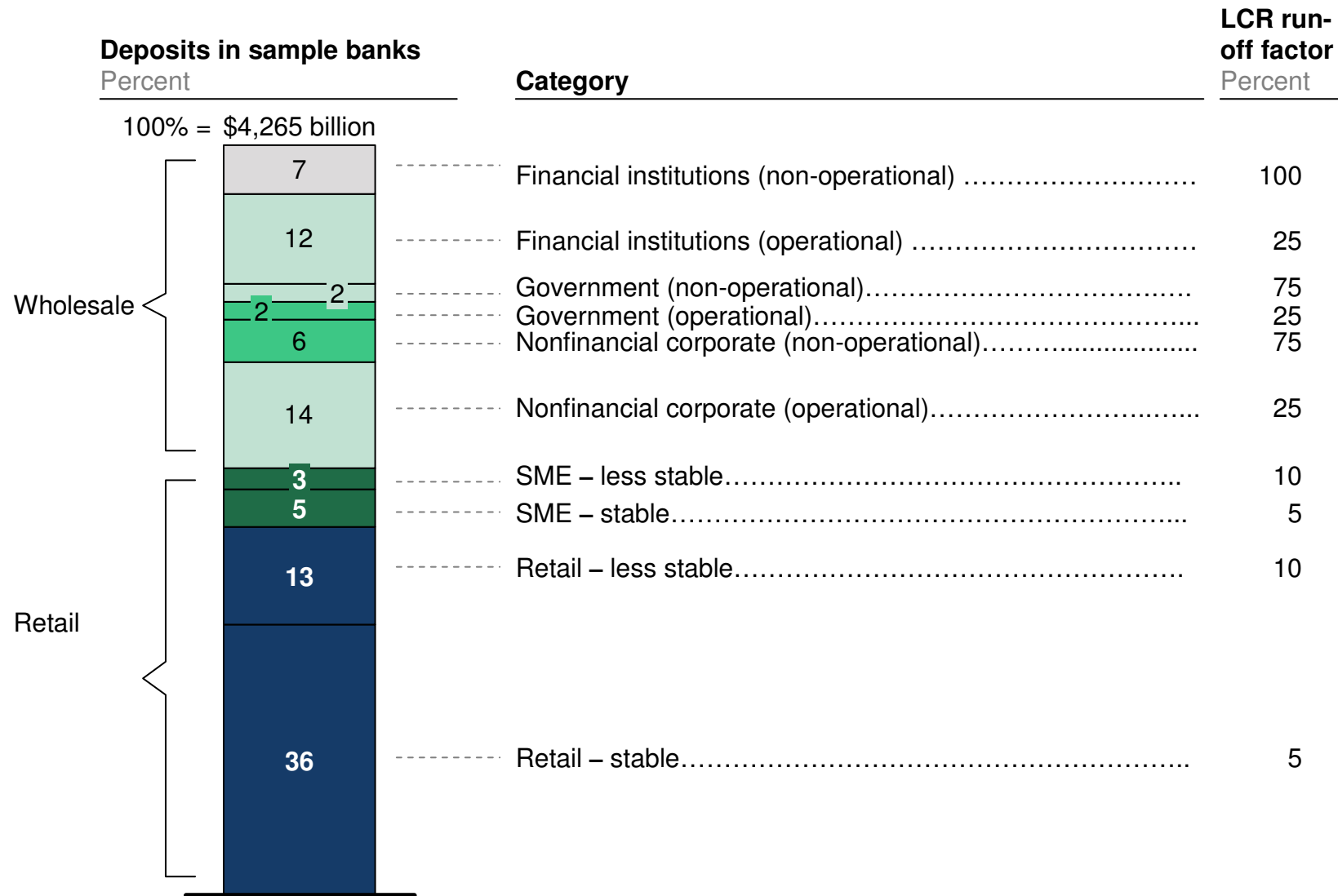


- Banks are holding almost 10% of total assets as reserve cash and Treasuries
- If the LCR were computed using the Q1'2007 ratio of cash and Treasuries to total bank assets, the LCR could decline from 60% to approximately 40%, and the liquid asset buffer shortfall could increase to \$1.8 Tr

Contents

- Current industry LCR
- **Calibration**
 - **Deposits**
 - Credit and liquidity lines
 - Diversification
- Other liquidity sources
- Overall sensitivity analysis
- Product and balance sheet impacts

Most deposits fall into retail and non-financial corporate categories

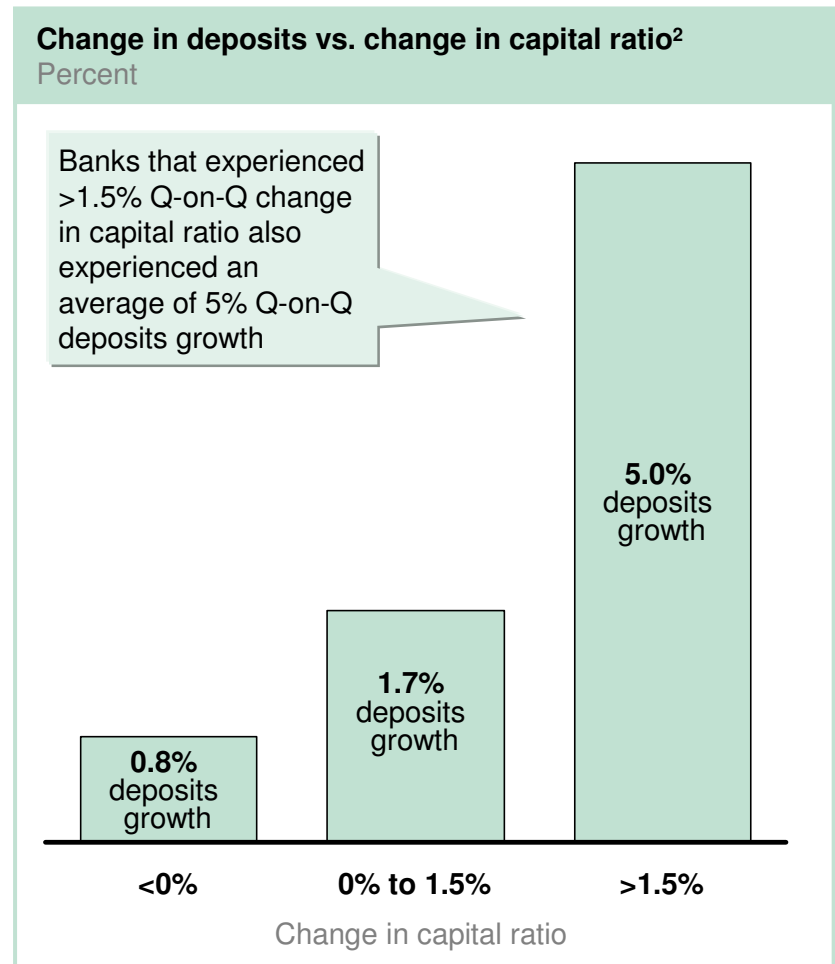
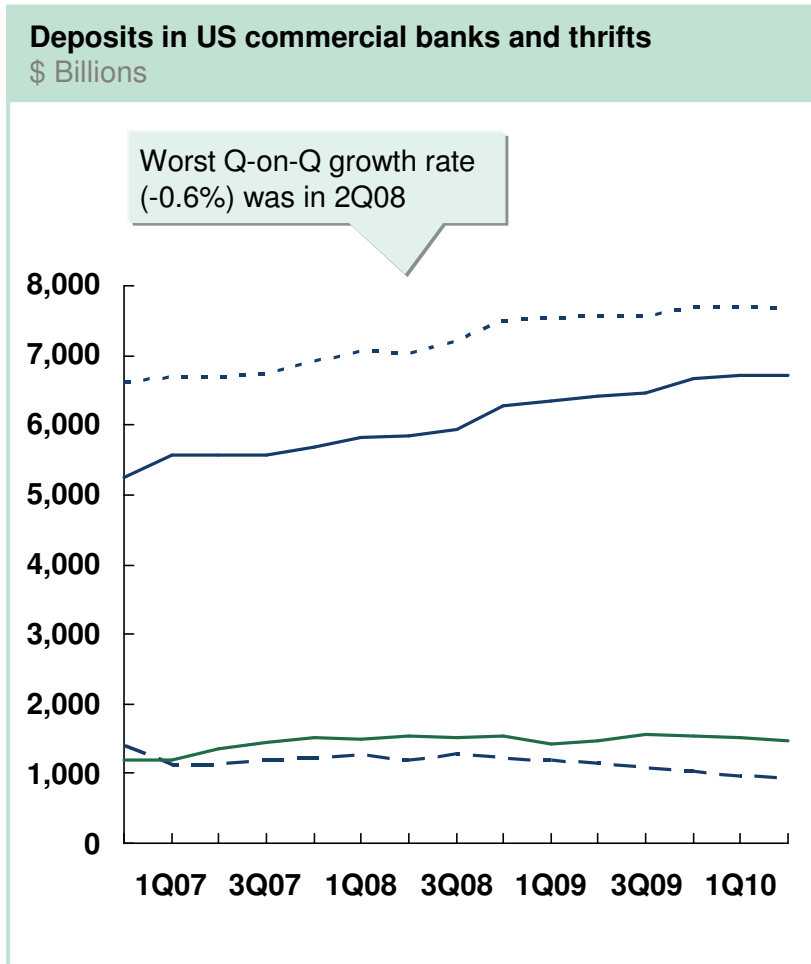


1 Sample banks have a lower proportion of retail deposits relative to industry mix

SOURCE: TCH member banks' QIS data Q4 2010; BIS

In aggregate, deposits continued to increase during the crisis, especially for stronger banks

— Domestic Retail - - - Total Domestic
 - - - Domestic Wholesale — Total Foreign¹

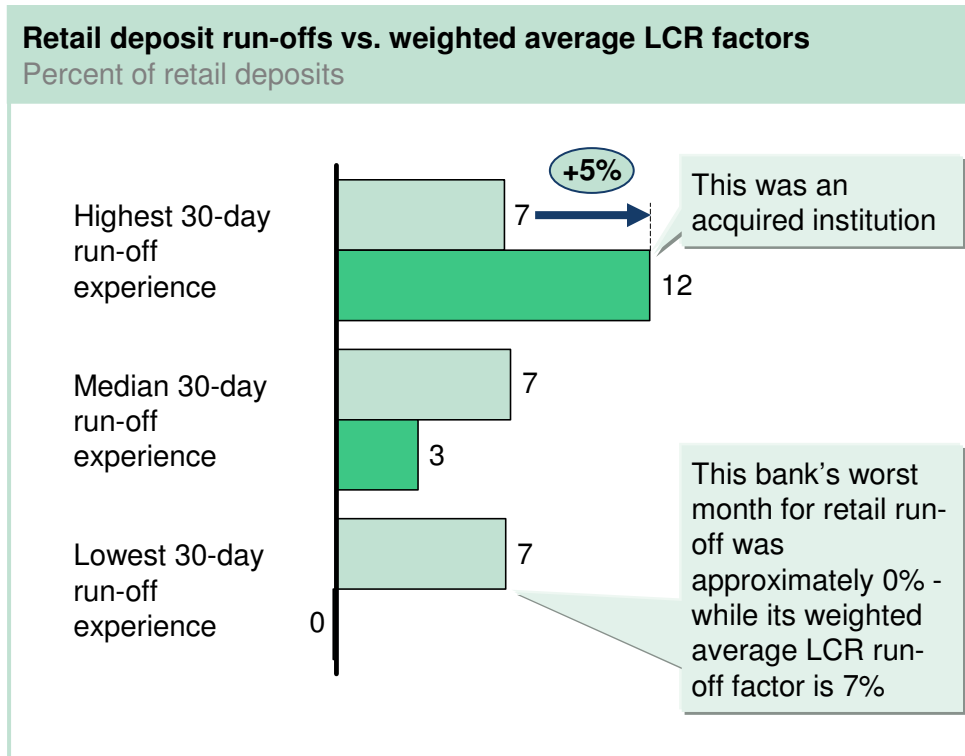


1 Foreign deposits includes both wholesale and retail deposits

2 Analysis shows the Q-on-Q change in deposits vs. Q-on-Q change in capital ratio (T1C/RWA). Analysis based on 8 banks' data, including 2 acquired banks, between 1Q07 and 2Q10

LCR factors for retail deposits exceed the median industry experience but are below the worst-case run-off experience observed during the crisis

- Weighted average LCR run-off factor
- Observed

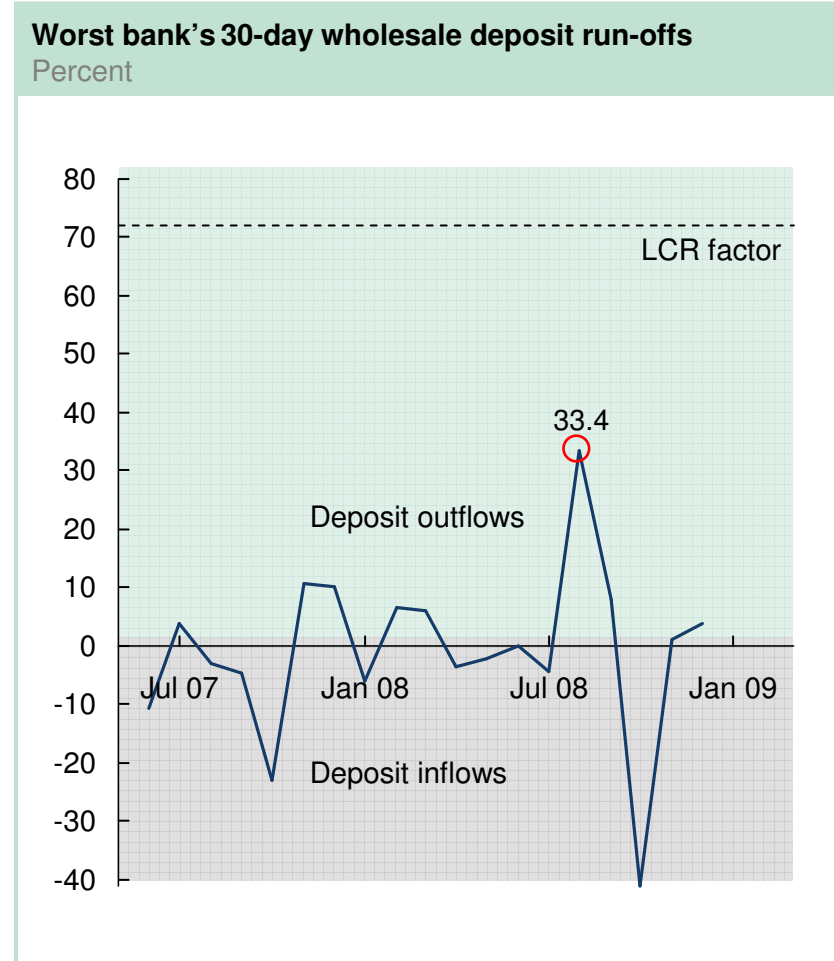
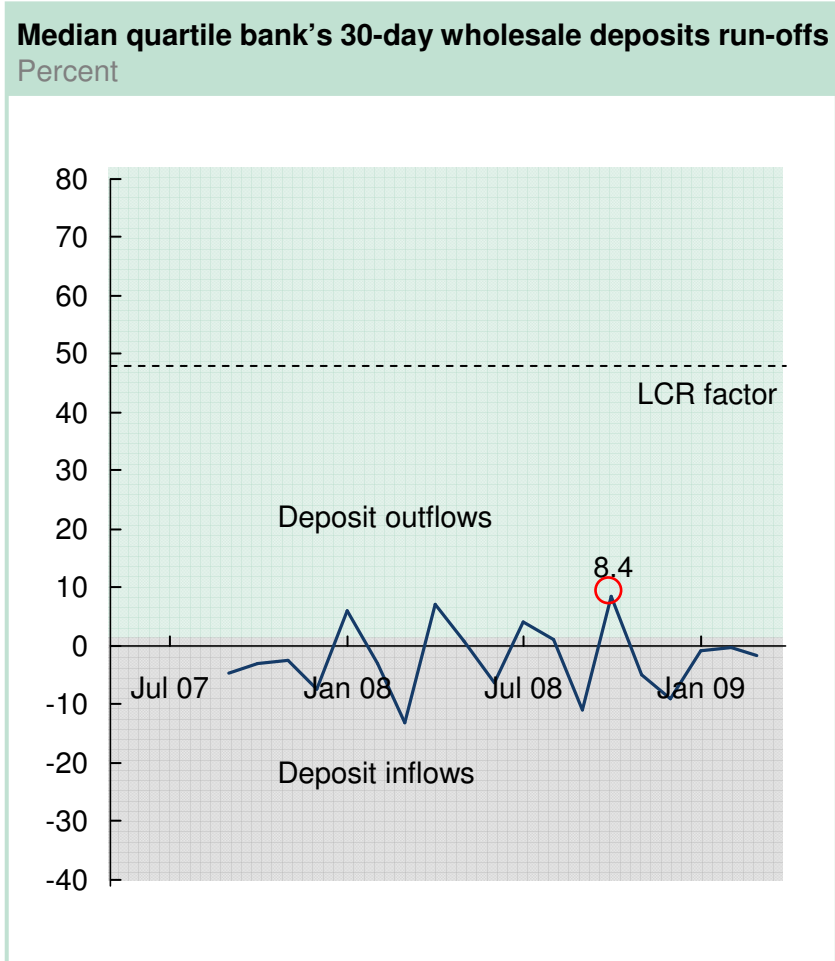


- On average, **most banks** experienced run-off that was **4% less than the weighted average LCR run-off factor**
- However, for the bank with **highest** 30-day run-off experience, actual run-off **exceeded average LCR factor by 5%**
- Based on data from **11 banks; including 3 acquired institutions**

- Because institutions have not tracked retail deposit run-off by LCR categories, we calculated the weighted average LCR run-off factor for each institution for retail deposits in total, considering the mix of deposits by LCR category
- The chart shows, for retail deposits, the worst single month deposit run-off experience for the institution with the lowest, median, and highest 30-day run-off and shows these banks' weighted average LCR factors

Both the median quartile and the worst banks' run-off rates observed during the crisis for wholesale deposits were below the LCR calibration

----- Basel-calibrated LCR factor¹
 ○ Highest 30-day run-off

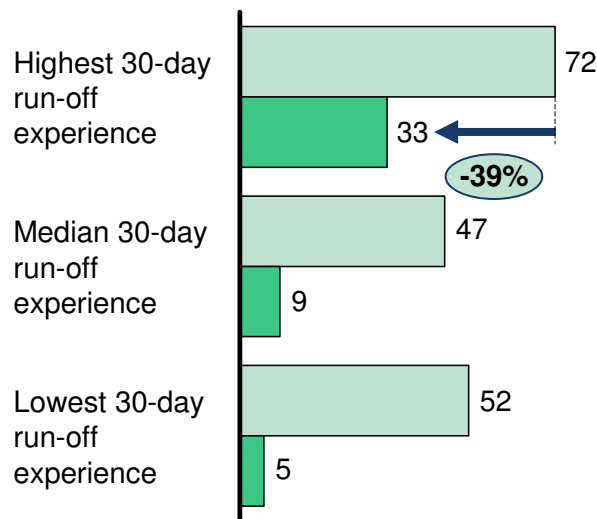


¹ Basel-calibrated LCR factor is estimated as the weighted average LCR run-off for wholesale deposits based on each bank's product mix. This factor will vary between banks

LCR factors for wholesale deposits exceed even the worst-case industry run-off experience during the crisis

- Weighted average LCR run-off factor
- Observed
- Analyses on following pages

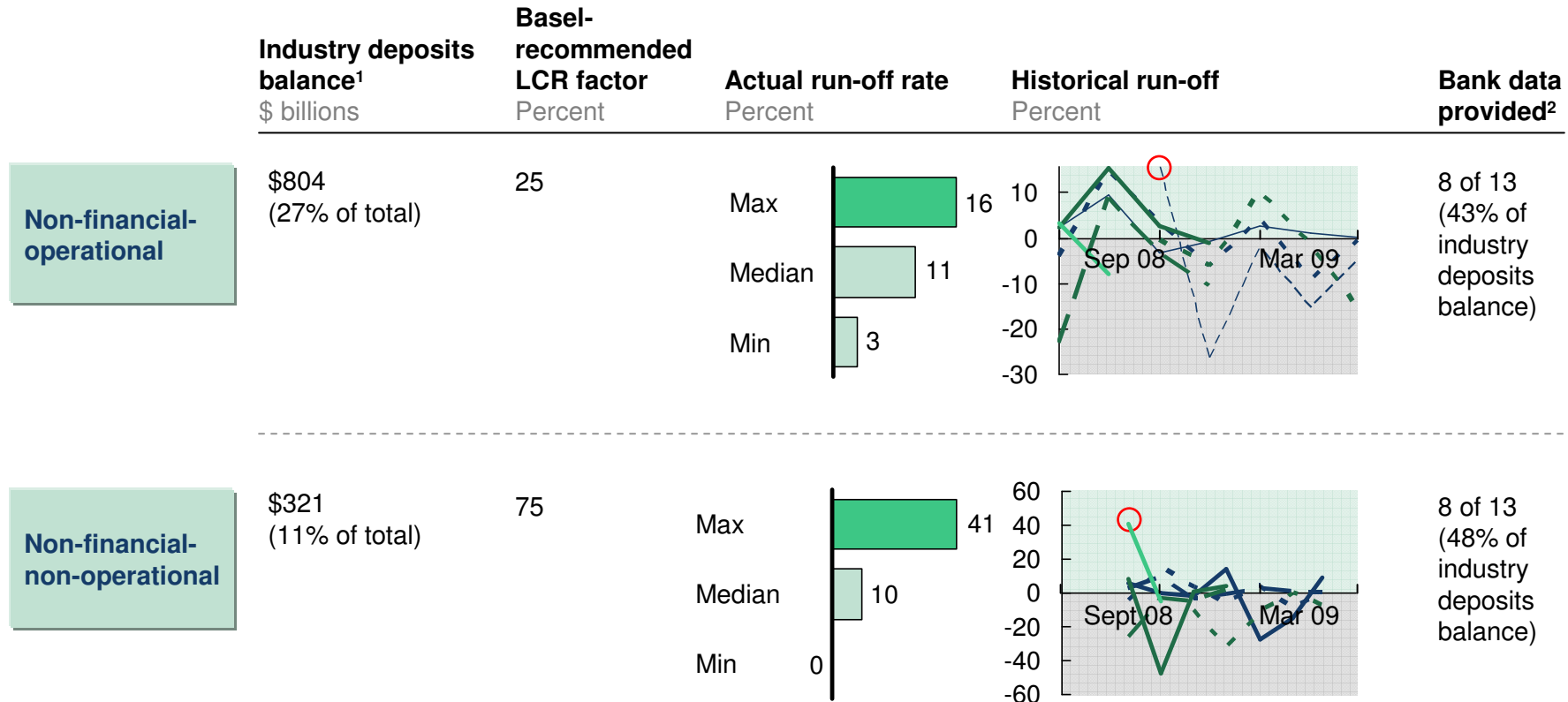
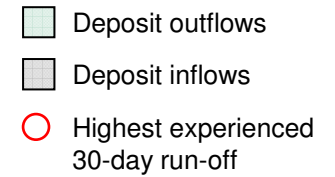
Wholesale deposit run-offs vs. weighted average LCR factors
Percent of wholesale deposits



- **The highest run-off was ~40% below average LCR factor**
- Based on data from **12 banks; including 2 acquired institutions**
- Further analyses indicates that the **Basel-recommended LCR factor is higher than actual worst experience for all 6 wholesale deposit categories**

- In this analysis, we calculated the weighted average LCR run-off factor for each institution for wholesale deposits in total, considering the mix of deposits by LCR category
- The chart shows, for wholesale deposits, the worst single month deposit run-off experience for the institution with the lowest, median, and highest 30-day run-off and shows these banks' weighted average LCR factors

The LCR factors for non-financial institution deposits are ~10-35 percentage points higher than the worst-case crisis experience

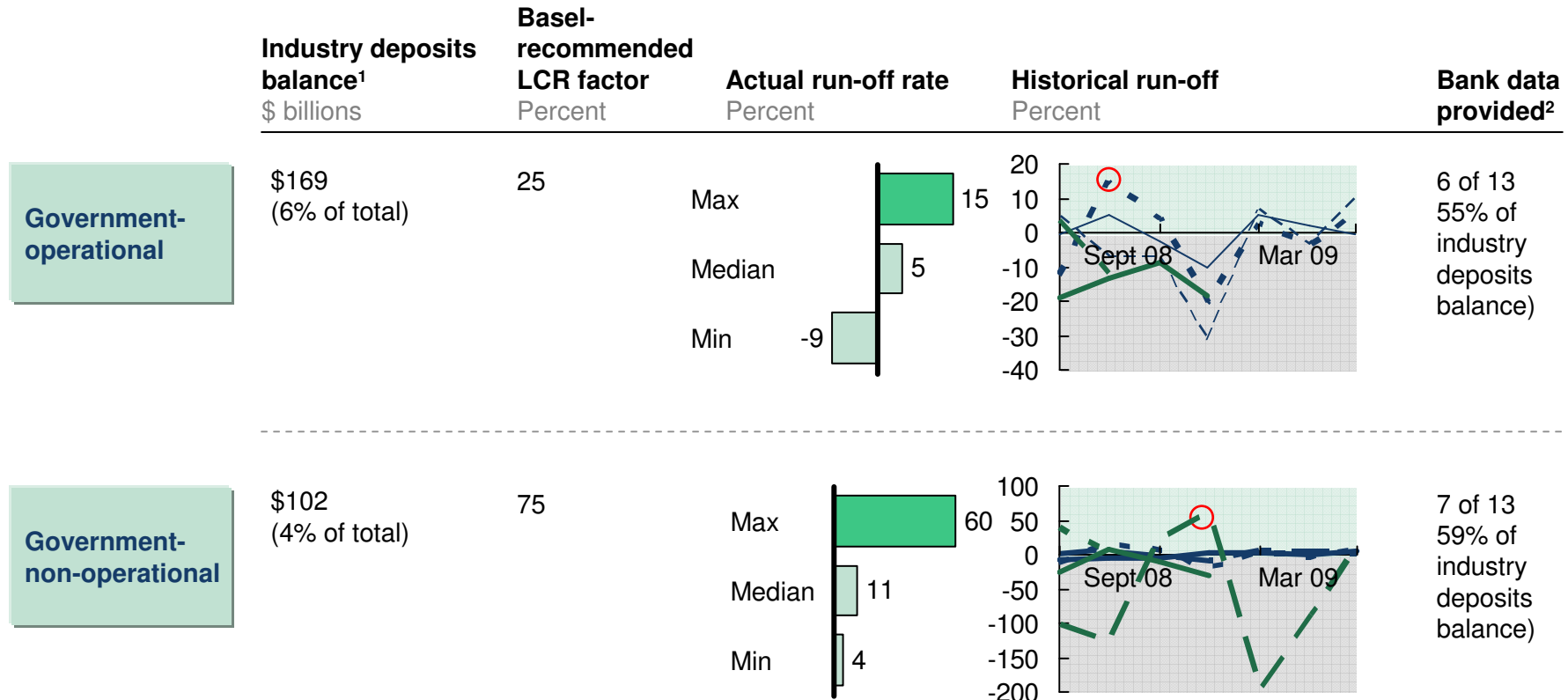
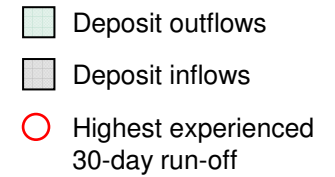


1 Deposits balance as a proportion of industry wholesale deposits; 9% of wholesale deposits are categorized “Other”

2 Total number of banks excludes banks that are not material participants in these products

SOURCE: TCH member banks’ QIS data; TCH member banks’ supplemental data

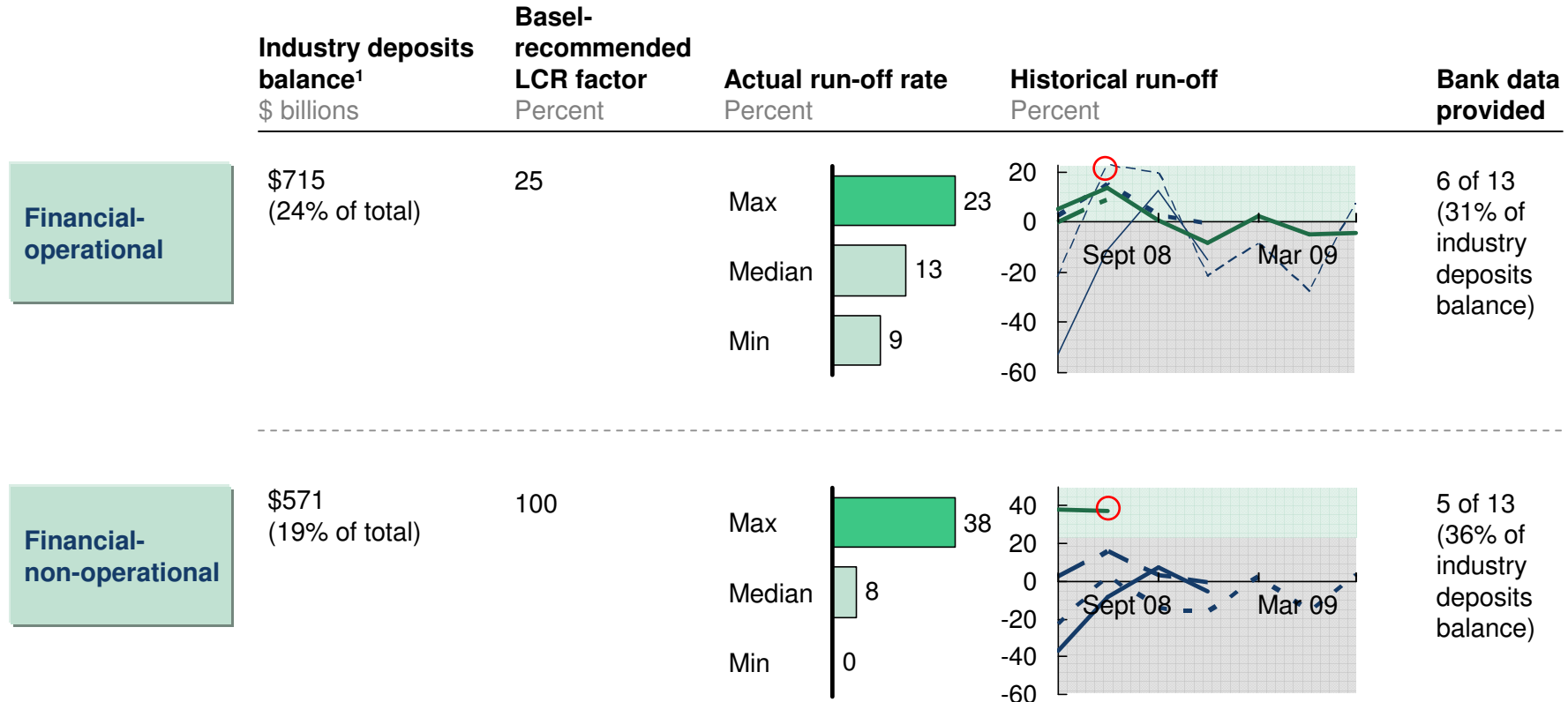
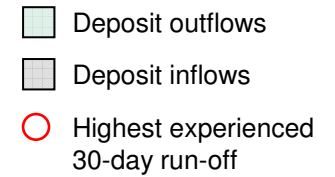
The LCR factors for government deposits are ~10-15 percentage points higher than the worst-case crisis experience



1 Deposits balance as a proportion of industry wholesale deposits; 9% of wholesale deposits are categorized “Other”

2 Total number of banks excludes banks that are not material participants in these products

The LCR factors for non-operational financial institution deposits are ~60 percentage points higher than the worst-case crisis experience



1 Deposits balance as a proportion of industry wholesale deposits; 9% of wholesale deposits are categorized “Other”

2 Total number of banks excludes banks that are not material participants in these products

SOURCE: TCH member banks’ QIS data; TCH member banks’ supplemental data

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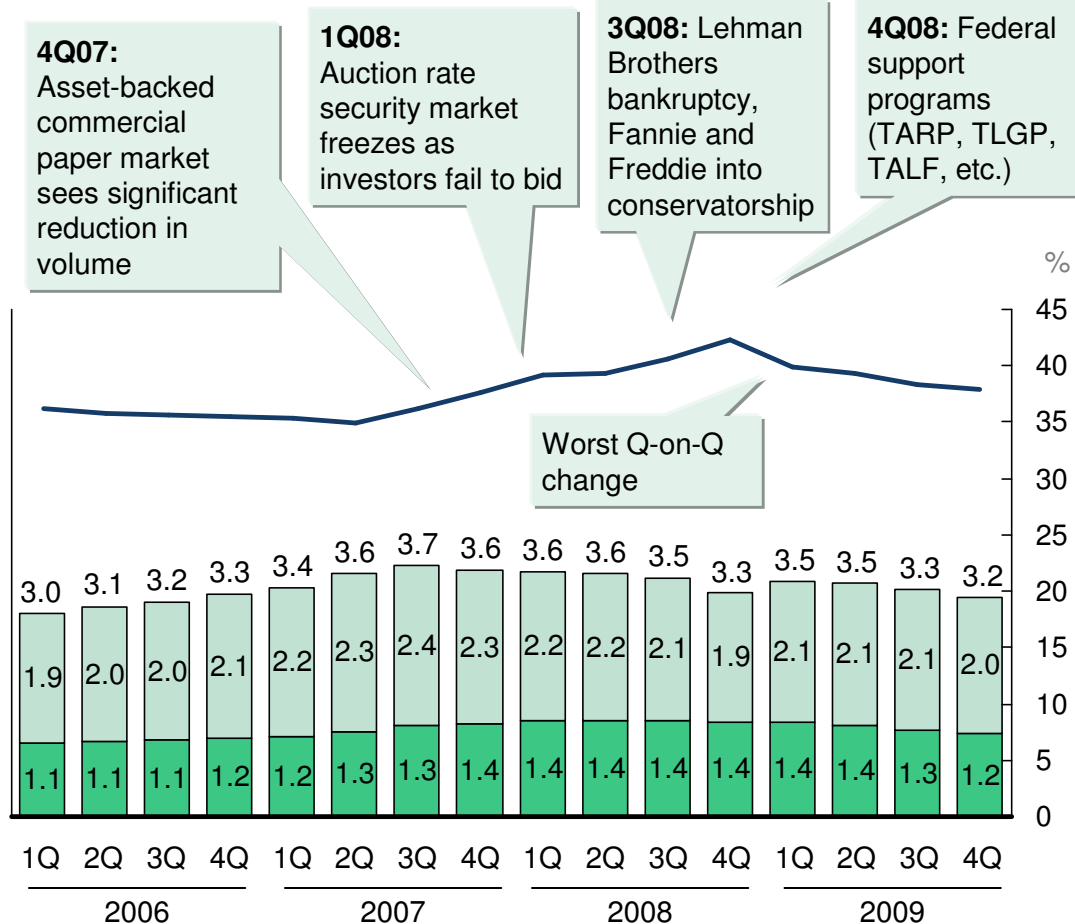
- Current industry LCR
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- Other liquidity sources
- Overall sensitivity analysis
- Product and balance sheet impacts

Industry-wide utilization increased by 6 percentage points over the crisis, primarily due to reductions in commitments

— Utilization¹
 □ Undrawn commitment
 ■ Outstandings

Utilization rates¹ of C&I lines and financial credit and liquidity lines

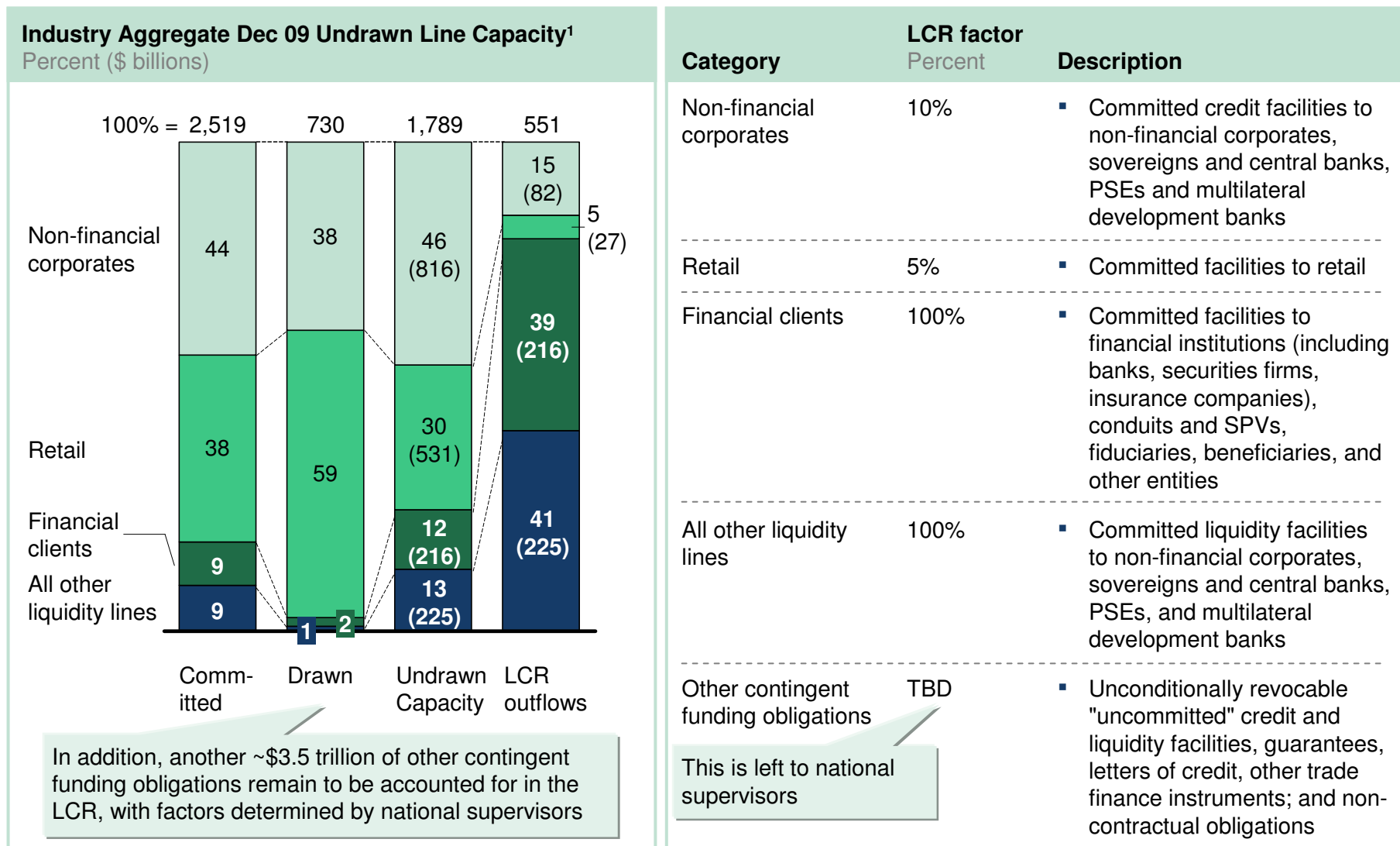
\$ Trillion and Percent



- Over the period of 4Q07 – 4Q08, the 6 percentage point **increase in line utilization was driven by a reduction in commitments**
 - **Undrawn commitments decreased by 16% or ~\$360 billion**
 - **Outstandings increased by 2% or ~\$27 billion**
 - **For the worst quarter (4Q08):**
 - **Undrawn commitments decreased by 9% or ~\$180 billion; and**
 - **Drawn amounts decreased by 2% or ~\$30 billion**
 - “Utilization increases through the crisis were driven largely by aggressive reductions in committed lines”
- **Commercial and industrial loans drove the bulk of the draw increase**, contrasted with a very small decrease in loans to financial institutions

¹ Utilization rate is calculated as the ratio of outstandings vs. the sum of outstandings and undrawn commitments

Committed lines to financial clients and non-financial liquidity lines have the largest impact on the LCR

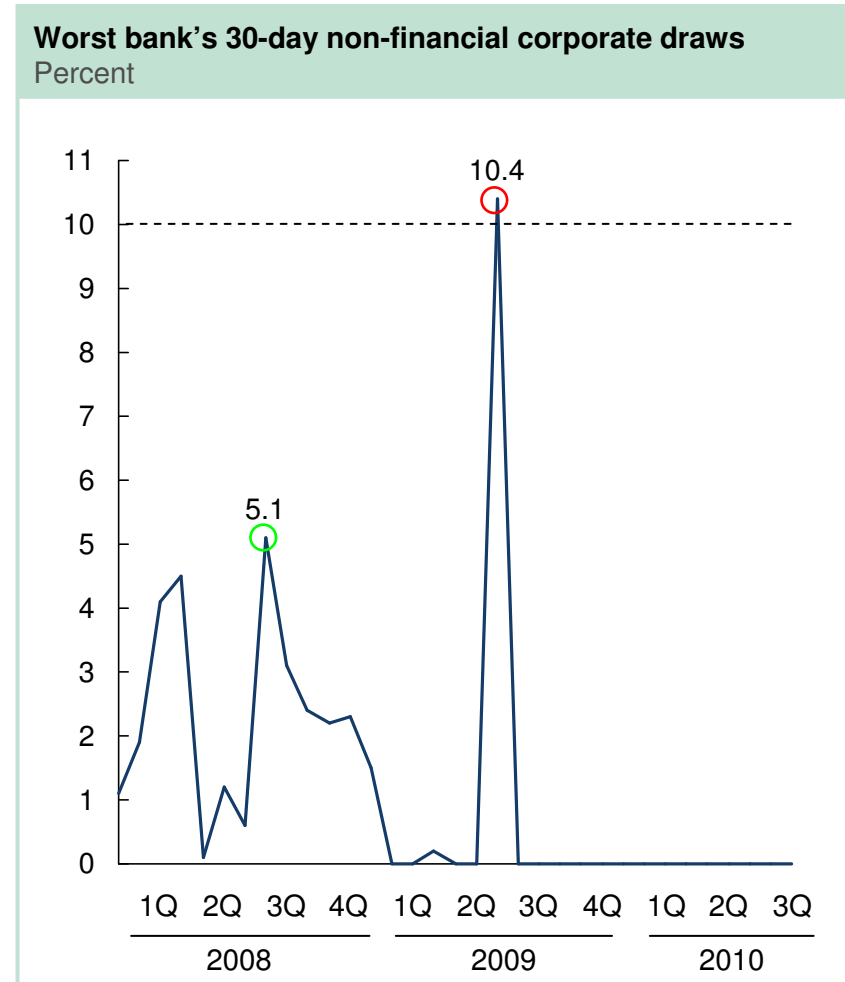
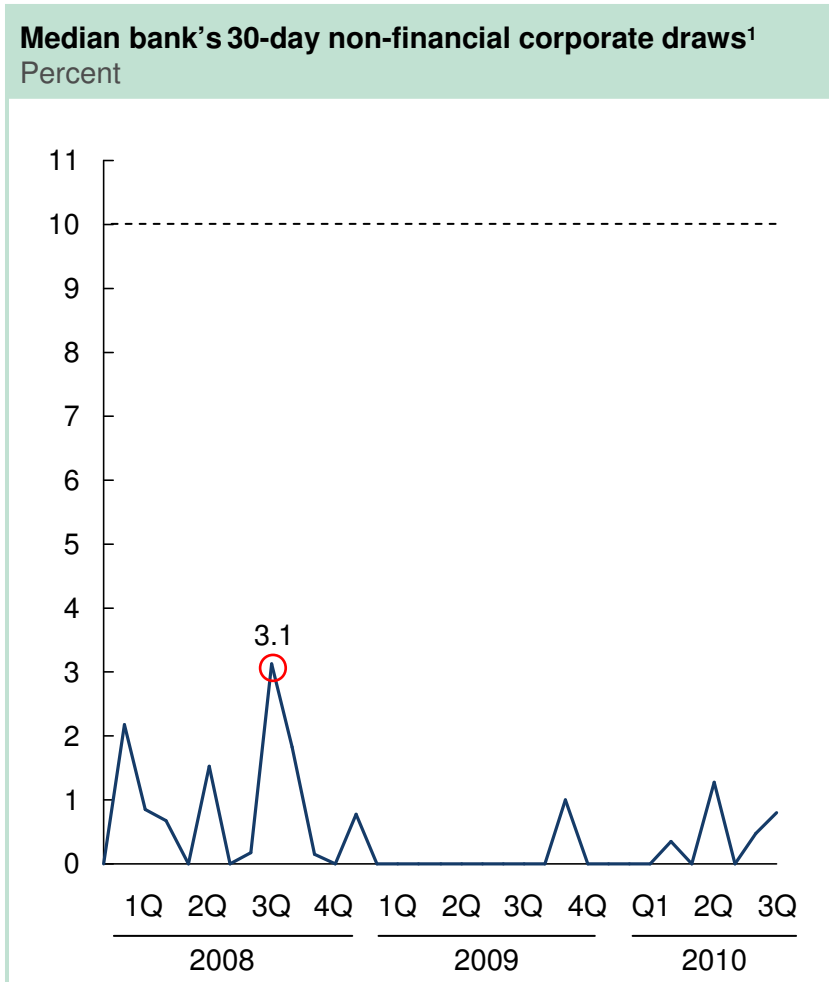


¹ Industry aggregate estimated by scaling up TCH member bank data by assets

SOURCE: TCH member banks' QIS data; TCH member banks' supplemental data; BIS

LCR calibration for corporate credit lines is roughly aligned with worst-case crisis experience

---- LCR calibration
 ○ Highest 30-day draw
 ○ 2nd Highest 30-day draw

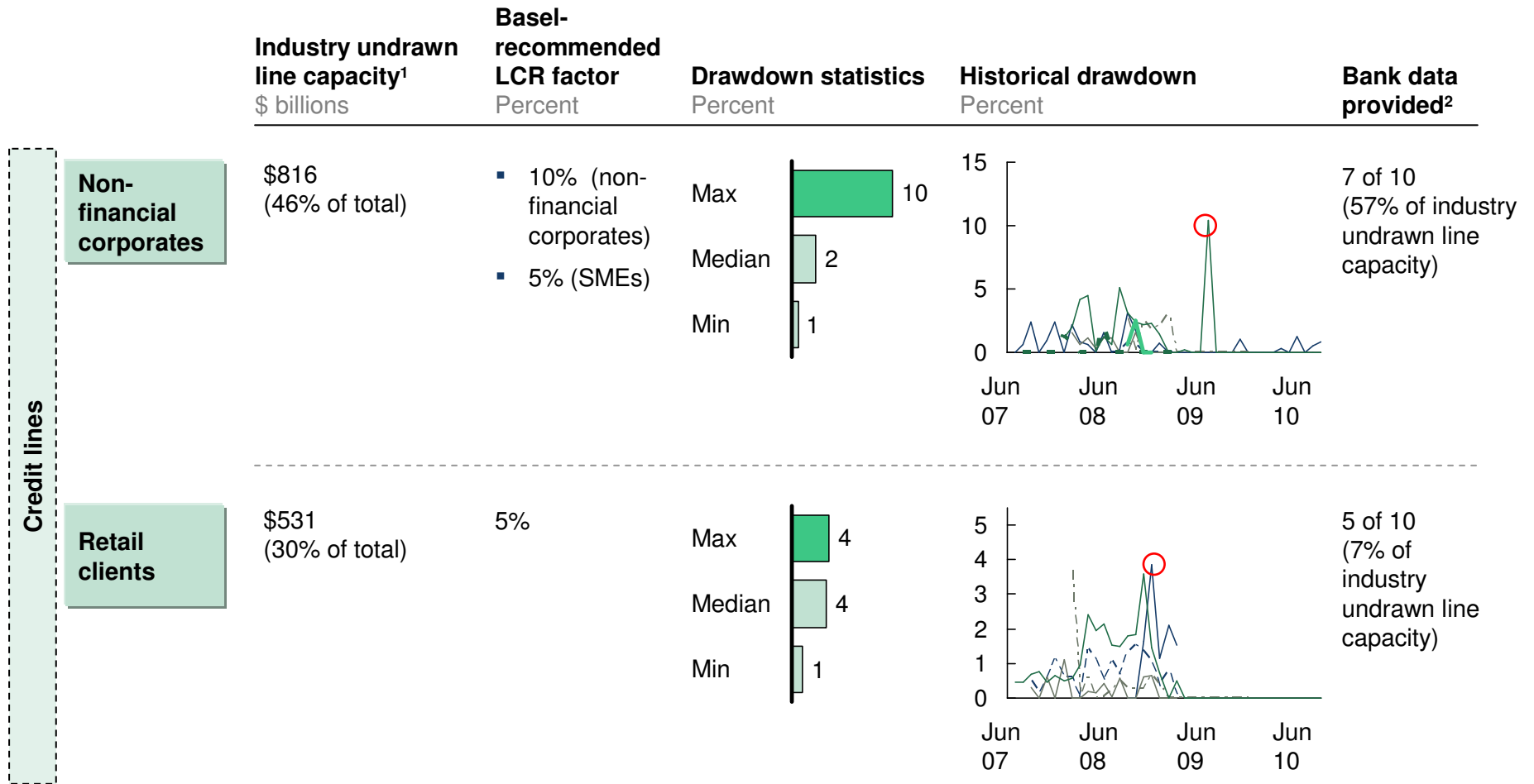


¹ In order to show a broader comparable time period, the bank representing the median bank is the bank that had above the median worst draws

SOURCE: TCH member banks' QIS data; TCH member banks' supplemental data

The LCR's calibrations for non-financial and retail credit lines are roughly aligned with historical drawdown rates during the crisis

○ Highest experienced 30-day draw

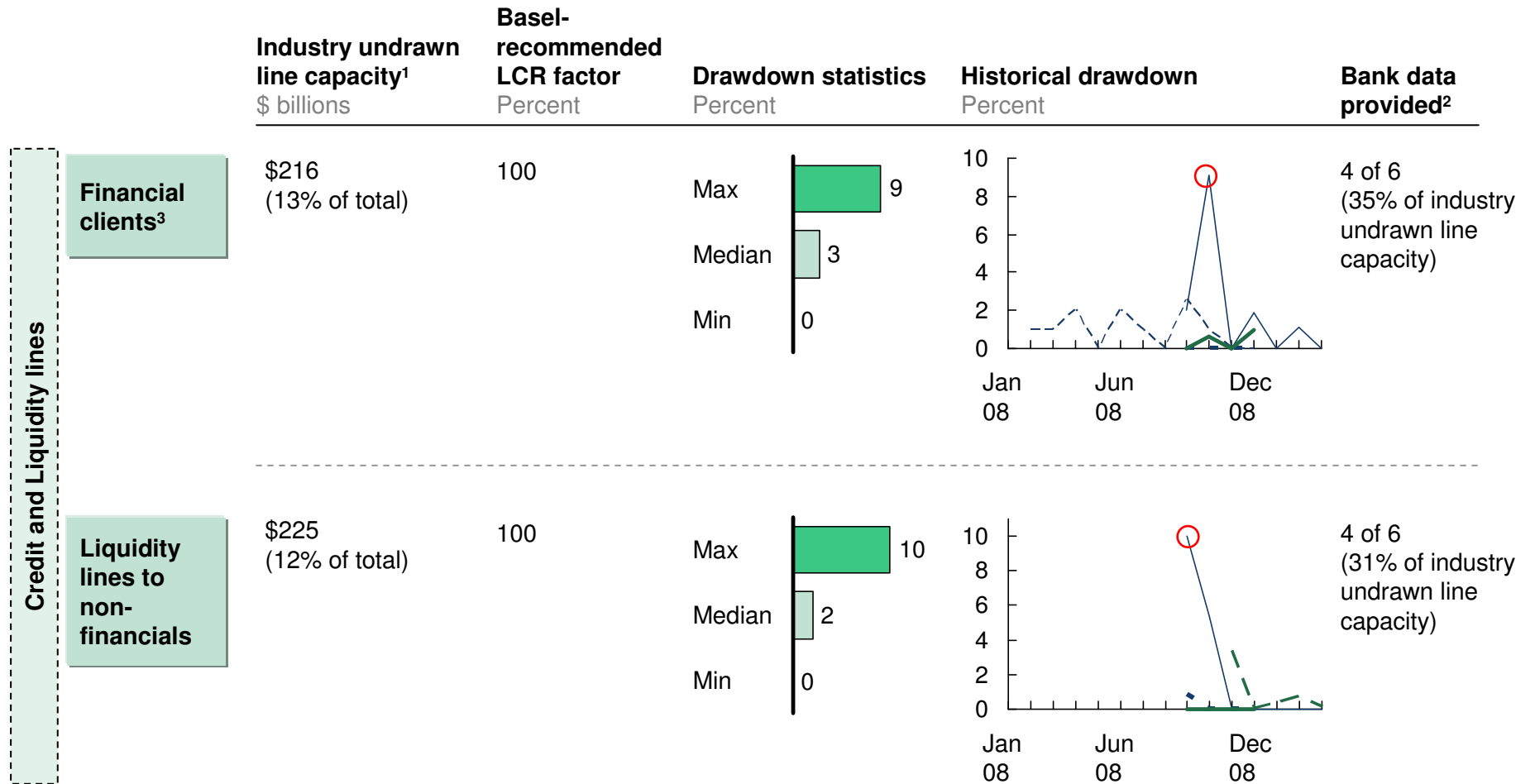


1 Undrawn line capacity as a proportion of total industry credit and liquidity undrawn capacity

2 Total number of banks excludes banks that are not material participants in these products

The LCR's calibrations for lines to financials and liquidity lines are significantly higher than historical drawdown rates during the crisis

○ Highest experienced 30-day draw



1 Undrawn line capacity as a proportion of total industry credit and liquidity undrawn capacity

2 Total number of banks excludes banks that are not material participants in these products

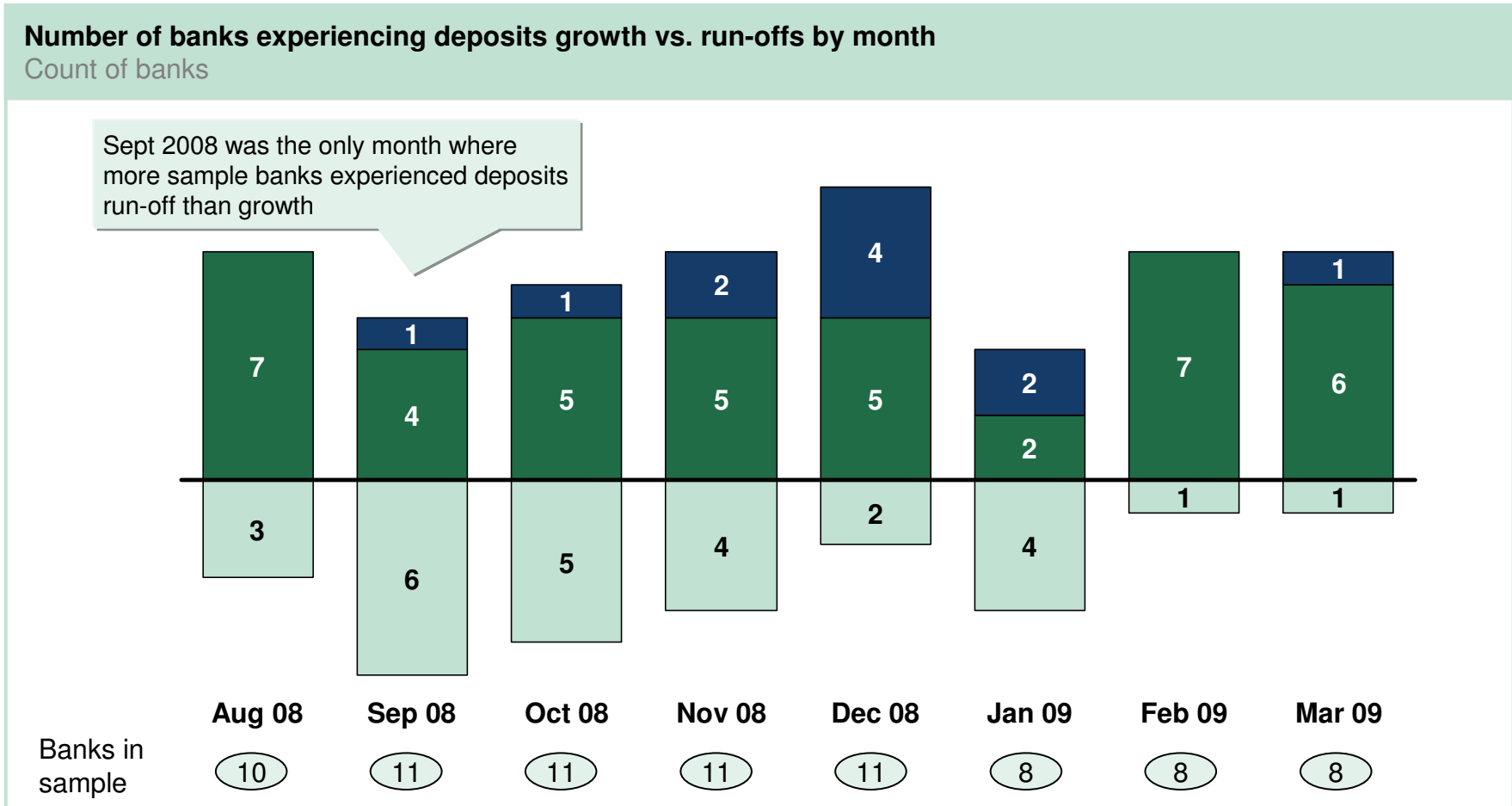
3 Includes all commitments to financial clients whether they are designated 'credit' or 'liquidity' lines

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
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As some banks experienced deposit run-offs in a given month, other banks were experiencing deposit growth

- >5% change in deposits
- 0%-5% change in deposits
- <0% change in deposits



Worst deposit run-offs by category occurred in different months across different banks

 Worst-of-the worst

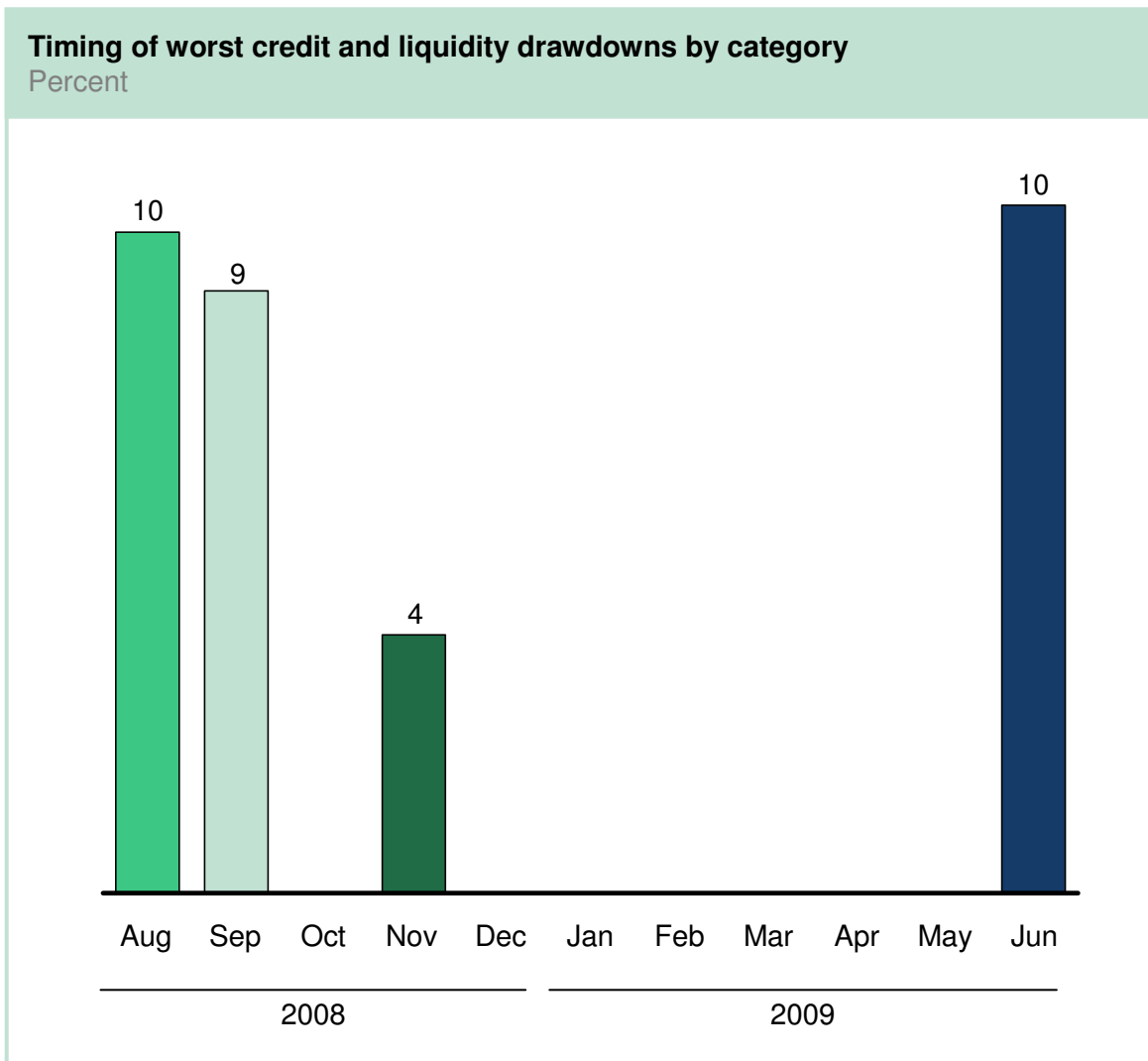
Run-off by worst bank per wholesale deposits category					
Percent					
LCR category	Sep 08	Oct 08	Nov 08	Dec 08	Worst-of-the-worst
Financial operational	5	23	20	(1)	23
Financial non-operational	38	37	8	0	38
Government operational	5	15	4	(0)	15
Government non-operational	38	15	22	60	60
Non-financial operational	3	16	16	(1)	16
Non-financial non-operational	41	15	4	14	41
Weighted average	17	22	13	4	27

5% below

- The **worst run-off** across the 6 LCR categories occurred at **4 different banks**
 - **No bank** experienced the worst run-off in **more than 2 LCR** categories
- The **worst run-off in 2 LCR categories** occurred at an **acquired bank**

Similarly, worst drawdowns for each credit and liquidity line occurred in different months, at non-failed banks

- Lines to financial institutions
- Liquidity lines
- Lines to retail clients
- Lines to non-financial corporates



- **Line draws were driven by the needs of the customer, not the solvency position of the bank**
 - “We think our customers are concerned about their own business and **profits...they’re not going to borrow money they don’t need because they think the bank might not be around.**”
 - “I’ve never understood the theory underlying **why customers would draw on lines because a bank was failing.**”

Worst C&L drawdowns by category occurred in different months across different banks

■ Worst-of-the worst

Drawdowns by worst bank per credit and liquidity lines category					
Percent					
LCR category	Sep 08	Oct 08	Nov 08	Dec 08	Worst-of-the-worst
Retail credit lines	2	2	4	4	4
Non-financial corporate credit lines	3	3	3	2	10
Financial clients' lines	3	9	2	2	9
Other liquidity lines	10	5	3	~0	10
Weighted average	3.5	3.5	2.9	2.5	8.3

Worst-of-the-worst for non-financial corporate credit lines occurred in June 2009

- The **worst drawdowns across 3 of the 4 LCR categories** occurred at **1 bank**
- **None of the worst drawdowns** occurred at **acquired banks**

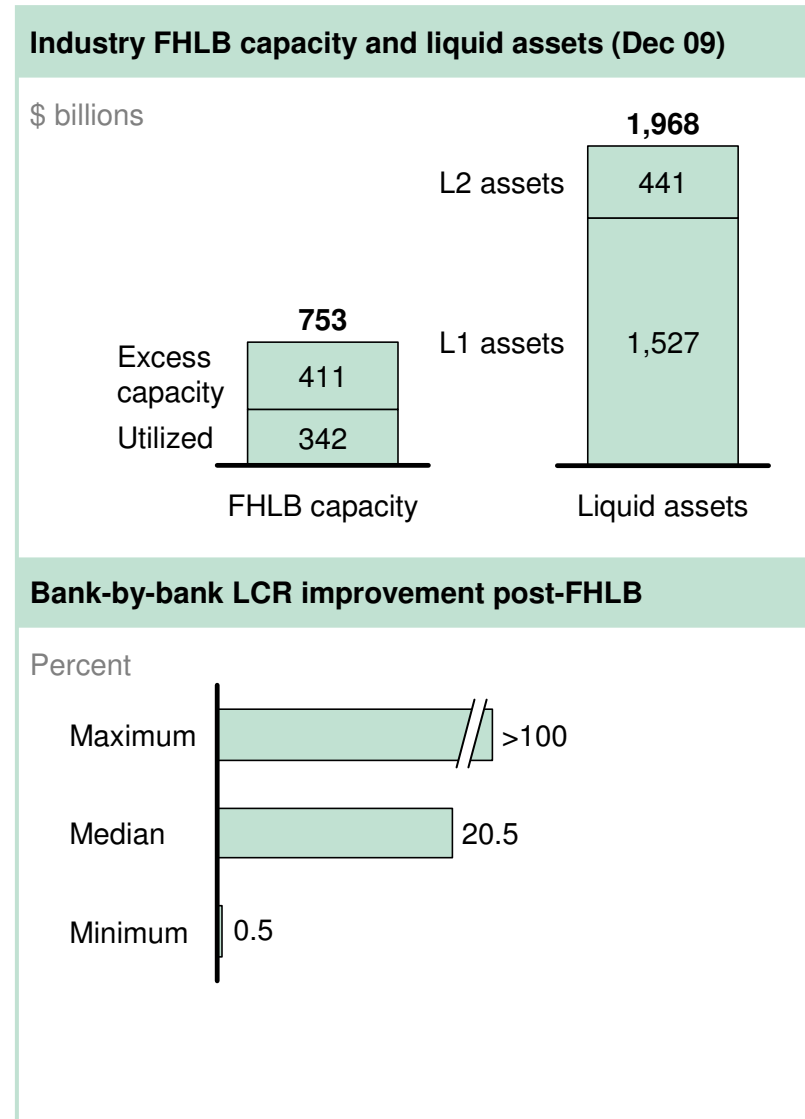
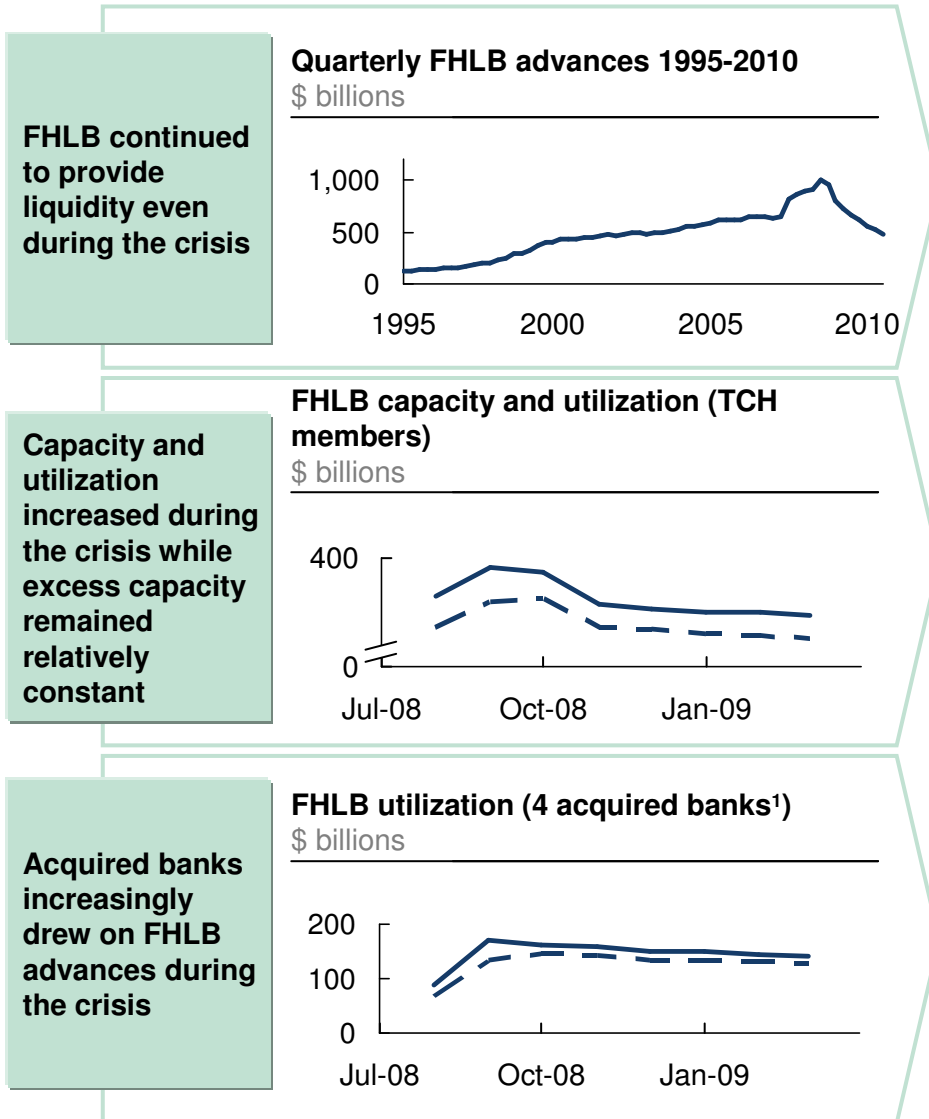
5% below

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Banks drew on FHLB capacity during the crisis, and the LCR would improve if FHLB capacity were included

— Capacity
 - - Utilization



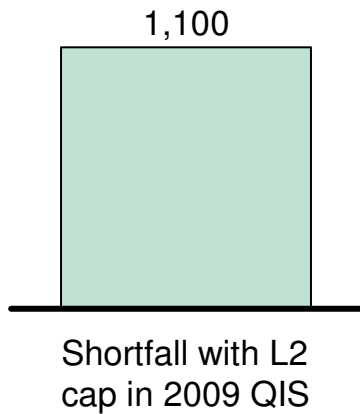
1 Last available utilization rate for acquired banks was used for post-failure or post-acquisition dates
 SOURCE: Fed Flow of Funds; TCH member banks' supplemental data; TCH member bank interviews

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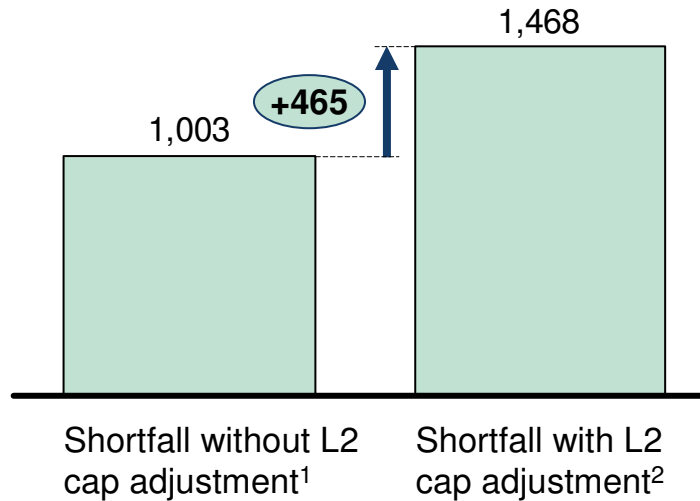
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At the industry level, the L2 cap results in a ~\$0.5T increase in the liquid asset buffer shortfall

Q4 2009 industry shortfall
Bn



Q4 2010 industry shortfall
Bn



Industry LCR

70%

77%

60%

Note: Industry numbers were estimated by scaling up based on total assets

1 Shortfall without cap calculates liquid asset buffer without any cap on L2 assets

2 Shortfall with L2 cap allows for 40% maximum L2 assets if all secured funding, secured lending and collateral swaps were completely unwound

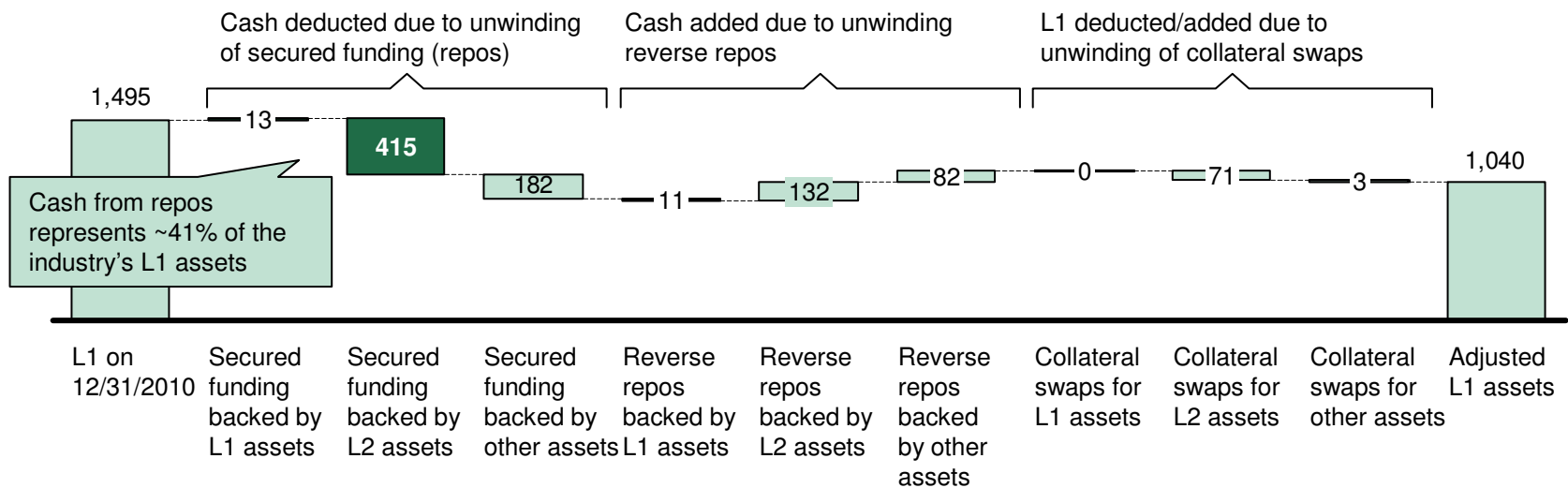
SOURCE: SNL Financial, Q4 2009 and Q4 2010 QIS from participating banks

The cap impact is driven by a decrease in L1 and an increase in L2 after unwinding of repos, reverse repos, and collateral swaps

L1 adjustment from unwinding of transactions maturing within 30 days (industry)

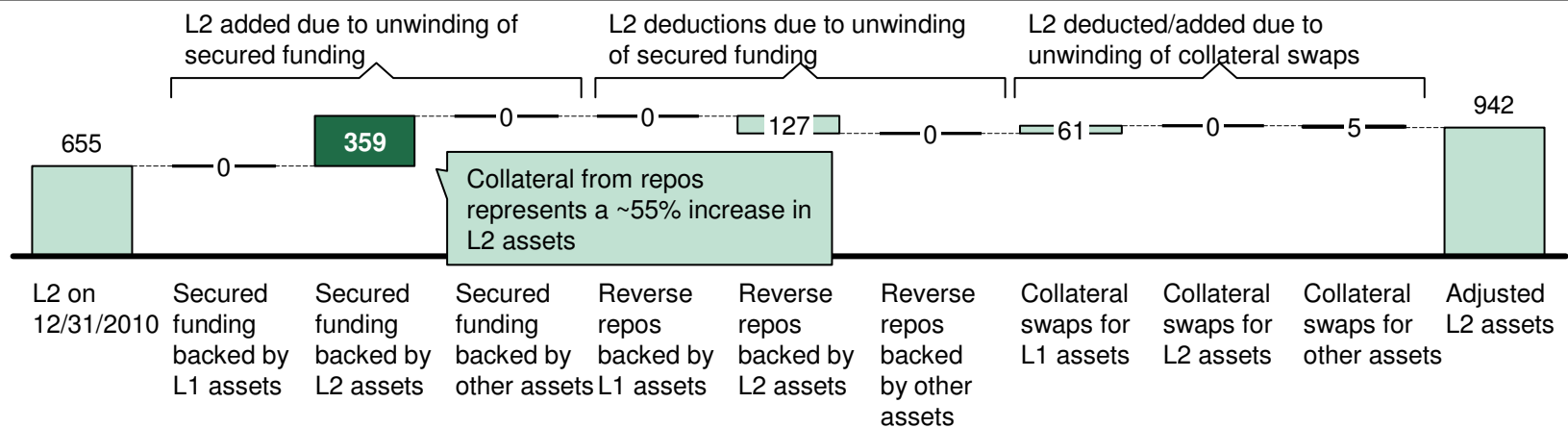
Bn

■ Primary driver of adjustment



L2 adjustment from unwinding of transactions maturing within 30 days (industry)

Bn



SOURCE: Q4 2009 and Q4 2010 QIS from participating banks

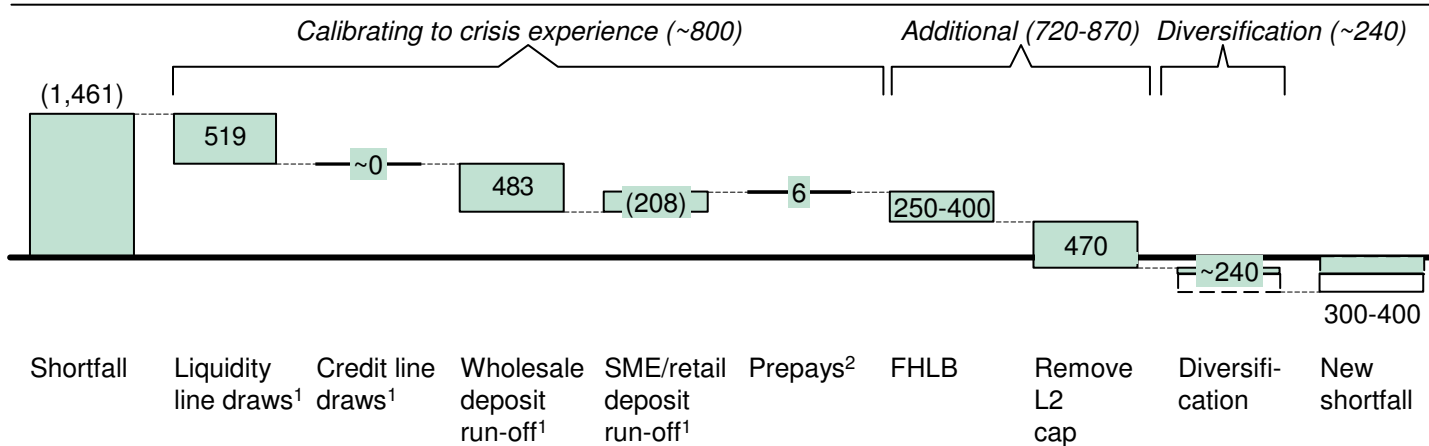
Contents

- Current industry LCR
- Calibration
- Other liquidity sources
- **Overall sensitivity analysis**
- Product and balance sheet impacts

Sensitivity analysis of LCR shortfall

U.S. industry liquid asset buffer shortfall (as of December 31, 2010)

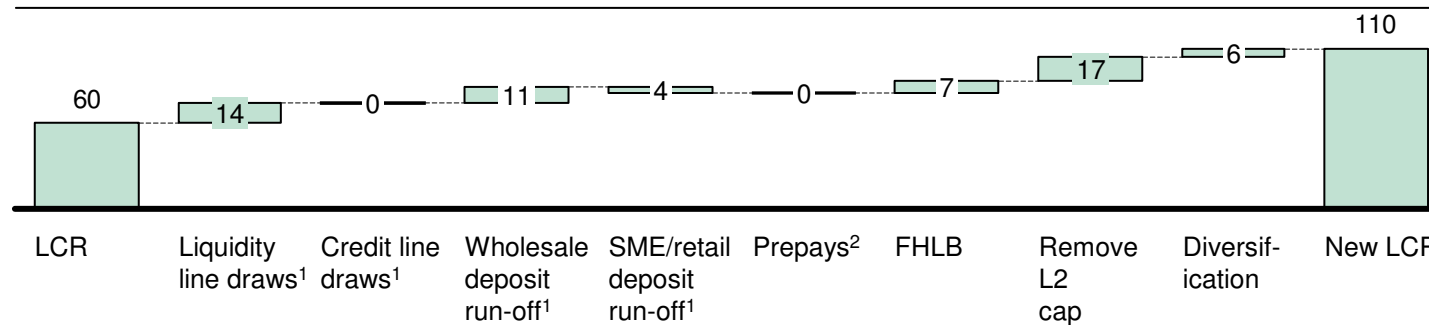
\$ billions



▪ The shortfall waterfall tracks the **shortfall reduction for the banks in our 12/31/10 QIS sample that had shortfalls, scaled up by asset size to an industry level**

Weighted average LCR ratio (as of December 31, 2010) of 9 TCH banks

Percent



1 Impact calculated by applying worst-case behavior per LCR category from any bank to all banks in place of LCR-assigned factors

2 Impact calculated by incorporating adjustment for all banks based on actual holdings/ average behavior

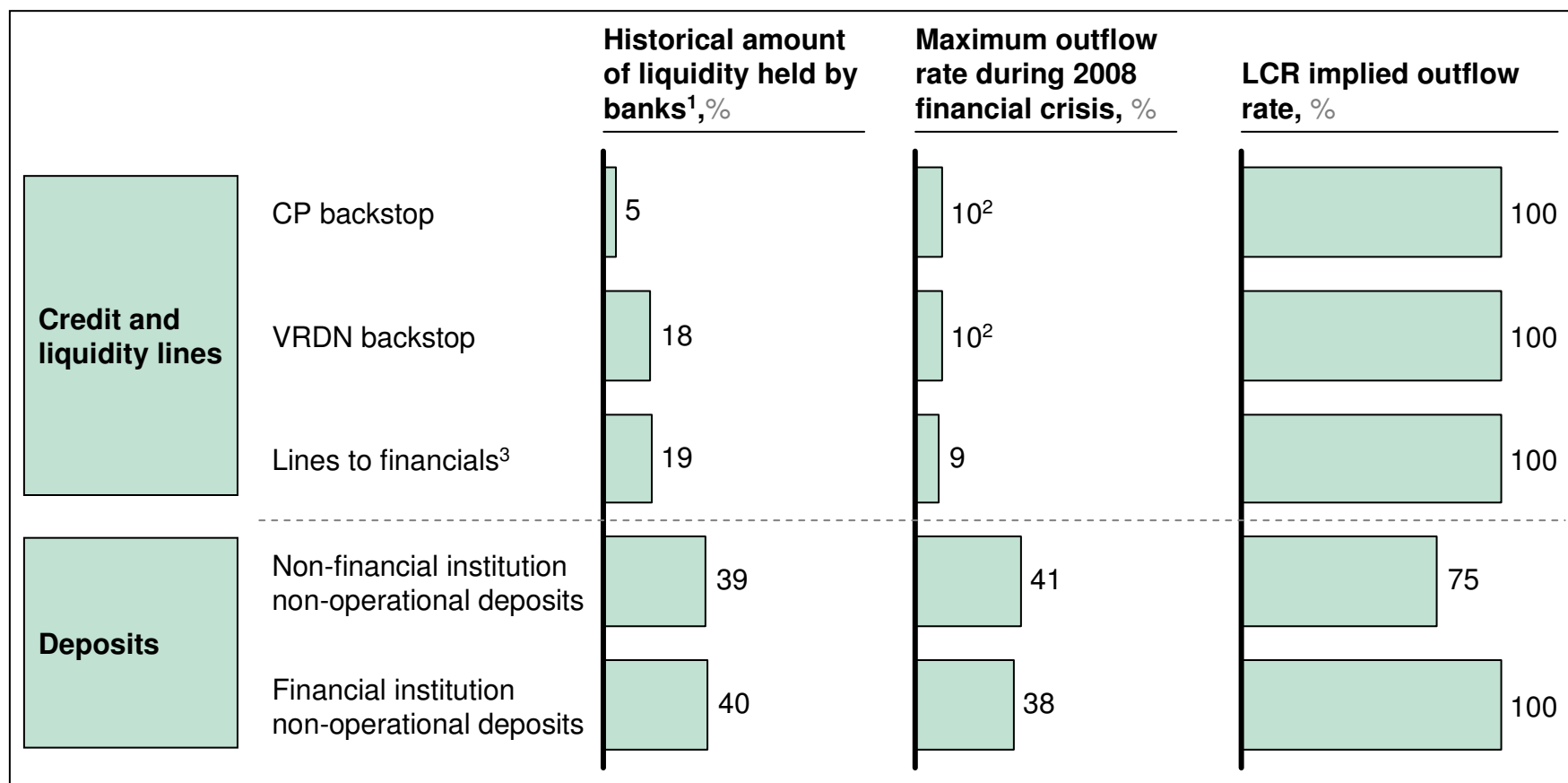
Contents

- Current industry LCR
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- **Product and balance sheet impacts**
 - Bank product impact
 - Changes to bank balance sheets

Summary of LCR liquidity cost impact to products analyzed in this study

	Product	Typical customers and investors
Higher liquidity cost impact	<ul style="list-style-type: none"> VRDN backstop CP backstop 	<ul style="list-style-type: none"> Municipalities, money market funds CP issuers (large corporates), money market funds, other investors
	<ul style="list-style-type: none"> Non-bank FI lines 	<ul style="list-style-type: none"> Sellers of assets (e.g., auto finance, credit card companies), money market funds, consumers
	<ul style="list-style-type: none"> Non-operational non-FI deposits 	<ul style="list-style-type: none"> Corporate customers
	<ul style="list-style-type: none"> Non-operational FI deposits 	<ul style="list-style-type: none"> Pension funds, insurance companies, money market funds, other financial institutions
Moderate liquidity cost impact	<ul style="list-style-type: none"> FI DDA 	<ul style="list-style-type: none"> Pension funds, insurance companies, money market funds, other financial institutions
	<ul style="list-style-type: none"> Municipal DDA 	<ul style="list-style-type: none"> Municipalities
Lower liquidity cost impact	<ul style="list-style-type: none"> Corporate DDA 	<ul style="list-style-type: none"> Corporates
	<ul style="list-style-type: none"> SME credit line 	<ul style="list-style-type: none"> SMEs
	<ul style="list-style-type: none"> HELOC 	<ul style="list-style-type: none"> Consumers
	<ul style="list-style-type: none"> Corporate credit BBB-rated and A- rated 	<ul style="list-style-type: none"> Corporates
	<ul style="list-style-type: none"> Corporate sweep account 	<ul style="list-style-type: none"> Corporates
	<ul style="list-style-type: none"> Municipal CD 	<ul style="list-style-type: none"> Municipalities
	<ul style="list-style-type: none"> FI sweep account 	<ul style="list-style-type: none"> Pension funds, insurance companies, money market funds, other financial institutions
	<ul style="list-style-type: none"> Consumer credit cards 	<ul style="list-style-type: none"> Consumers

LCR factors for liquidity lines and non-operational deposits are higher than banks' internal models and historical values from the crisis



1 Simple averages used from banks who provided this data

2 Using data for non-financial institution liquidity line draws, i.e., combines both CP and VRDN backstop draws

3 Includes all committed facilities to financial clients, whether designated as credit or liquidity

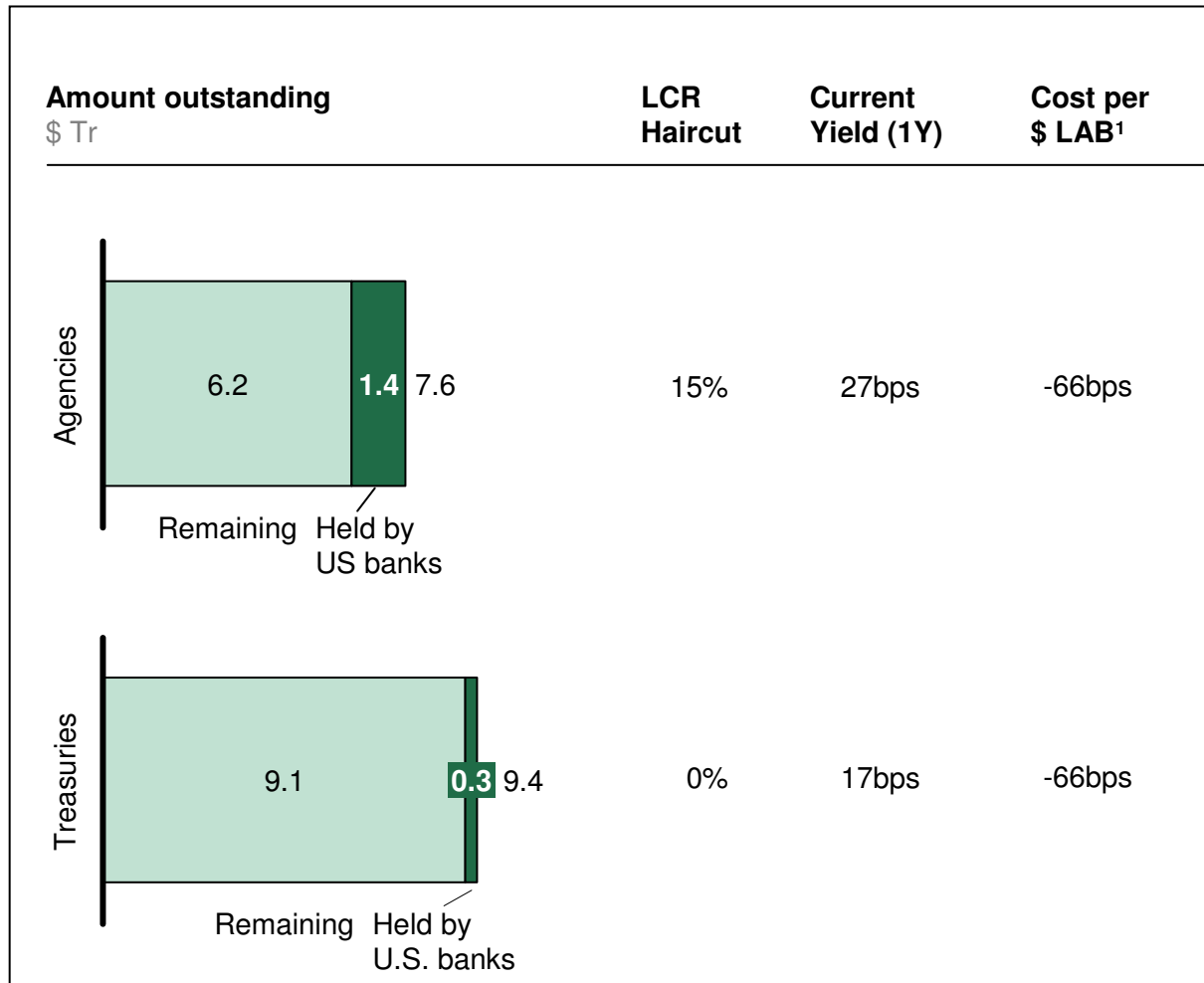
SOURCE: TCH member banks' supplemental data, BCBS Basel III liquidity framework

There are a range of approaches open to banks for meeting the LCR

		Implication for markets	Impact for bank	
1	Increase liquid asset buffer	Changing mix of L1/L2	<ul style="list-style-type: none"> Decline in NIMs for industry Increased volatility in Accumulated Other Comprehensive Income, leading to additional capital cushion <ul style="list-style-type: none"> Securities held as Available for Sale may increase volatility of capital and require additional cushion 	
		Increase in liquid asset buffer		<ul style="list-style-type: none"> In the short run, increased debt issuance from banks In the long run, potential for lower proportion of bank balance sheets available for lending Increased demand for L1s (~1.0 Tr) Potential for decreased demand for agencies (given current L2 treatment)
2	Decrease outflows	Increase term of lending and secured funding	<ul style="list-style-type: none"> Increased cost of funds Potential increased cost for operational deposits 	
		Expand retail and operational deposit base		<ul style="list-style-type: none"> Increased long-term bank issuance in capital markets Increased emphasis on operational deposits with decreased emphasis on non-operational deposits
		Decrease commitments with 100% draw-down		<ul style="list-style-type: none"> Reduced availability of facilities that support liquidity

SOURCE: TCH member bank treasurer interviews

1 Banks may reduce their holdings of Agencies due to the haircut and cap treatment of L2 assets

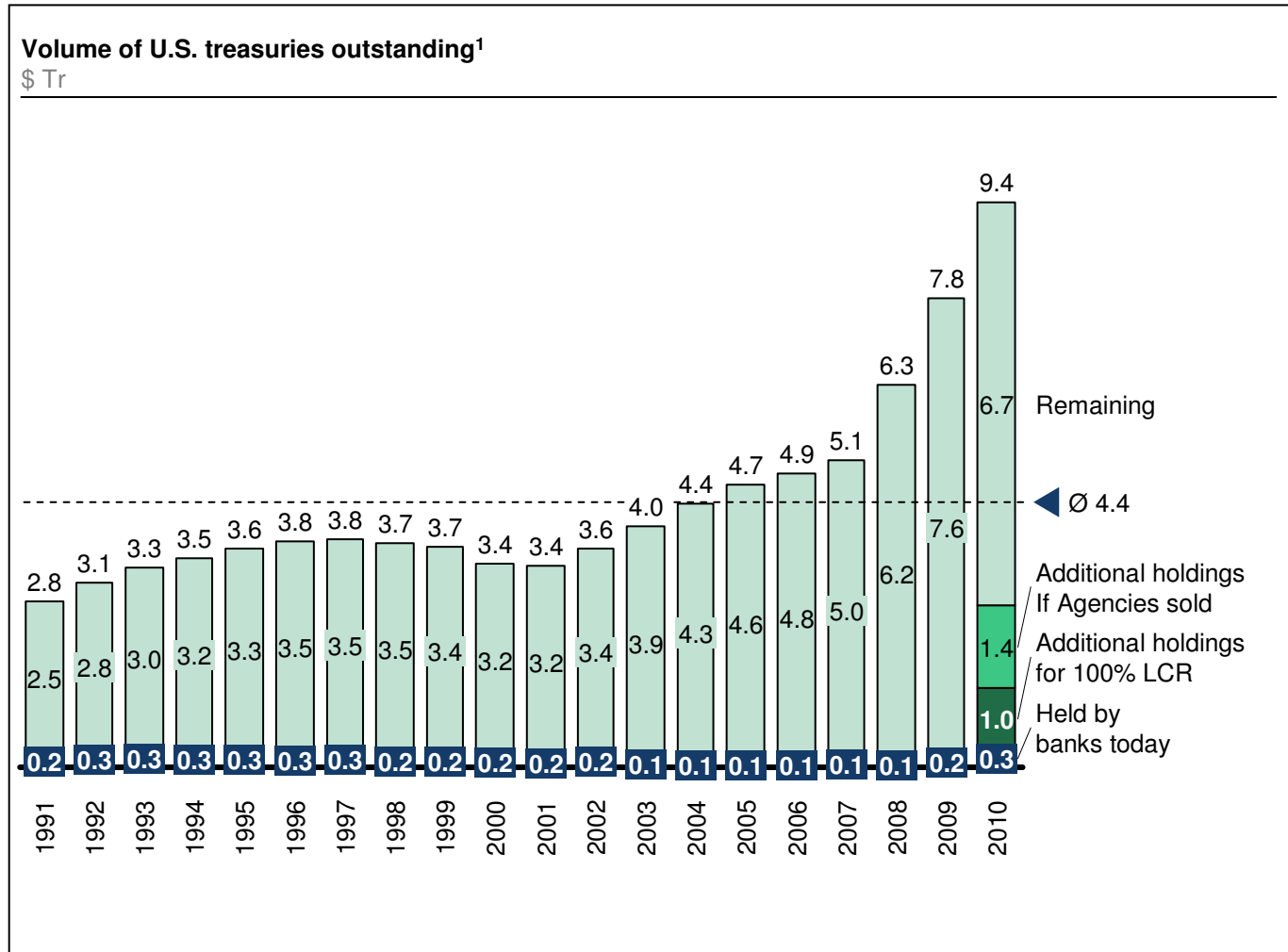


- **Based on current yields, banks have little incentive to hold agencies after the LCR:**
 - The 15% haircut on Agencies decreases their utility for the liquid asset buffer
 - The L2 cap further disadvantages Agencies
 - Depending on a bank’s liquid asset buffer composition, selling Agencies and buying Treasuries may be necessary to comply with LCR requirements

- **However, some banks may continue to hold some Agencies:**
 - If yield spreads between agencies and Treasuries widen, Agencies could become more attractive despite the L2 cap and haircut
 - Banks with lower cost of funds will be less impacted by the haircut and might be able to take advantage of higher agency yields

¹ Cost per \$LAB is calculated by (Asset Yield – Cost of Funds) / (100% - Haircut), cost of funds set at 83 bps

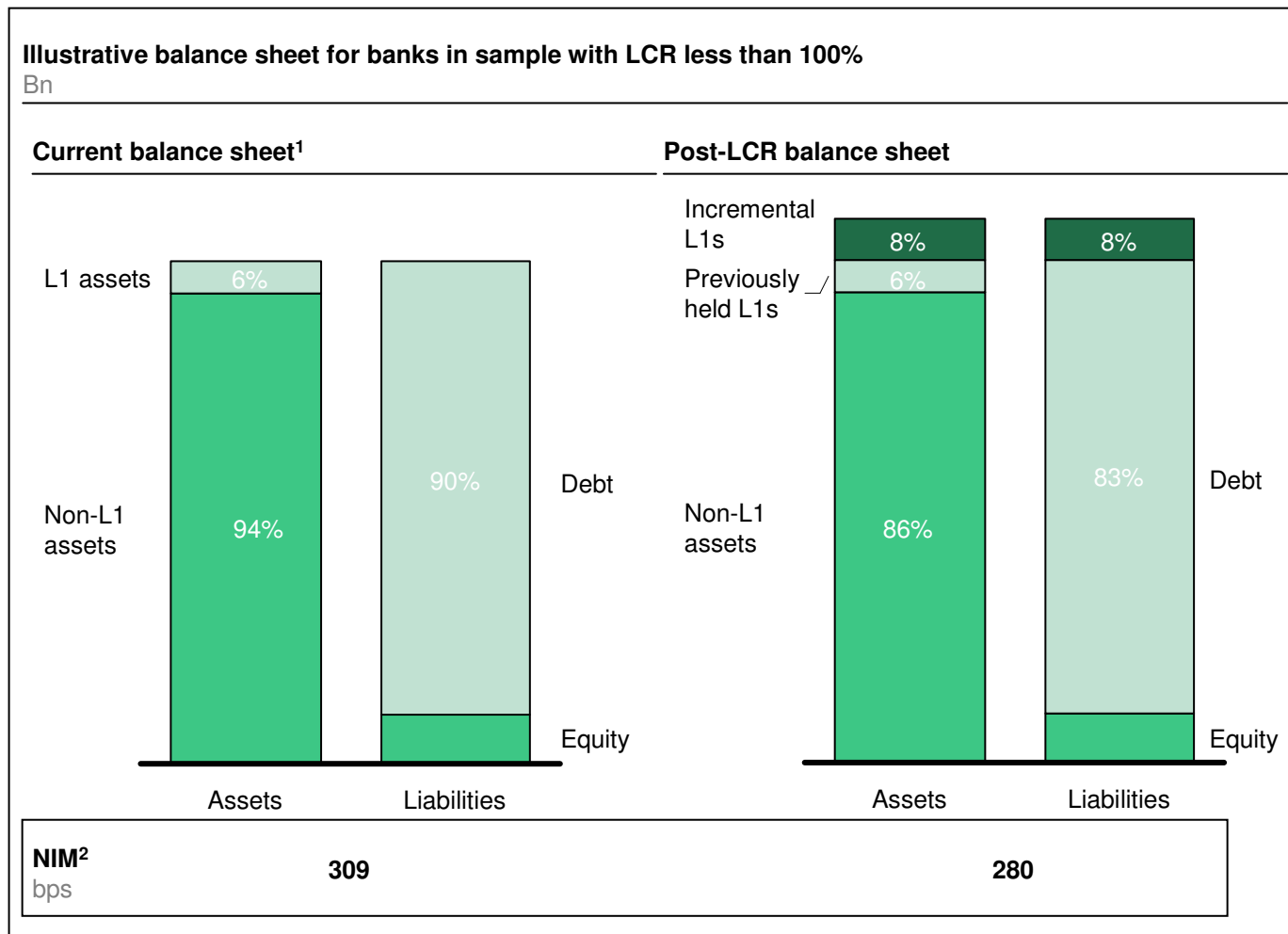
1 Banks would need to hold ~14% of total U.S. Treasuries outstanding to meet the LCR solely through increasing Treasury holdings



- To meet the LCR shortfall by buying L1 assets, banks would need to **increase their Treasury holdings from 3.2% of total outstanding treasuries to 14.0%**
- If banks determine that holding agencies are less attractive than Treasuries after the LCR, **banks could hold up to a maximum of 28.0% of total outstanding Treasuries if they start exchanging their Agency holdings for Treasuries**
- If the volume of Treasury outstandings return to more historical levels (e.g., \$4-5Tr), banks could hold an even larger share of US government debt

¹ Money market funds hold \$335.4 bn of treasuries; non-money market mutual funds hold \$297.4 bn of treasuries

1 If banks expanded their balance sheet to meet the LCR, NIMs would decline by ~30 bps for banks in the sample



- Banks have indicated they are likely to meet the LCR by growing the balance sheet
- Assuming this expansion, NII would decline by \$4.3 bn and NIM would decline by ~30 bps

1 Includes sample banks with LCR < 100%, based on Q4 2010 QIS submission

2 Post-LCR calculation assumes a 79 bps cost of carry on L1 assets, calculated as the spread to treasuries of multiple issues of term bank debt (3m, 6m, 1yr, 3yr, 5yr and 10yr); NII changes from \$203 bn to \$199 bn