

# Making Banks Safe to Fail: Ten Years Later

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# Outline

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## Too Big (Systemic) to Fail Problem

- **What is it?**
- Economics of Bailouts
- What's Wrong with Bailouts?
- Potential Solutions to the TBTF Problem

## Making Banks Safe to Fail

- What Makes the Banking System Vulnerable to Contagion?
- What has Changed Since 2008?
- SPOE Resolution Strategy
- Making SPOE Operational

## What Is it?

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- The too-big-to-fail problem arises if government officials believe they cannot allow one or more banks to fail without risking panics, runs and contagion throughout the banking system.
  - Such contagion would almost certainly result in a severe contraction in the supply of money and credit (i.e., a collapse of the banking system).
  - Such a contraction could result in serious, long-term harm to the wider economy, including a sharp drop in capital market prices and real estate values, a severe contraction in economic output, a spike in unemployment and quite possibly political instability, riots, authoritarianism and even war.
- Such a situation presents a dilemma to government officials: allow the bank (or banks) to fail or use public funds to bail it (them) out.

## Economics of Bailouts

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- Faced with a choice between the potential collapse of the banking system if one or more banks are allowed to fail and bailing out the bank(s), most government officials have chosen and will almost certainly in the future choose bailout as the lesser of two evils, regardless of their political leaning.
- In essence, potential costs of bailout, while substantial, are expected to be materially less than the potential social costs of allowing the bank(s) to fail.
  - The economic literature shows that fire sales do not merely result in a transfer of value from losers to winners, but a deadweight loss on society by misallocating assets from higher- to lower-valued users.

## What's Wrong With Bailouts?

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- Moral Hazard
  - Bailouts foster moral hazard by insulating shareholders and bondholders against losses.
  - If shareholders are insulated against losses, they will allow or even encourage their banks to take greater risks in order to increase the probability of greater returns.
  - If bondholders are insulated against losses, they will not monitor their banks as efficiently as they would if they bore the full risk of their investments.
- Unfair
  - Bailouts are also unfair to the shareholders and bondholders of smaller, less complex banks, which are not insulated against losses.

# Potential Solutions to the TBTF Problem

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- Ex-Ante Solutions: Reduce the Probability of Failure
  - Higher Capital and Liquidity Requirements
  - Activity Limits: Volcker Rule, Glass-Steagall Act, Ban on Fractional Reserve Banking, Narrow Banking, etc.
  - Break-up and Maximum Cap on Asset Size
    - E.g., Simon Johnson: 4% of GDP  $\approx$  \$570 bn in assets
- Ex-Post Solutions: Reduce the Consequences Given Failure
  - Recovery and Resolution Planning
  - SPOE Resolution Strategies
  - Sufficient TLAC to Make SPOE Feasible
  - Early Resolution Triggers Based on RCEN / RLEN Projections

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# What Makes the Banking System Vulnerable to Contagion?

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**“Lombard Street [the modern banking system] is by far the greatest combination of economical power and economical delicacy the world has ever seen.”**

– Walter Bagehot, *Lombard Street : A Description of the Money Market* (1873)

- **Lombard Street = Fractional Reserve Deposit Banking = Maturity / Liquidity Transformation**
  - Taking demand deposits (i.e., borrowing cash from depositors in return for legally binding promises to repay the same amount in cash on demand) to invest in
  - A pool of assets in the form of a fractional reserve of cash (e.g., 10% of the bank’s demand deposit liabilities) and the rest in the form of long-term loans or other illiquid assets
- Fractional reserve deposit banking is invariably combined with:
  - **Maturity transformation** which transforms long-term assets into demand deposit money
  - **Liquidity transformation** which transforms illiquid assets into demand deposit money



# What Makes the Banking System Vulnerable to Contagion?

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- **Maturity / Liquidity Transformation** is one of the principal ways in which the modern banking system provides social value to the wider economy
  - Maturity / liquidity transformation is the process by which the modern commercial banking system provides a flow of money and credit to the wider economy that can be many times the amount of money issued by central banks
  - The flow of credit produced by this process fuels economic growth and jobs creation by providing a stable source of funding at a reasonable cost to entrepreneurs who otherwise would not have sufficient capital at a reasonable cost to fund their long-term projects
  - It allows anyone with a great innovation (e.g., the assembly line, the microcomputer, the smartphone) to create attractive new jobs and compete effectively
  - Without a healthy flow of money and credit, our modern economy would stop growing, shrink or even screech to a halt

# What Makes the Banking System Vulnerable to Contagion?

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- **However, Maturity / Liquidity Transformation** makes the banking system vulnerable to runs and contagion.

**“Contagion . . . is an indiscriminate run by short-term creditors of financial institutions that can render otherwise solvent institutions insolvent due to the fire sale of assets that are necessary to fund withdrawals and the resulting decline in asset prices triggered by such sales.”**

– Hal S. Scott, *Connectedness and Contagion* (2016)

- A **common shock**, such as the unexpected nationwide drop in real estate prices in 2007 and 2008, can spark fear of widespread bank failures.
  - Potential for:
    - Widespread panic and contagion
    - Sudden and violent contraction in the supply of money and credit
    - Severe long-term economic recession or depression
  - A **bailout** is the lesser of two evils if **a credible resolution strategy** is not available and the alternative would be a potential collapse of the financial system
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# What Has Changed Since 2008?

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- **Credible Resolution Strategy**

- Recapitalization and continuation or orderly wind-down of material operations using “single-point-of-entry” resolution strategy

- **Resolution Readiness**

- Increased capital
- Increased usable TLAC
- Increased liquidity
- Ability to prevent mass terminations of QFCs
- Secured support agreements to recapitalize subsidiaries
- Timely bankruptcy / resolution triggers
- Advance recovery and resolution planning
- Coordination and cooperation with foreign regulators

# What Has Changed Since 2008?

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- **Key Features of SPOE Resolution Strategy**

- Developed for G-SIBs, but adaptable to other systemically important financial groups
- Only top-tier parent of a U.S. G-SIB is put into a bankruptcy or resolution proceeding
- All material operating subsidiaries are recapitalized, stabilized and kept out of their own bankruptcy / resolution proceedings
- Preserves systemically critical operations
- Material operating subsidiaries are sold, wound down in an orderly fashion or continued as part of a smaller, simpler group

- **Evolution**

- Originally developed by the FDIC under OLA, with input from the Federal Reserve and the private sector
- Adapted to work under existing Chapter 11 of the Bankruptcy Code, with workarounds
- Proposed Chapter 14 version 2.0 (e.g., FIBA) would facilitate SPOE under the Bankruptcy Code

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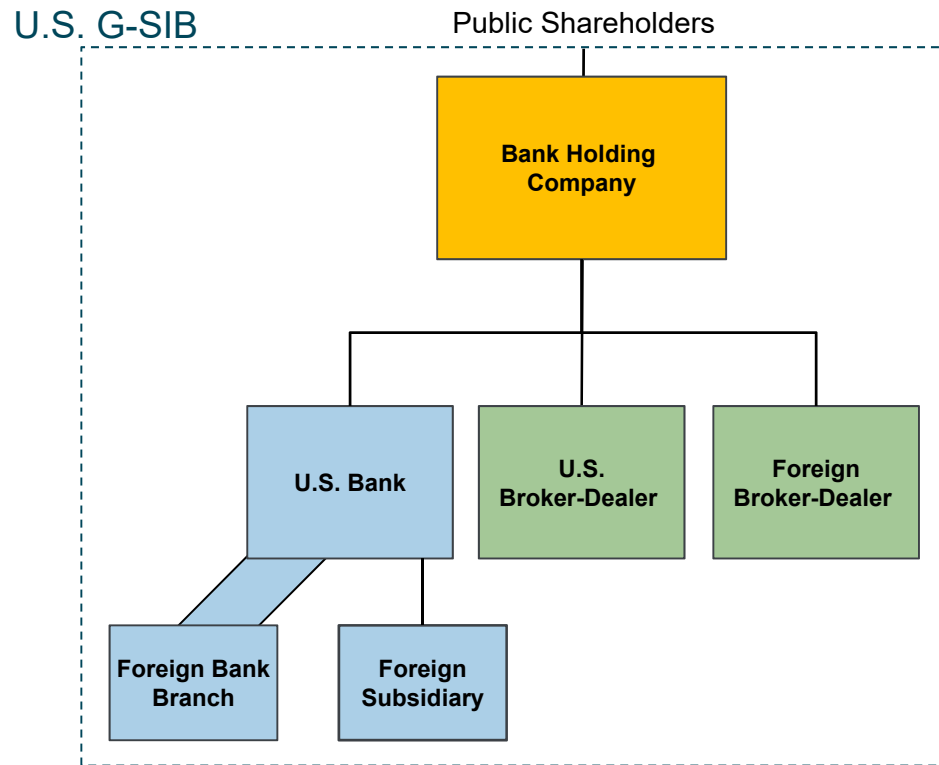
## Too Big (Systemic) to Fail Problem

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- **SPOE Resolution Strategy**
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# Step 1: Hypothetical U.S. G-SIB Structure Before Failure



**Note:** This is a hypothetical and greatly simplified U.S. G-SIB structure. The location of various legal entities, including whether they are in a separate legal chain or in a chain with a domestic insured bank, varies from group to group. Asset management entities are not shown.

# Step 1: Hypothetical U.S. G-SIB Structure Before Failure

Top-Tier BHC Stand-alone Balance Sheet (\$bn)\*

Assets		Liabilities	
Cash and Other HQLAs	25	Unsecured long-term debt (external TLAC debt)	100
BHC Deposits in U.S. Bank	35		
Advances to U.S. Broker-Dealer	15		
Advances to Foreign Broker-Dealer	10		
Equity of U.S. Bank	75	Unsecured short-term debt	0
Equity of U.S. Broker-Dealer	15		
Equity of Foreign Broker-Dealer	10		
Other Assets	15		
		<b>Equity</b>	<b>100</b>
<b>Total</b>	<b>200</b>	<b>Total</b>	<b>200</b>

These BHC assets can be used to recapitalize and provide liquidity to OpCos after the onset of financial distress

External TLAC

\* The figures used in this SPOE hypothetical are meant to be illustrative only.

**Note:** This is a BHC stand-alone balance sheet, which shows only BHC investments in OpCos, and not the OpCos' assets and liabilities. A consolidated balance sheet would show that the firm has \$850bn – \$1tn in assets.



# Step 2: Hypothetical Losses Resulting in Failure

**Losses in Subs (\$bn)**

**U.S. Bank: \$40 Loss**

- \$35 Remaining Equity

**U.S. Broker-Dealer: \$5 Loss**

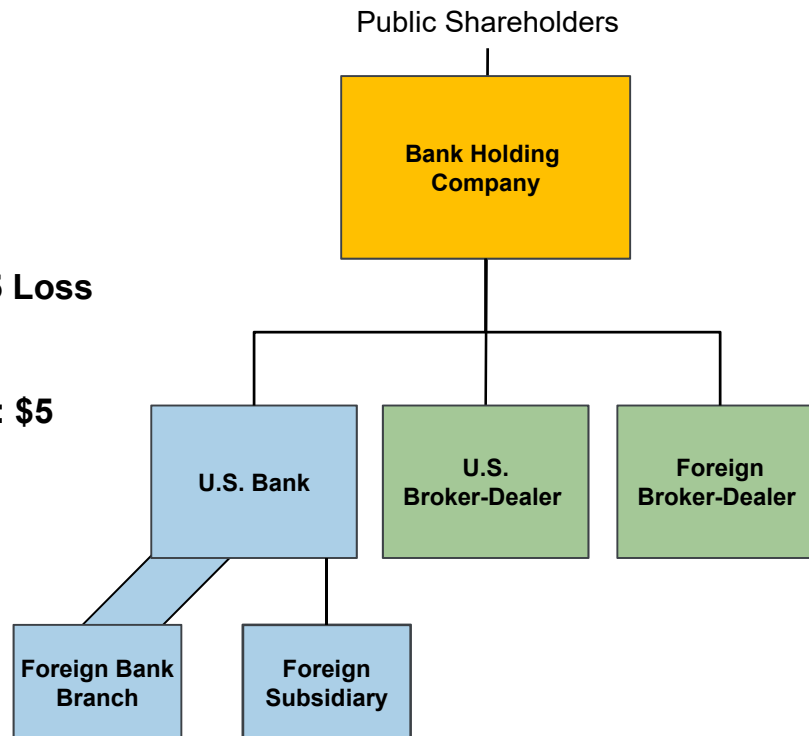
- \$10 Remaining Equity

**Foreign Broker-Dealer: \$5 Loss**

- \$5 Remaining Equity

**Total Losses: \$50 bn**

**Remaining BHC Equity: \$50 bn**



# Step 2: Hypothetical Losses Resulting in Failure

Top-Tier BHC Stand-alone Balance Sheet After Losses and Before Recapitalization (\$bn)

Assets		Liabilities	
Cash and Other HQLAs	25	Unsecured long-term debt	100
BHC Deposits in U.S. Bank	35		
Advances to U.S. Broker-Dealer	15		
Advances to Foreign Broker-Dealer	10		
Equity of U.S. Bank	75→ <b>35</b>	Unsecured short-term debt	0
Equity of U.S. Broker-Dealer	15→ <b>10</b>		
Equity of Foreign Broker-Dealer	10→ <b>5</b>		
Other Assets	15		
		<b>Equity</b>	<b>100→50</b>
<b>Total</b>	<b>200→150</b>	<b>Total</b>	<b>200→150</b>

# Step 3: OpCos Recapitalized Prior to Bankruptcy / OLA Proceeding\*

Top-Tier BHC Stand-alone Balance Sheet After Recapitalization Actions (\$bn)

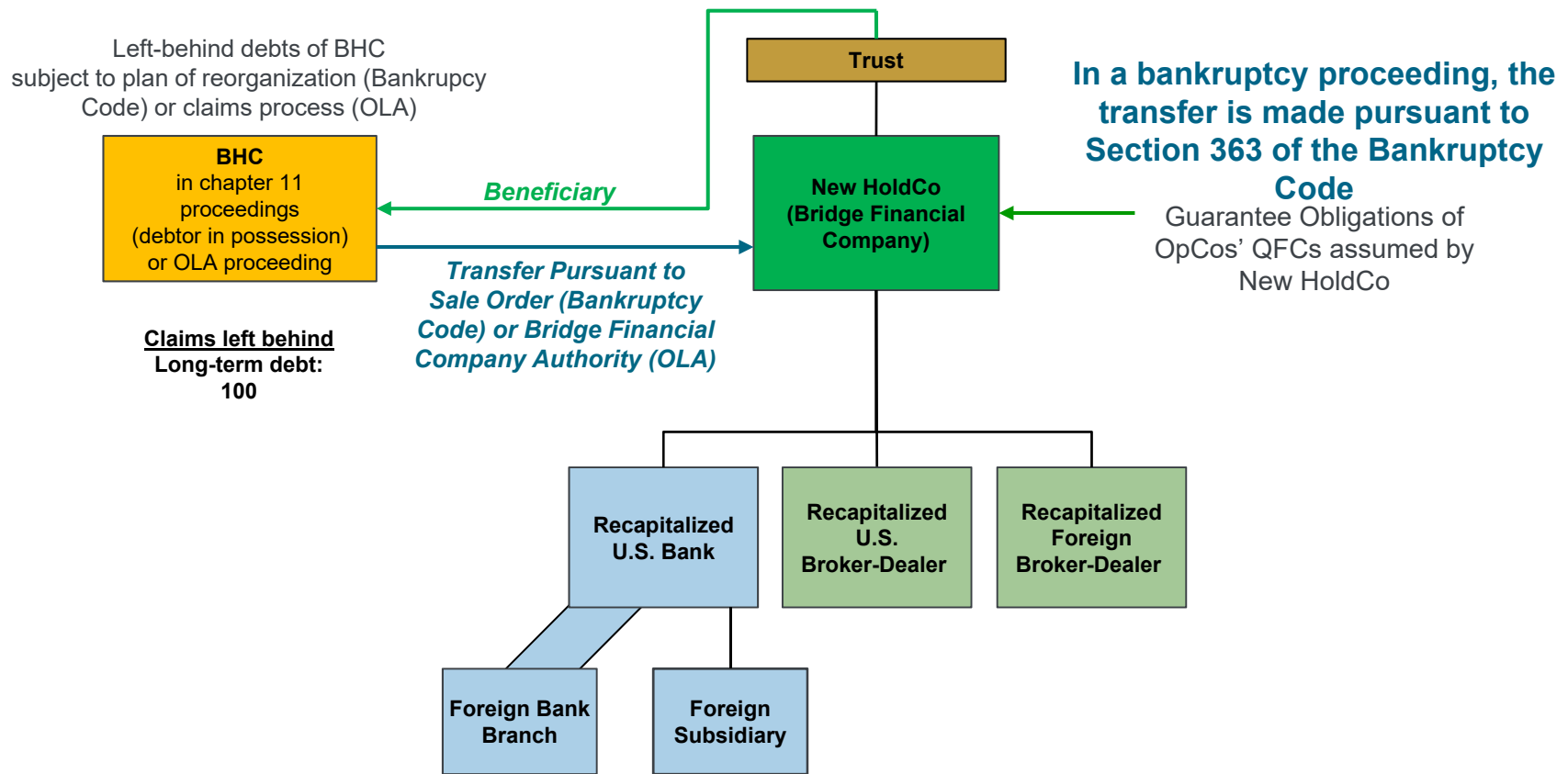
Contributions of capital and liquidity to OpCos must be structured to be resilient against avoidance and other legal challenges in BHC bankruptcy or OLA proceedings.

Assets		Liabilities	
Cash and Other HQLAs	25→2	Unsecured long-term debt	100
BHC Deposits in U.S. Bank	35→0		
Advances to U.S. Broker-Dealer	15→0		
Advances to Foreign Broker-Dealer	10→0		
Equity of Bank	35→93	Unsecured short-term debt	0
Equity of U.S. Broker-Dealer	10→25		
Equity of Foreign Broker-Dealer	5→15		
Other Assets	15		
		<b>Equity</b>	<b>50</b>
<b>Total</b>	<b>150</b>	<b>Total</b>	<b>150</b>

\* Recapitalization of a U.S. G-SIB's operating subsidiaries must occur before the commencement of a bankruptcy proceeding under existing law. It can occur either before or after the FDIC is appointed as receiver of a covered company in an OLA proceeding because of various provisions in OLA that deal with potential creditor challenges.

# Step 4: Transfer of OpCos to New HoldCo / Bridge

Recapitalized OpCos are transferred to either a New HoldCo (Bankruptcy Code) or Bridge Financial Company (OLA) owned by the Resolution Trust for the benefit of BHC's bankruptcy estate (Bankruptcy Code) or receivership (OLA)



# Step 4: Transfer of OpCos to New HoldCo / Bridge

Only some of the BHC's liquid resources are transferred to New HoldCo / Bridge; the remainder is left behind in the BHC to cover Chapter 11 / OLA administrative expenses (not shown here). This is balance sheet for New HoldCo / Bridge. As adjusted, \$1 billion is transferred to New HoldCo / Bridge, and \$1 billion is left behind in the BHC's bankruptcy estate / OLA receivership.

**New HoldCo / Bridge Financial Company Stand-alone Balance Sheet (\$bn)**

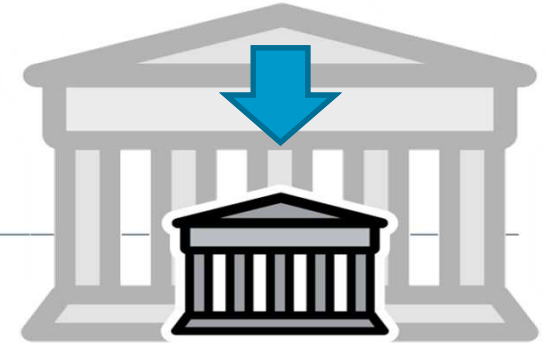
Assets		Liabilities	
Cash and Other HQLAs	1	Unsecured long-term debt	0
Equity of U.S. Bank	93	Unsecured short-term debt	0
Equity of U.S. Broker-Dealer	25		
Equity of Foreign Broker-Dealer	15		
Other Assets	15		
		Equity	149
<b>Total</b>	<b>149</b>	<b>Total</b>	<b>149</b>

**Capital Levels of recapitalized OpCos and New HoldCo / Bridge Financial Company exceed pre-loss levels to facilitate stabilization\***

\* The New HoldCo / Bridge Financial Company will be required to comply with capital requirements generally applicable to fully capitalized and open bank holding companies.

## SPOE RESOLUTION STRATEGY

# Size of Remaining Operations Significantly Reduced



## U.S. G-SIBs Title I Resolution Plans—Public Section Description of Post-Resolution Firm

Bank of America – SPOE	BNY Mellon – SPOE	Citigroup – SPOE	Goldman Sachs – SPOE (except 2 OpCos)
<ul style="list-style-type: none"> <li>• ~70% reduction in overall assets,</li> <li>• Reduction of product offerings, global footprint and customers</li> <li>• Wind down, sale or simplification of certain business lines</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Discrete businesses disposed</b> of through combination of strategic sales, wind-downs, or transfers</li> <li>• Remaining assets, likely to consist of a fee-based operational services firm, consisting of business built around the custody business, taken public through IPO</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Banking businesses divested;</b> each divested business is significantly smaller and less systemically important</li> <li>• <b>Broker-dealers</b> subject to <b>solvent wind-down</b> through sale or run-off</li> </ul>	<ul style="list-style-type: none"> <li>• Firm would <b>cease to exist</b> post-resolution; all assets would be sold or unwound</li> <li>• Only surviving businesses would be asset management, private wealth management, merchant banking businesses, special situations group, and commodities, which would have been sold</li> </ul>
JPMorgan – SPOE	Morgan Stanley – SPOE	State Street – SPOE	Wells Fargo – FDIC Receivership / Bridge Bank
<ul style="list-style-type: none"> <li>• <b>~ 40% reduction in main bank</b> assets (including branches)</li> <li>• <b>~ 80% reduction in broker-dealer</b> assets; none would be systemically important</li> <li>• ¼ lines of business and 8/21 sub-lines of business eliminated</li> <li>• 72% reduction in total assets in foreign subs and branches</li> </ul>	<ul style="list-style-type: none"> <li>• Firm would cease to exist post-resolution</li> <li>• Sale or wind down of all businesses and material entities</li> </ul>	<ul style="list-style-type: none"> <li>• Firm’s size and operational footprint may shrink further due to the potential sale of divestiture options</li> </ul>	<ul style="list-style-type: none"> <li>• Sales of asset portfolios and business lines, in addition to sales of six regional portfolios</li> <li>• IPO of surviving regional bank</li> <li>• In late 2017, Wells Fargo publicly announced it would move to SPOE</li> </ul>

Source: Public Sections of 2017 Title I Resolution Plans

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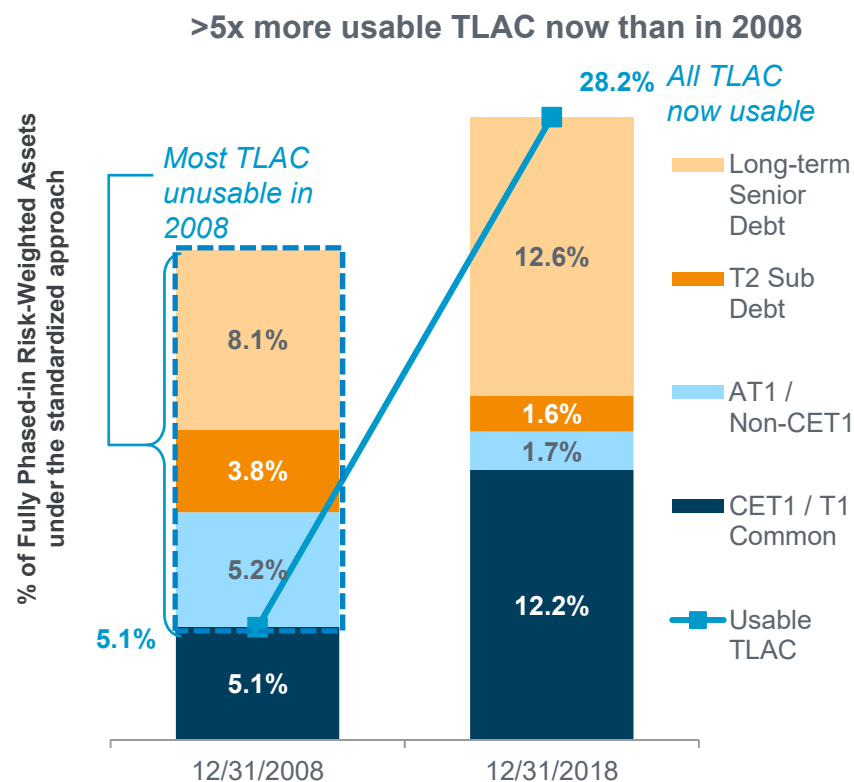
# Prerequisites

Prerequisite	Resolution Readiness Feature(s)
<p>1. <b>Sufficiency of Resources in Resolution</b></p>	<ul style="list-style-type: none"> <li>• Capital and liquidity resources higher at the onset of material financial distress</li> <li>• <b>Usable External TLAC</b> Debt or Equity (GLAC portion corresponds to contributable assets)</li> <li>• Internal TLAC Debt or Equity (corresponds to prepositioned assets, including liquid assets)</li> <li>• BHC bankruptcy or resolution proceeding must be commenced while capital and liquidity resources remain sufficient for SPOE resolution strategy (governance triggers)</li> </ul>
<p>2. <b>No QFC Closeouts</b></p>	<ul style="list-style-type: none"> <li>• Contractual waiver of QFC closeout rights conditioned upon timely approval of emergency motion (see below)</li> </ul>
<p>3. <b>Resilience of Opco Support to Legal Challenges</b></p>	<ul style="list-style-type: none"> <li>• <b>Secured support agreement</b> to provide capital and liquidity to support OpCos</li> <li>• Security interest in contributable assets securing Support Agreement</li> <li>• Prior notice / disclosure of structural changes and resolution strategy</li> </ul>
<p>4. <b>Triggers Based on Projected Capital and Liquidity Needs</b></p>	<ul style="list-style-type: none"> <li>• Bankruptcy / resolution <b>triggers based on projected capital and liquidity needs</b> rather than balance-sheet insolvency or even traditional balance-sheet liquidity triggers</li> <li>• Preservation of value for the estate / receivership</li> <li>• No need to immediately value consideration received</li> <li>• Mitigation of systemic risk</li> <li>• Performance of QFCs by OpCos</li> </ul>
<p>5. <b>Foreign Regulator Cooperation</b></p>	<ul style="list-style-type: none"> <li>• Meeting or exceeding applicable regulatory capital requirements at all times</li> <li>• Conservative assumptions about inter-affiliate transactions during the reorganization period</li> </ul>



# External TLAC: Today vs. 2008

U.S. G-SIBs have > 5X Usable TLAC Compared to 2008



- **TLAC** consists of **equity** plus **long-term unsecured debt** that can be converted to common equity in bankruptcy
- U.S. G-SIBs now have >5 times more usable TLAC
- In 2008, long-term senior debt not usable without imposing losses pro rata on short-term senior debt (e.g., commercial paper)
- Subordinated debt and non-CET1 were considered unusable in 2008 because of market confusion about loss waterfall
- U.S. G-SIBs have restructured themselves to make all external unsecured long-term debt at top-tier parent level structurally or contractually junior to all external short-term debt
- Enough long-term debt (senior + subordinate) to recapitalize U.S. G-SIBs at full Basel III capital levels under conditions twice as severe as 2008

*All capital ratios presented on an aggregate (weighted average) basis. Long-term senior debt is estimated based on the long-term non-subordinated borrowings of parent holding companies of all U.S. G-SIBs*

## External TLAC: Today vs. 2008

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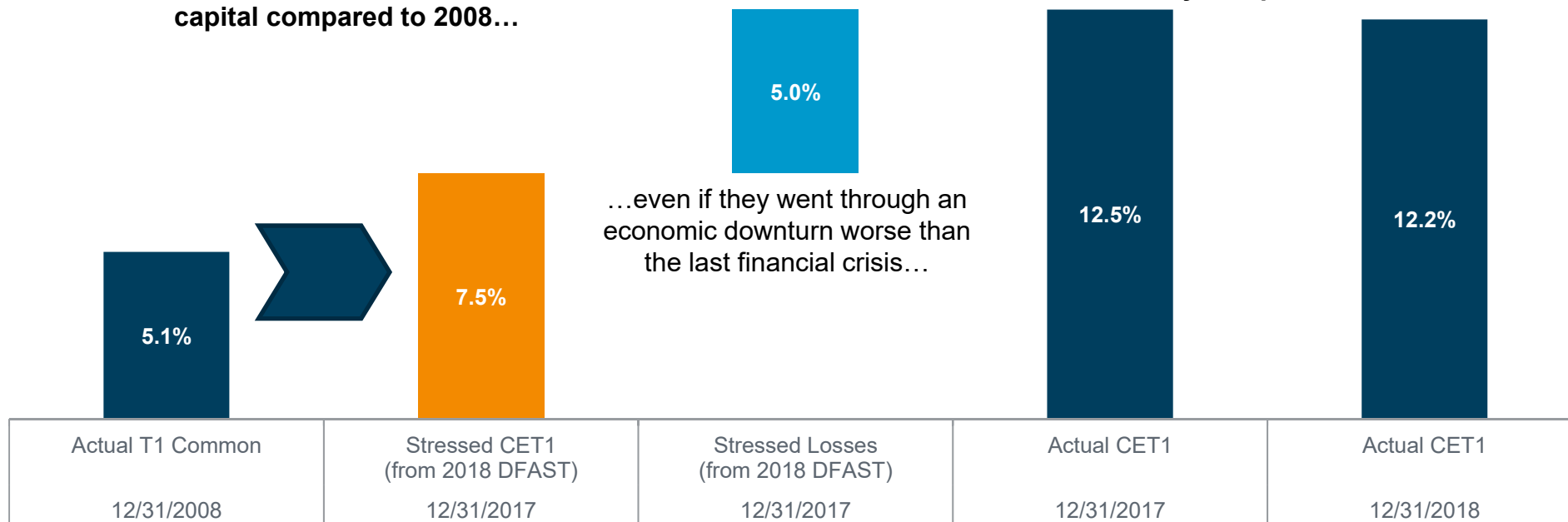
- External TLAC Must Be “Usable” for Resolution Purposes
  - Structurally or Contractually Subordinated to All External Short-Term (Runnable) Debt
- Fed’s Final TLAC and Clean Holding Company Rule
  - Requires External TLAC Debt To Be Structurally Subordinated With Respect to Subsidiary Creditors and Assets
  - Prohibits external short-term debt and financial contracts at top-tier parent
  - All external short-term debt and financial contracts at operating subsidiaries
  - Impact: external short-term debt has first claim on subsidiaries’ assets – ahead of external TLAC at parent level
- Secured Support Agreement
  - Creates contractual commitment by parent to recapitalize subsidiaries in distress scenario secured by a lien on parent’s cash, intercompany receivables and other financial assets (contributable assets)
  - Impact: subordinates external TLAC to parent’s “contributable assets”

# Assuring Sufficiency of Resolution Resources

**U.S. G-SIBs would have higher risk-based capital ratios today in a stressed environment than actual risk-based capital ratios in 2008**

Banks would have nearly **50% more capital after absorbing losses from stress than actual capital compared to 2008...**

...because today banks are starting with **2x the capital they had pre-crisis**



All capital ratios presented on an aggregate (weighted average) basis. Actual T1 Common as of 12/31/2008 reflects the Tier 1 Common ratio in effect prior to Basel III for all U.S. G-SIBs. Stressed CET1 as of 12/31/2017 reflects the minimum CET1\* ratio (under Basel III) under the supervisor-run severely adverse scenario, based on supervisory results of the 2018 DFAST\*\* process, for all U.S. G-SIBS. Actual CET1 reflects the reported CET1 ratio for all U.S. G-SIBs.

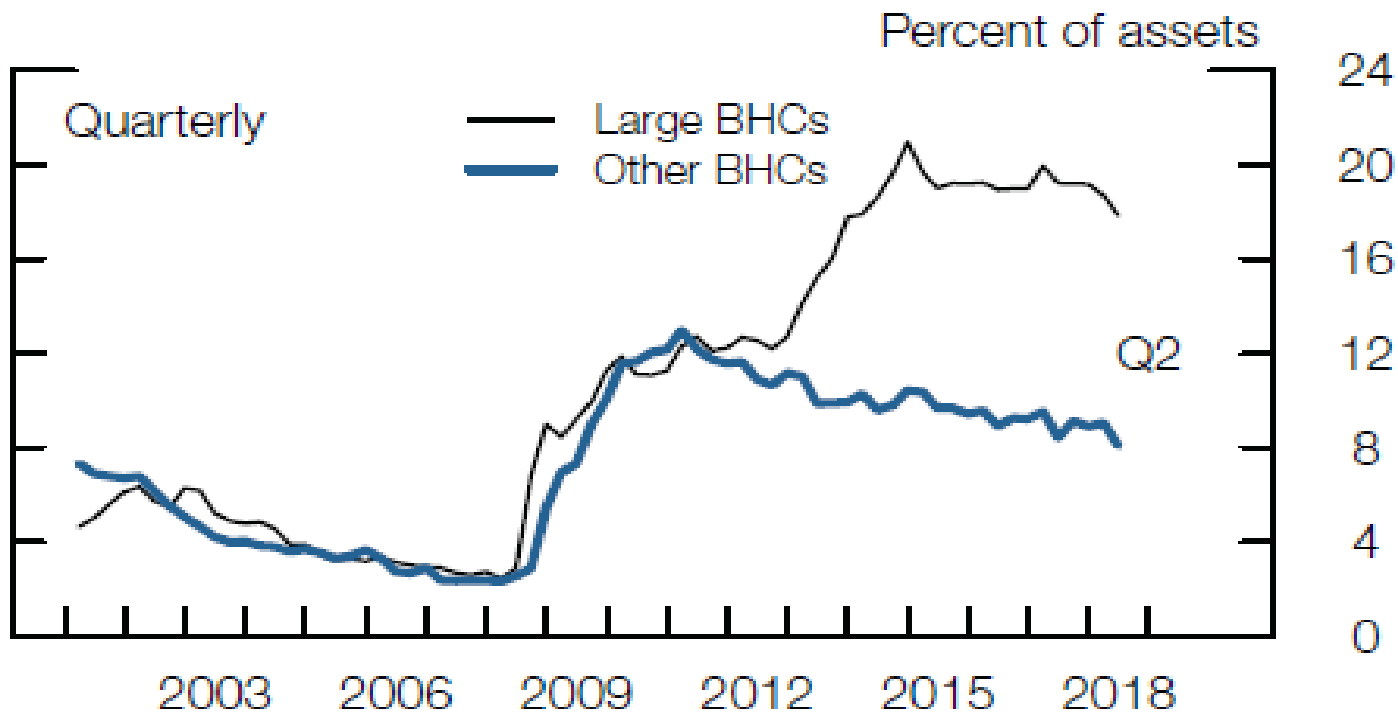
\*CET1 = Common Equity Tier 1 capital, a measurement of a bank's core equity capital, subject to adjustments and deductions under Basel III

\*\*DFAST = Dodd-Frank Act Stress Testing

Source: SNL Financial, Regulatory Filings, 2018 DFAST Results

# Liquidity: Today vs. 2008

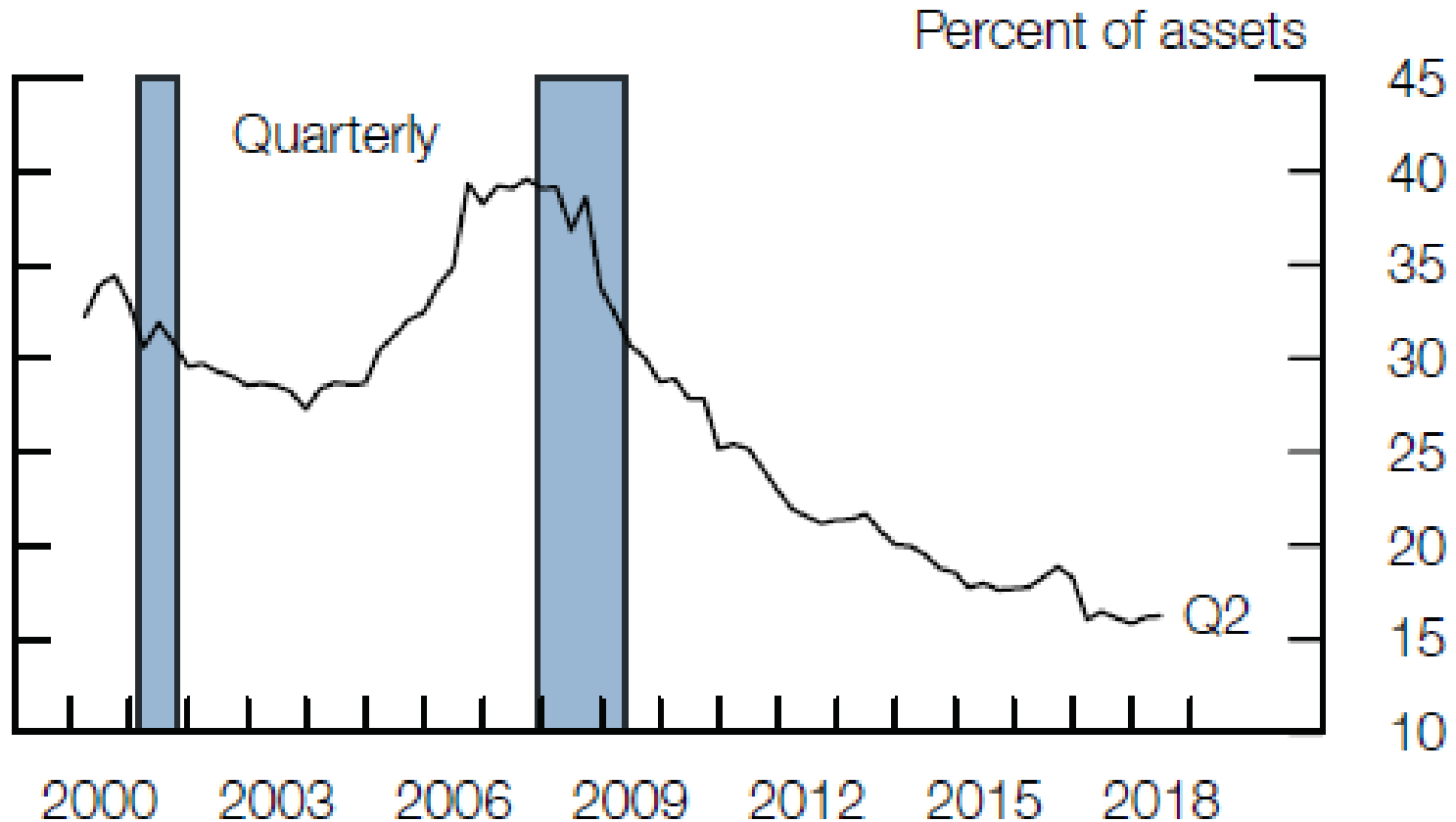
Large BHCs (>\$50 bn assets) have 4x more liquid assets (excess reserves plus estimates of securities that qualify as HQLAs) as a percentage of total assets compared to 2008



Note: Large Bank holding companies (BHCs) are those that have greater than \$50 billion in total assets.

# Liquidity: Today vs. 2008

Banks have reduced their reliance on short-term wholesale funding



Source: Federal Reserve, Financial Stability Report (Nov 2018)

## Positioning Liquidity and Triggers: RCAP, RLAP, RCEN and RLEN

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- Four new resolution planning concepts introduced in the Fed/FDIC Guidance for 2017 Resolution Plans by U.S. G-SIBs under Title I of the Dodd-Frank Act address positioning of resources and triggers for recapitalization and bankruptcy
  - Resolution Capital Adequacy and Positioning (“**RCAP**”)
  - Resolution Liquidity Adequacy and Positioning (“**RLAP**”)
  - Resolution Capital Execution Need (“**RCEN**”)
  - Resolution Liquidity Execution Need (“**RLEN**”)

## Positioning Liquidity and Triggers: RCAP, RLAP, RCEN and RLEN

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- **RCAP and RLAP: Positioning Resources for a Hypothetical Future SPOE Resolution**
  - Firms must “position” appropriate balance of contributable and prepositioned (internal) capital and liquidity resources during business as usual (“**BAU**”) to anticipate a stress scenario
- **RCEN and RLEN: Projecting Actual Needs of OpCos to Make SPOE Resolution Feasible**
  - When under financial stress, firms are required to make real-time projections of capital and liquidity needs of OpCos during resolution period
  - Projections comparable to projections provided to debtor-in-possession (“**DIP**”) lenders in a conventional bankruptcy reorganization proceeding

# Projecting Real Time Resolution Needs: RCEN and RLEN

During a stress period, U.S. G-SIBs are required to estimate and regularly update projected capital and liquidity needed to implement SPOE Resolution based on facts unfolding in the actual stress scenario being experienced by the group

## RCEN

**Projected capital resources needed at each OpCo following the BHC's bankruptcy filing to cover projected losses while SPOE Resolution is executed**

- Must be sufficient to ensure compliance with capital requirements applicable to each OpCo after absorbing losses both before and after commencement of bankruptcy or resolution proceedings
- Updated daily during stress period

## RLEN

**Projected liquidity resources needed at each OpCo after the BHC's bankruptcy filing to cover net liquidity outflows until liquidity levels stabilize (the "Stabilization Date")**

- Must be sufficient to cover both:
  - cumulative net outflows during period after commencement of bankruptcy or resolution proceedings (after offsetting inflows) until Stabilization Date, and
  - peak intra-day liquidity needs
- Updated daily during stress period

RCEN and RLEN are used to formulate triggers so action is taken while sufficient resources remain to execute SPOE Resolution



## Recapitalization Trigger

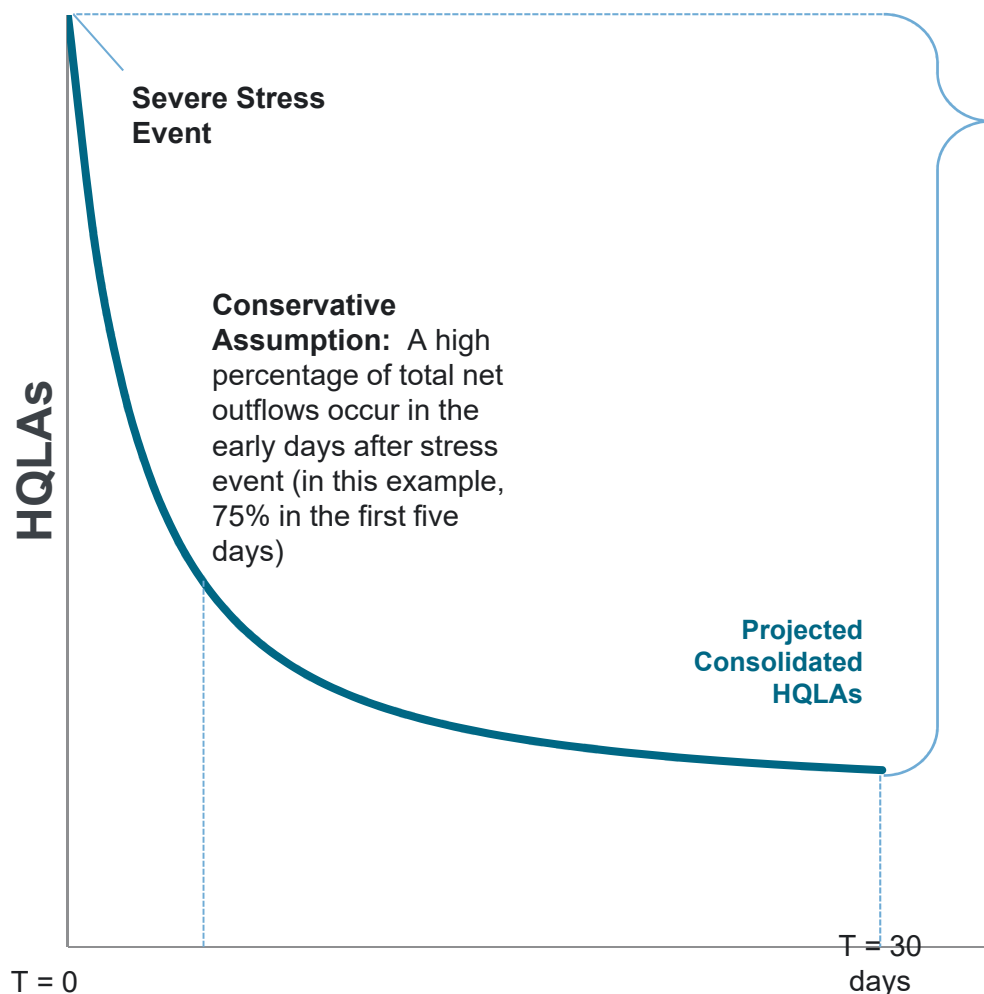
- Recapitalization Trigger occurs when the HQLAs and other assets held at the BHC or IHC level that are available for contribution to the OpCos approach the aggregate capital or liquidity needs of the OpCos based on the RCEN / RLEN shortfall calculation

$$\frac{\text{Available Financial Resources}}{\text{Aggregate Resource Needs}} \rightarrow 1.0$$

**Buffers are built into the trigger calculation so the recapitalization and the BHC's bankruptcy occur while available resources remain sufficient to meet capital and liquidity needs during the resolution period.**

- The precise ratio in the Recapitalization Trigger will depend upon where the buffers are built into the system (RLEN / RCEN or the recapitalization ratio).
- Upon occurrence of the Recapitalization Trigger:
  - The BHC's remaining contributable assets are contributed to the OpCos or an IHC
  - Thereafter, the BHC files for protection under chapter 11
    - The Recapitalization Trigger is also a governance trigger for the BHC director and management action regarding the BHC's chapter 11 proceedings

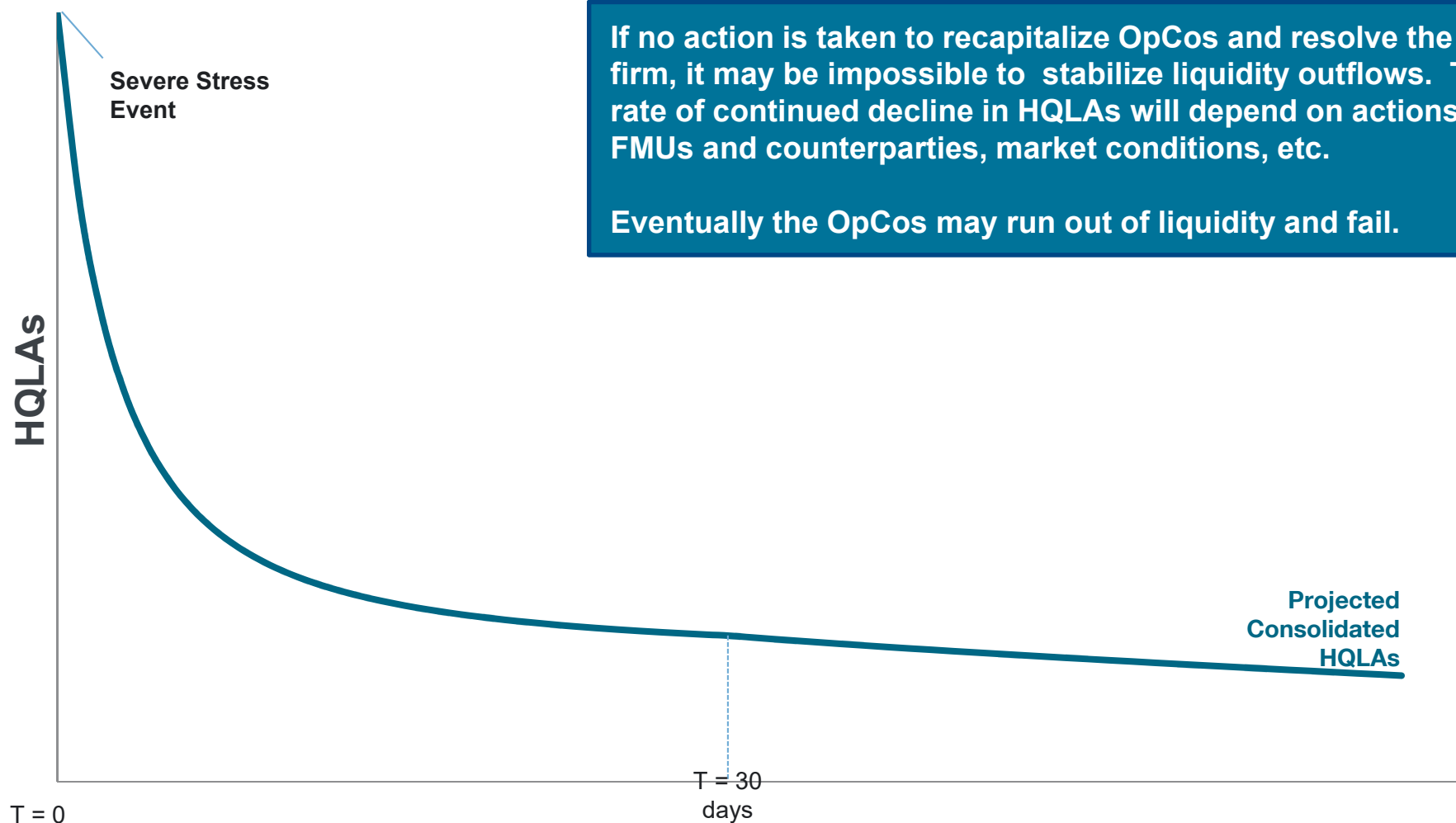
# Models Assume Rapid Depletion of HQLAs During Runway Period Prior to Resolution



**RLAP models require U.S. G-SIBs to hold HQLAs to cover liquidity deficits (Cumulative Net Outflows) of material entities for a stress period of at least 30 days. (See note below.)**

**Note:** Regulatory guidance provides that: “With respect to RLAP, the firm should be able to measure the stand-alone liquidity position of each material entity (including material entities that are non-U.S. branches) — i.e., the high-quality liquid assets (HQLA) at the material entity less net outflows to third parties and affiliates — and ensure that liquidity is readily available to meet any deficits. The RLAP model should cover a period of at least 30 days and reflect the idiosyncratic liquidity profile and risk of the firm. . . . The stand-alone net liquidity position of each material entity (HQLA less net outflows) should be measured using the firm’s internal liquidity stress test assumptions.”  
*Agency Guidance for July 2017 Submissions*

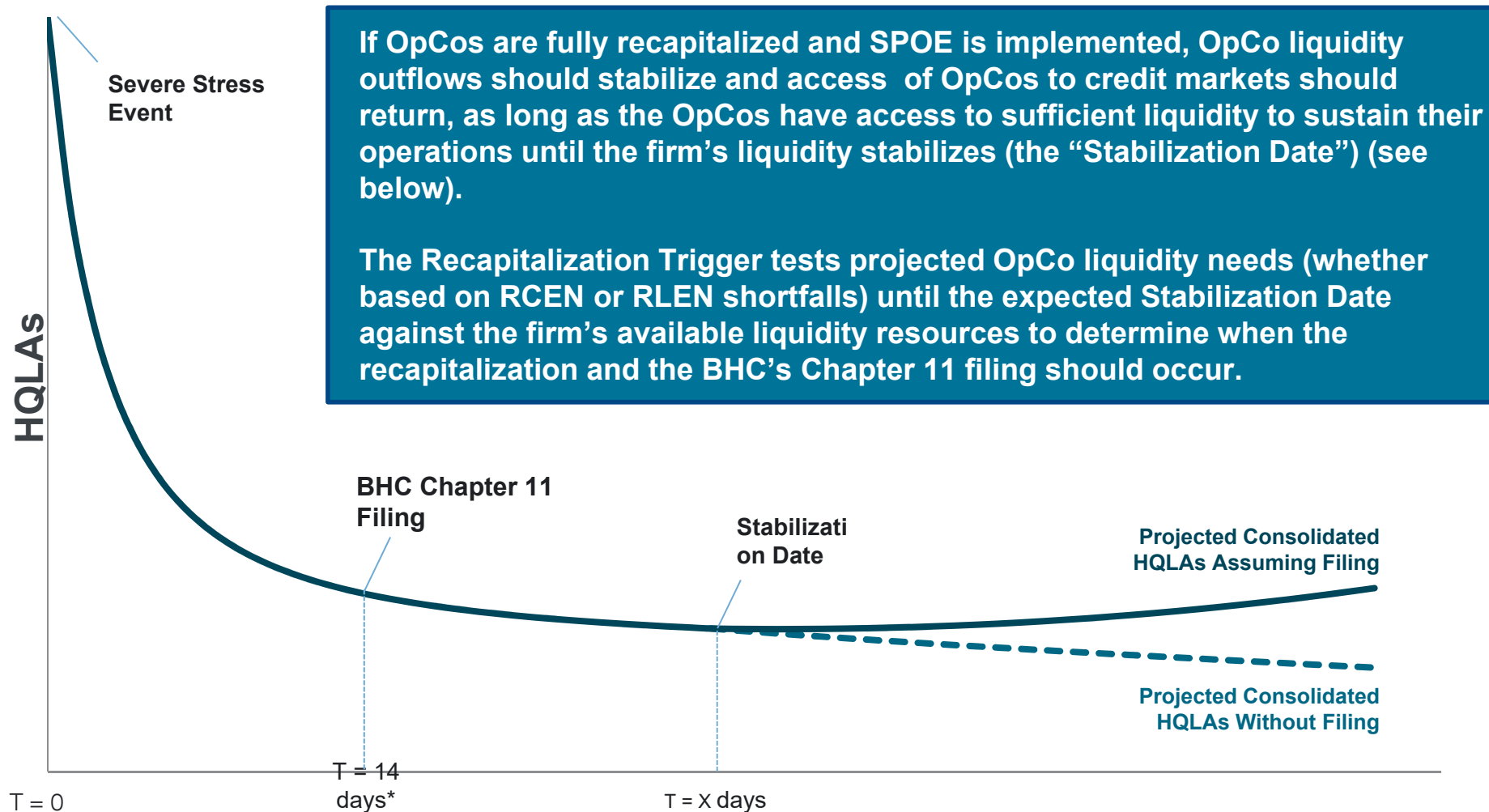
# HQLA Depletion Will Continue Without SPOE Resolution



If no action is taken to recapitalize OpCos and resolve the firm, it may be impossible to stabilize liquidity outflows. The rate of continued decline in HQLAs will depend on actions of FMUs and counterparties, market conditions, etc.

Eventually the OpCos may run out of liquidity and fail.

# Impact on HQLAs of Commencement of SPOE Resolution at Day 14



\* For purposes of this illustration it is assumed that, based on the daily RLEN and RCEN calculations, the G-SIB determines that the Recapitalization Trigger has occurred shortly before day 14, triggering final BHC support contributions to the OpCos, or an IHC if one is used, and BHC’s bankruptcy filing promptly thereafter.