

Implications For The Funding Framework

The Lessons Learned Through The Fall Of 1998 Have Been Institutionalized In Our Approach To Managing Liquidity. Then Market Speculation Around Lehman's Liquidity Position Caused A Retrenchment By Some Credit Providers.

Principle	Implications For The Funding Framework
1. We must remain in a constant state of liquidity readiness	1. Maintain a large cash position in the "Holding Chain," sufficient to absorb the impact of a very severe liquidity event
2. We should not rely on asset sales or increases in unsecured borrowings or funding efficiencies in a liquidity crisis	2. Do not plan on reducing balance sheet for liquidity reasons in a liquidity event (although may do so for risk reasons); cash capitalize unencumbered assets ("box positions") at 100 percent
3. We should not overestimate the availability of secured financing in a liquidity crisis	3. Establish "Reliable Secured Funding" levels by asset category by counterparty
4. Legal entity structure constrains liquidity flows, which should be explicitly accounted for in liquidity planning	4. Separate Cash Capital Model for each regulated entity and the Holding Chain; treat all excess cash in restricted entities as "trapped"

Four Pillars of the Funding Framework

FOUR PILLARS OF THE FIRM'S FUNDING FRAMEWORK

PILLAR I
Cash Capital Model

Determines the amount of long term debt (> 1 year) and equity needed to fund the Firm

PILLAR II
Reliable Secured Funding Model

Represents the completely reliable sources of secured funding by product

PILLAR III
Maximum Cumulative Outflow (MCO) Model

Determines the size of liquidity cushion needed during a stress environment

PILLAR IV
Contingency Funding Plan

Represents a detailed management action plan during a stress event

The Funding Framework – Cash Capital (1)

Pillar I – The Cash Capital Model:

A liquidity event is considered to result in the loss of access to unsecured funding for a year – so the firm must assume that any debt with remaining term of one year or less, will roll off during a liquidity event and is therefore not available to meet ongoing funding needs. We also believe that we will not shrink the balance sheet or increase efficiency during a liquidity event, so all current uses of unsecured funding must be funded with cash with remaining life of more than one year (cash capital).

Cash Capital Uses

- a) 100% Cash Capital Charges
- b) Secured Haircuts on Long Inventory
- c) Operational Friction
- d) Legal Entity Trapped
- e) Contingent Liquidity
- f) “Match” Funding

Cash Capital Sources

Equity & Long Term Debt
Cash Capital Structures
Cash Capital In Restricted Entities
Committed Facilities

The Funding Framework – Cash Capital (2)

(a) 100% Cash Capital Uses

Fixed Assets, Intangible Assets & Other Long Term Non-Trading Assets

This includes asset items such as goodwill, deferred tax, retirement plans, tax receivables, employee loans, corporate investments, general partnership accounts, prepayments and exchange memberships.

Firm Exchange Margin Requirements

Collateral posted to the exchanges to meet initial and variation margin calls are assigned cash capital at 100% of the requirement. There is no beneficial treatment of letters of credit in lieu of cash postings for cash capital purposes. Securities posted as margin are assessed cash capital at 100%.

Long term Collateral Posting

Any collateral posted is assigned 100% cash capital. This will be regardless of whether this posting is met with cash, collateral or Letters of Credit.

Collateral Posted to Clearing Organizations

Similar to posting margin at exchanges, cash, securities, or Letters of Credit posted to clearing organizations represent an ongoing use of unsecured cash and will be assigned cash capital at 100% of the posting requirement (unless the term of the L/C extends beyond 1 year). To the extent the securities posted have already been assessed a cash capital charge, the differential between the Treasury haircut and 100% will be assessed for the posting.

Fixed Income & Equity Derivatives and Foreign Exchange

Derivatives and Foreign Exchange positions have a 100% cash capital usage based on the net collateral posted, net of the MTM on the portfolio. Cross-entity business activity is reviewed for any negative liquidity impact in order to assess the appropriate cash capitalization; cash generated in LBI cannot be used to offset requirements outside LBI.

Other Customer Receivables

Receivables balances other than those arising from the Derivatives business are generally less than the Payables balances. As such these are treated as though they were ‘self-funded’; to the extent that they are not and they exist outside of the regulated broker/dealer chain, then resulting net receivable is assigned a 100% cash capital.

The Funding Framework – Cash Capital (3)

100% Cash Capital Uses (contd)

Inventory Positions

“Non rated” assets

For example Corporates, Private Labels, Money Markets, Asset Backed.

All assets that may normally carry a rating but do not, are assessed 100% cash capital since the absence of a rating makes it impossible to assess the liquidity of an asset in any market environment.

Commercial Mortgage Wholeloans

Even if we are able to fund commercial whole loans secured in a normal market environment, there is enough uncertainty about the ability to fund them secured in all market environments that these assets are assessed 100% cash capital.

Corporate Loans

Corporate Loans do not normally exist in security form and therefore has a secured financing market which is not considered reliable, consequently this collateral attracts a 100% cash capital usage.

Non Investment Grade Private Labels and IO's

This collateral attracts a 100% cash capital usage due to the secured financing market lacking breadth and depth.

Local Sovereigns

Emerging Market Government bonds domestically issued. Recent exceptions are the following investment grade countries of Poland, Hungary, South Africa, Czech Republic, where reliable secured funding markets now exist for this collateral.

Lehman Paper

Any Lehman paper in inventory is assessed cash capital at 100% regardless of maturity

Illiquid Equity

Restricted Stock, Listed Options, OTC options

Investment Management Division; Private Equity and Direct Investment

Direct investments are assessed cash capital at 100% of the market value of the investments (investments in non-restricted liquid securities are assessed the appropriate Treasury haircut on 100% of the market value of the investment).

The Funding Framework – Cash Capital (4)

(b) Secured Haircuts on long inventory

Long Inventory is assessed a cash capital requirement based on the settlement date long market value multiplied by the associated cash capital haircuts. Inventory holdings are systematically priced. Treasury's cash capital haircuts are conservative, based on "normal" bank secured lending haircuts (stress haircuts are used in the Firm's MCO model) and are benchmarked against real market haircuts. If Treasury assesses that an asset cannot be reliably funded on a secured basis in a liquidity event, the haircut assessed against this asset is set at 100% (e.g., commercial mortgages)

Reverse Repurchase Agreements and Securities Borrows

Reverse Repurchase agreements and Securities borrows are assessed cash capital between 0.5% and 5% depending on the haircut convention for the asset type and region (See table below). Reverse Repurchase agreements and Securities borrows are not assessed this charge if they are executed as part of a matched book trade as matched book activity is self-funding; to the extent that matched book activity is a user of unsecured funding, the activity is assessed a cash capital charge based on the cash capital haircut framework above.

Collateralized Lending to Counterparts

Structured Finance and other business units provide secured financing to various third party borrowers, who in turn provide collateral as security to support the loan. This collateral is treated as if the Firm had 'reversed in' these assets, and therefore represent a cash capital requirement at the Treasury haircuts for each individual asset class in the standard way.

The Funding Framework – Cash Capital (5)

Operational Friction

Inventory in the “Box”

Inventory that has not been financed on a secured basis will be assessed a “box” charge to fully cash capitalize the amount of unsecured funding that asset requires. This “box” charge will be the difference between the Treasury cash capital rate for the asset and 100%, multiplied by the market value of the collateral boxed. This is based on the assumption that liquid assets in the box are unencumbered due to unavoidable operational friction.

There are however a few exceptions to 100% cash capital assignments for inventory in the box. Treasuries in LBI are excluded from the box charge due to their role as “quasi cash” in LBI’s functional process and ability to pledge them to JP Morgan through a box loan in all market environments. Secondly inventory funded on a “secured” basis with Treasury to utilize any excess short-term cash will be charged the Treasury haircut but exempt on the remainder. The Treasury Funding Desk will execute these trades as investments of liquidity and the collateral is identified separately for Treasury.

Cash At Banks

With the exception of cash deposited by Treasury as part of its Liquidity pool investment, cash left deposited at banks is a usage of cash capital. This is because the Firm operates a complex bank account infrastructure across many regions which does ‘trap’ operational levels of cash. This cash is not deemed to be freely available for sweeping up the chain to augment LBHI’s liquidity pool and therefore is taken as a cash capital usage.

One could make the case that operational friction would be managed down in a liquidity event and to cash capitalize the requirement is excessively conservative. These represent, in combination, many billions of additional cash capital, which we believe to be appropriate and prudent.

The Funding Framework – Cash Capital (6)

Legal Entity Trapped

- The structure of regulated entities may constrain liquidity and therefore capital and liquidity in regulated/restricted entities is evaluated separately from capital within unregulated/unrestricted entities.
- There are two types of regulated/restricted entities:
- Entities such as broker dealers that rely on the Holding Company for most of their cash capital funding requirements. For these entities, the primary liquidity risk to manage is that of “trapped cash” - i.e. cash which cannot be upstreamed to the Holding Company usually as a result of regulatory requirements.
- Entities such as Bank institutions that are able to raise most of their long term funding (through long term deposits) in a reliable way – typically because of deposit insurance (FDIC, GDFP). Those entities have their own cash capital model – based on the reliability of their funding sources and the “pledgeability” in the case of LBB of their mortgage asset to the FHLB in a stressed liquidity environment. These entities are expected to be self sufficient with any surpluses being assumed to be trapped in the respective entity – and any deficit is funded by Holding company cash capital.

Trapped Liquidity due to Intercompany Margin Postings

- Cash capital is assessed on intercompany movements of cash or collateral that create trapped liquidity. Entities may be precluded from moving this liquidity due to explicit or implicit regulatory, rating agency, or operational restrictions. Margin posted by other Lehman entities into regulated entities (e.g. LBI) which cannot be utilized to support activity outside of regulated entities is one of the most common sources of trapped liquidity. In the event the intercompany posting of margin is related to activity that is already assessed cash capital, i.e. long inventory positions, the incremental requirement will be for the difference between the asset charge and the posted amount. Product controllers will be responsible for documenting the amount of cash capital that has been assessed on the positions covered by intercompany margin postings.

Structural Trapped Liquidity

- To the extent an entity is mandated to have more regulatory capital than is required for cash capital purposes, this surplus of cash capital will be trapped within that regulated entity and will be assessed a 100% cash capital charge. In certain regulated entities (e.g. LBFP and LBDP) the trapped liquidity manifests itself in the form of liquid securities which remain in the box and cannot be funded secured because of regulatory or rating agency restrictions. This form of trapped liquidity is already taken into account as we cash capitalize the box at 100%.

The Funding Framework – Cash Capital (7)

Contingent Liquidity

- Contingent liquidity risk exists where the firm is potentially required to provide future funding, either by agreement or as a result of specific events (e.g. Lehman ratings downgrade). Despite not being a current cash usage, contingent commitments are cash capitalized to provide a liquidity cushion in the case that counterparties do draw on their facilities. Treasury uses Monte Carlo simulations and historic analysis to assess the sufficiency of the “pre-funding” the Firm has raised for the commitment portfolio.
- The largest contingent liquidity risk is unfunded corporate loans, where the firm has committed to provide future funding to borrowers (usually high grade) under revolving credit agreements.
- Unfunded commitments represent a dual risk for the Firm:
- Credit risk from a deterioration of the creditworthiness of the borrower since the signing of the commitment (credit risk impacts both funded and unfunded commitments)
- Liquidity risk around the ability of Lehman to fund the commitment, irrespective of the creditworthiness of the borrower (liquidity risk impacts only unfunded commitments)
- Liquidity risk is not concerned about the mark of these commitments (credit risk issue) but about their immediate funding requirements (liquidity risk issue) and, to a lesser extent, about their long-term funding requirements. While we can reduce credit exposure through CDS and bond shorts, these measures do not lower liquidity risk (outright sales shifts both liquidity and credit risk).
- To address the liquidity risk of commitments, the unfunded portions of commitments require long term pre-funding to ensure that the Firm has sufficient cash under all possible “draw” scenarios.

“Match Funding” Treatment

- In the rare cases where a business presents an integrated transaction where the asset and associated liability have self funding and self liquidating characteristics, Treasury (at its discretion) may consider the source and use of cash to be “matched”. This situation occurs when the transaction has an inherent liquidity risk hedge where liquidation of the asset generates the cash to satisfy the repayment of the liability (staple financing). These structures are reviewed on an individual basis and are tracked separately.
- Example : Equity Index Linked Note issued by the Business where all the proceeds have been used by the Business to acquire units in the underlying equity index as a hedge for the note. As the notes mature or are bought back, the hedge is unwound/liquidated releasing funds to repay the investors. There is no cash required (or generated) for the firm.

The Funding Framework - Reliable Secured Funding (1)

Pillar II – Reliable Secured Funding Model (“RSFM”):

A) Firm Financing

To determine the amount of secured funding requiring tenor by asset class, a maximum “RSF” quantity by asset class is set, which reflects a completely reliable subset of available capacity for overnight/open funding for that class. All funding above that maximum RSF needs to be on a term basis, with the required tenor having a minimum of 90 days and based on a series of rules by asset type.

Setting RSF limits by Asset Class:

The Equity and Fixed Income Funding Desks propose the initial RSF limits which are set by asset class after an extensive review of the available capacity, by collateral and counterparty. The RSF limits reflect past experiences and represent the current expected capacity, by collateral and counterparty, in the event of a liquidity crisis. The Funding Desks are responsible for briefing Treasury on any experience or market changes that have an impact on RSF limits. Creditor Relations in Treasury are also engaged in ongoing dialogue with secured funding counterparts to assess and negotiate facility limits. A change request to RSF limits from the Funding Desks, must be supported by information on the expected capacity, by counterparty and collateral type, in the event of a liquidity crisis.

In assessing the amount of current inventory requiring tenor, those asset types which are completely/very highly liquid (e.g. U.S. and other G7 governments, Agency MBS) are assessed to have no restriction of secured funding. The RSF limits are adjusted downward for cannibalization effects across facilities provided by the same counterparty (e.g. if a counterparty provided cash capital, MCO (ie. greater than 90 day term), and RSF facilities against a specific collateral, the RSF capacity was adjusted downward by the amount of cash capital and MCO facilities, thereby accommodating counterparty’s desire to potentially restrict total exposure to Lehman during a crisis).

The inventory in excess of the RSF limits requires term financing consistent with the tenor structure proposed by the FID and Equities Funding Desks, but no less than 90days. The limitation on tenor derives in part from what the market will bear, and in part on collateral substitutability/swap issues. Assets funded on a secured basis in Bankhaus, and the Thrift with Federal Home Loan Bank (FHLB) advances, qualify as reliable

The Funding Framework - Reliable Secured Funding (2)

B) Customer Financing : Prime Broker Model

Where Lehman provides secured financing to customers, the liquidity risk is that market conditions change in ways which make it difficult to generate funding. The stress case is characterized by:

Secured funding capacity in the marketplace, particularly for low quality collateral, reduces and haircuts widen. Excess equity in Prime Broker accounts reduces significantly either due to losses or to cover redemptions, increasing the amount of cash required to be raised through secured funding.

To the extent the client can increase their borrowing from Lehman, they do so.

Overall, the liquidity risk with customer funding is that we are contractually tied into providing certain financing commitments, but are then unable to to ‘turn the assets around’ and fund to the street.

In normal operating environments, the Prim Broker business is self financing – the available collateral and secured funding available in the market is easily sufficient to meet the cash requirements. Our approach is to ensure that this business will not require unsecured funding from Holdings. We finance customer assets through term funding (with the tenor of the funding at least matching the tenor of the customer financing trades) so that the business can operate without requiring any unsecured cash in a stress scenario. More specifically we consider the following scenarios;

No overnight secured market for low quality collateral (non-index equities and non-investment grade converts E3 and C2).

Haircut widening and limited loss of capacity for medium quality collateral (second tier index equities, E2)

Haircut widening for high quality collateral (major index equities and investment grade convertibles, E1, C1)

Approximately 75% of the excess equity is removed.

We are also protected against unexpected funding requirements through customer account collateral balance increases as all agreements require that counterparties obtain our sign off prior to taking on any incremental positions.

The Funding Framework – Maximum Cumulative Outflow

Pillar III – The Maximum Cumulative Outflow (MCO) model:

The MCO model ensures that the Firm has sufficient cash resources to meet the cash outflow that can be expected in a stress environment. By projecting a series of cash flows over a one year horizon the model defines the size of the liquid cash pool that needs to be maintained.

The model considers the two primary liquidity events we are concerned about:

Lehman specific event:

If creditors lose faith in the Firm's ability to repay its debt they will be unwilling to lend to us either unsecured, or even to some extent on a secured basis against highly or less liquid assets. This can become a self-fulfilling downward spiral, as no one wants to be the last person lending into a failing institution.

Market liquidity event:

If some large disruption to marketplace leads to a global liquidity squeeze, it will increase the cost of borrowing materially, and cause firms to call on their backstop facilities. Such a scenario also requires the Fed being unable to pump liquidity into the system, a theoretical but almost unimaginable circumstance.

Measures which provide liquidity strength in a Lehman specific event also helping a Market event. The principle difference is the likelihood of contingent commitment draws in a market event. The MCO assumptions include:

- The Firm will not be able to issue any short term or long term debt, or draw on uncommitted bank lines for one year
- There is no secured funding availability above the Reliable Secured Funding (RSF) limits by asset class for at least 90 days
- The average secured financing haircut increases (assume haircut reverts back to normal market level after 90 days)
- Additional funding requirements resulting from a credit rating downgrade (e.g. the increased collateral requirements for OTC derivative transactions)
- Anticipated funding requirement for contingent commitments (e.g. backstop facilities) based on a stressed probabilistic scenarios
- The Firm opportunistically repurchases upto \$2bn of its capital during a liquidity crisis (approx. \$0.5bn equity and \$1.5bn debt).

The Funding Framework – Contingency Funding

Pillar IV – Contingency Funding Plan:

A funding crisis can range from a localized event to an issue of domestic or cross-border significance. The rating agencies have determined that a liquidity crisis could arise as a result of either:

- A severe earnings setback, for example, a large quarterly loss
- A downgrade in credit ratings
- A serious fraud or litigation
- Market events, leading to a failure of another financial institution, and/or a country

A funding crisis has the potential to adversely affect the interest of the Firm if it leads to the impairment of the Firm name, customer franchise, personnel confidence, creditor confidence, and credit rating. In order to safeguard these interests and enable the Firm to function as a going concern, the Funding Action Plan aims to:

- Create an executable plan for a comprehensive response to extreme liquidity events by geographical region, functional area, and business
- Provide a definition of roles and responsibilities within the management framework to execute the plan
- Organize key contact points within and outside the firm to identify focal areas for decision making and implementation
- Supply an exhaustive framework to optimize resource availability and allocation to functions and business units actively involved in managing the crisis
- Identify the key resources within the firm, including personnel, information technology, and operational that need to be mobilized to implement the plan
- Provide a comprehensive, coordinated and centralized communication strategy to consolidate feedback and provide immediate status to senior management
- Appoint key individuals who are required to be free from line responsibility to deliver the plan

The Treasury Funding Action Plan is complemented by the Firm-wide Business Continuity Plan, which seeks to ensure that Lehman Brothers can continue critical operations with limited processing interruption in the event of a disaster. Business Continuity Management manages the Firm's internal incident response process and develops and maintains continuity plans for critical business functions and infrastructure. This includes determining how vital business activities will be performed until normal processing capabilities can be restored. Business Continuity Management is also responsible for facilitating disaster recovery and business continuity training and preparedness for Lehman employees.