

Liquidity Management At Lehman Brothers

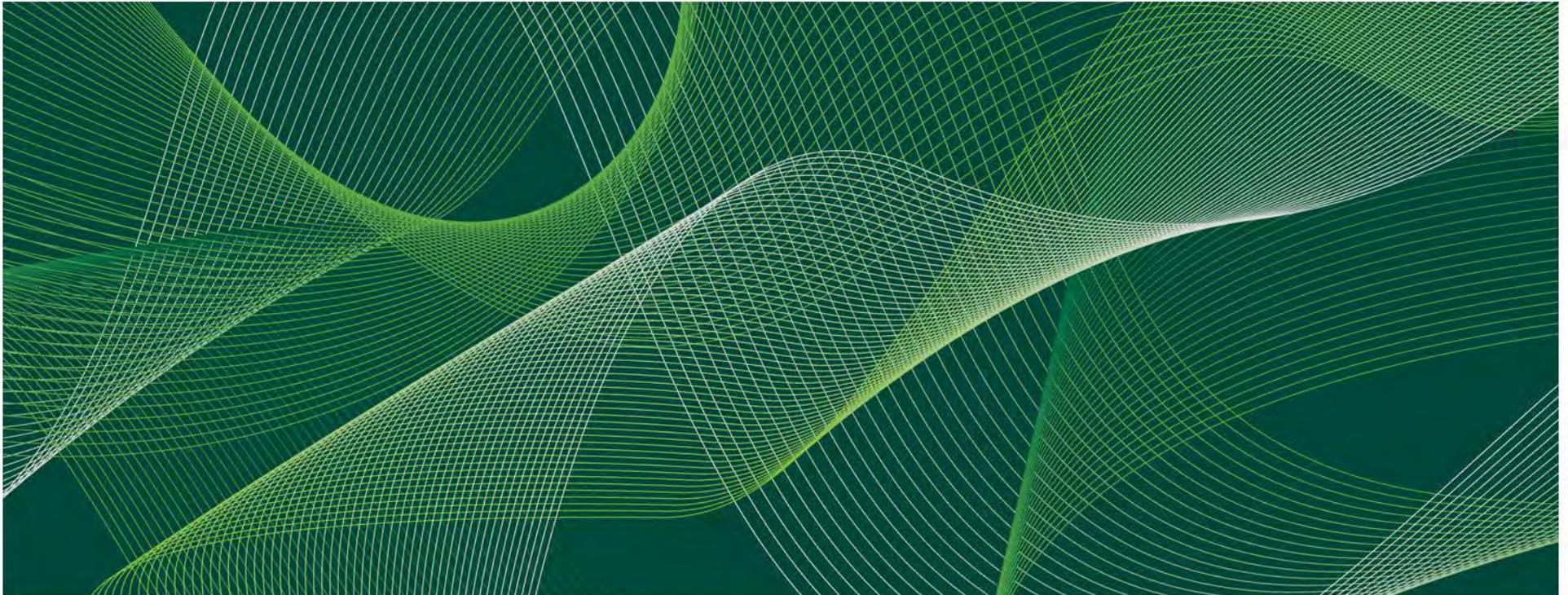


Table of Contents

- ◆ Introduction to Global Treasury
- ◆ The Funding Framework
- ◆ Liquidity Metrics
- ◆ Funding Strategy
- ◆ Appendix
 - Lessons Learned from the Bear Stearns Liquidity Event

Introduction to Global Treasury

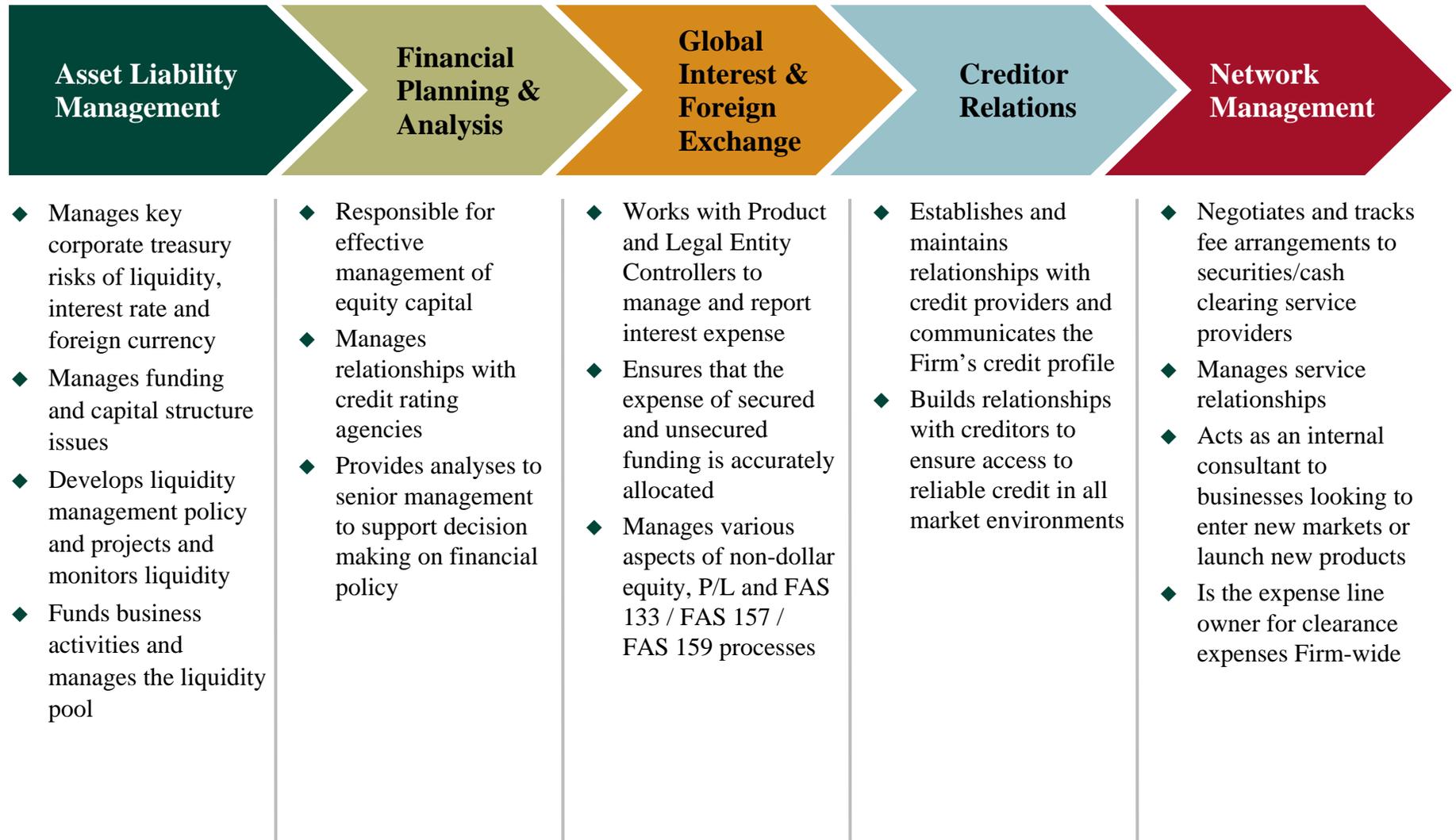
Global Treasury Disciplines

Global Treasury is comprised of the following core disciplines



Global Treasury Disciplines Overview

Global Treasury's primary responsibility is to keep the firm safe from a liquidity standpoint, to fund all business needs and to ensure effective use of the Firm's capital



Liquidity Management

Treasury’s liquidity management philosophy is embedded in the Funding Framework – the set of rules and guidelines for determining the appropriate funding of assets

Treasury is responsible for managing the liquidity and liquidity risk on a daily basis

Liquidity pool reporting

Cash capital reporting

Secured funding reporting

Short-term liquidity outflow projections

Debt issuance: short-term and long-term

Equity planning: including hybrid equity

This management is done in collaboration with the rest of the Firm

- ◆ The Finance Committee, which is comprised of key Finance senior management, is responsible for updating the rules of the Funding Framework
- ◆ Through an initiative called the “Funding Optimization Project” launched in 2004, Treasury and the Secured Financing desks (Fixed Income & Equities) have partnered together to improve funding efficiency and liquidity management policies for secured funding and the Prime Broker business

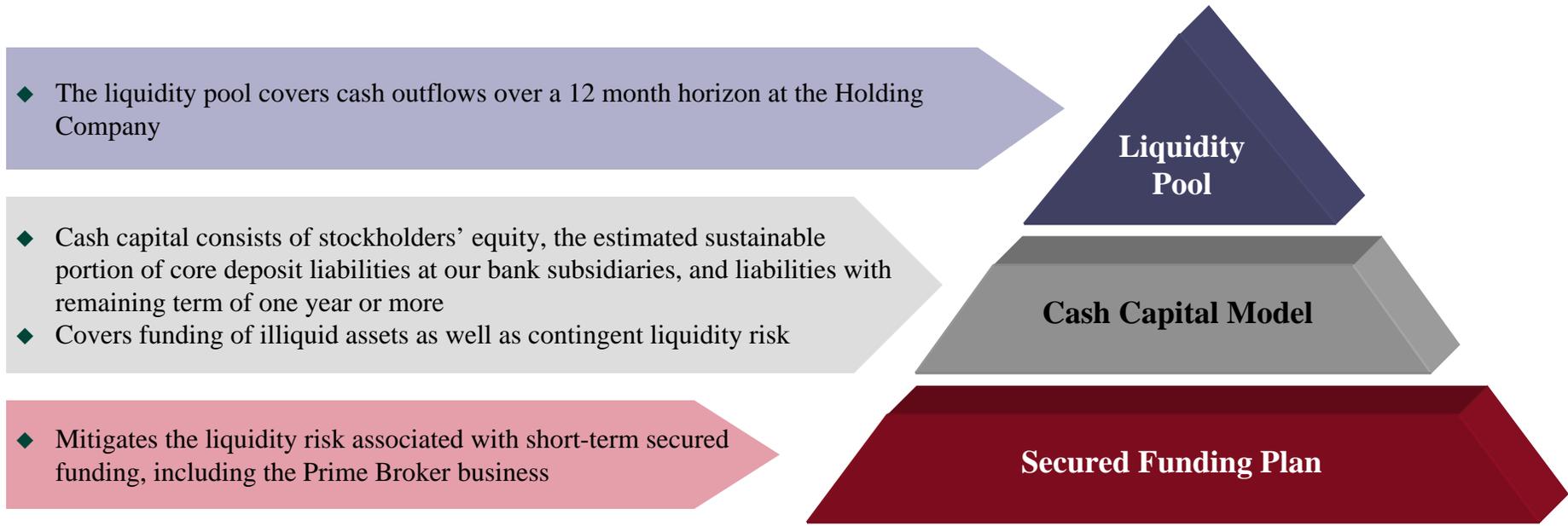
The Funding Framework

Introduction to the Funding Framework

Established and implemented in the aftermath of the liquidity event of 1998

- ◆ The Lehman Brothers Funding Framework is based on a set of conservative principles guiding the funding of assets and mitigating liquidity risk. It has been refined and augmented over the years as the Firm enters new businesses and as the liquidity risk of existing businesses changes
- ◆ At its core are the following principles:
 - Remain in a state of constant liquidity readiness
 - Do not rely on asset sales, increase in operational effectiveness or access to the unsecured debt market in a time of crisis
 - Be proactive with key stakeholders before and during a liquidity event: regulators, creditors, trading counterparts and rating agencies
- ◆ The conservative assumptions embedded in the Funding Framework (e.g., fund boxed positions with cash capital, irrespective of the liquidity characteristics of the positions) is what distinguishes the Firm’s Framework from that of our peers

The Framework is Structured Around Three Dimensions



Core Principles of Capital and Liquidity Management

Our capital and liquidity management is based on four principles

Liquidity Strategy Principle

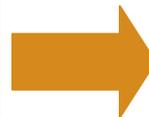
Implication to Funding Framework

◆ We must remain in a constant state of liquidity readiness



◆ **Maintain a large cash position** in the Holdings Chain, sufficient to absorb the impact of a very severe liquidity event

◆ We should not rely on asset sales or increases in unsecured borrowings or funding efficiencies in a liquidity crisis



◆ **Do not plan on reducing balance sheet for liquidity reasons** in a liquidity event (although may do so for risk reasons)

◆ We should not overestimate the availability of secured financing in a liquidity crisis



◆ Establish **'Reliable Secured Funding'** levels by asset category by counterparty

◆ Legal entity structure places constraints on liquidity flows which should be explicitly accounted for in liquidity planning



◆ Separate Cash Capital Model for each **regulated entity** and the Holdings Chain; treat all excess cash in restricted entities as 'trapped'

Cash Capital Uses

All unsecured funding requirements in normal operating conditions require cash capital

	Examples	Cash Capital Principle
Illiquid positions	<ul style="list-style-type: none"> ◆ Corporate and commercial whole loans ◆ Long-term non-trading assets ◆ Exchange margin & other LT collateral ◆ Fixed income, equity derivative and FX 	<ul style="list-style-type: none"> ◆ Funded 100% with cash capital ◆ Determine whether a position is illiquid by looking at its fundability in a stress liquidity event
Secured haircuts on long inventory	<ul style="list-style-type: none"> ◆ Reverse repo agreements and borrowed securities ◆ Collateralized funding to counterparts 	<ul style="list-style-type: none"> ◆ Cash capital charge dependent on asset haircut ◆ Haircuts conservatively estimated and regularly reviewed ◆ If asset cannot be reliably funded on a secured basis in a liquidity event, the haircut assessed against the asset is 100%
Operational friction	<ul style="list-style-type: none"> ◆ Inventory in the “box” ◆ Cash at banks 	<ul style="list-style-type: none"> ◆ Unsecured financing assessed a “box” charge irrespective of liquidity characteristics ◆ Cash at banks deemed not to be freely available to Holdings
Legal entity trapped	<ul style="list-style-type: none"> ◆ Intercompany margin postings ◆ Structural trapped liquidity 	<ul style="list-style-type: none"> ◆ Margin posted by other entities into regulated entities ◆ Surplus cash due to regulatory capital requirements
Contingent liquidity	<ul style="list-style-type: none"> ◆ CP backstops ◆ High-yield revolvers ◆ Secured lines of credit 	<ul style="list-style-type: none"> ◆ Prefund unfunded loans to mitigate contingent liquidity risk ◆ Revolvers typically include covenants that prevent draws in distressed market events
“Match funding”	<ul style="list-style-type: none"> ◆ Integrated transaction on asset and liability side 	<ul style="list-style-type: none"> ◆ Asset and liability have self-funding and self-liquidating characteristics ◆ Structures reviewed on an individual basis

Cash Capital Sources

Target cash capital sources to exceed uses by \$4 - \$7 billion on an ongoing basis

	Examples	Cash Capital Principle
Equity and long term debt	<ul style="list-style-type: none"> ◆ Equity ◆ Preferred and trust preferred ◆ Long term debt with remaining term > 1yr 	<ul style="list-style-type: none"> ◆ Limit amount of maturing debt over any rolling three, six and twelve month horizon (12.5%, 17.5% and 30.0% of total, respectively) ◆ If debt limits are exceeded, do not recognize excess as reliable liquidity ◆ Source diversity by limiting individual aggregate holdings to 5% of Lehman Brothers' total debt outstanding
Cash capital structures	<ul style="list-style-type: none"> ◆ Evergreen structures ◆ Non-extendible structures ◆ Structured notes 	<ul style="list-style-type: none"> ◆ Extendible secured and unsecured structures with terms > 1yr ◆ Structures with completely reliable funding with remaining terms >1 yr
Restricted entity cash capital	<ul style="list-style-type: none"> ◆ Certificates of deposit ◆ Schuldschein 	<ul style="list-style-type: none"> ◆ Liabilities with insurance wrap
Committed facilities	<ul style="list-style-type: none"> ◆ Revolving credit facilities 	<ul style="list-style-type: none"> ◆ \$2.0 billion U.S. and \$2.5 billion European syndicated facilities ◆ Routinely drawn and repaid for working capital purposes ◆ Average utilization is 33-50% ◆ Included as a source only when drawn

No reliance on hot money such as customer free credits or short term debt as a cash capital source

Bank Entity Asset Growth and Asset Funding – UPDATE

The Funding Framework

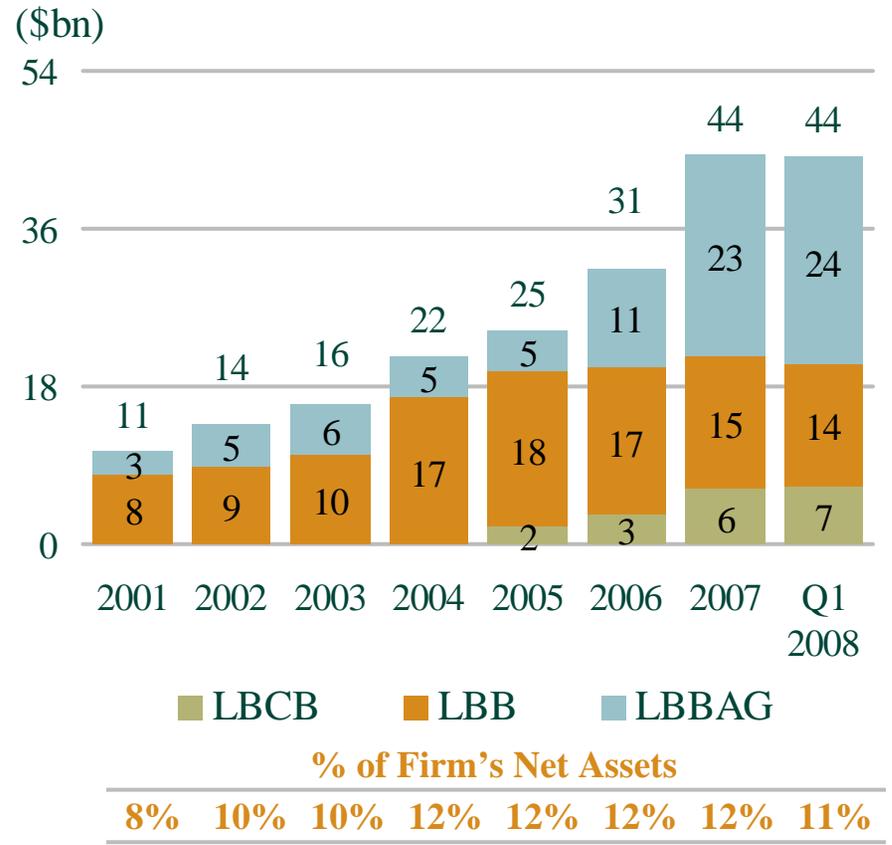
Strong asset growth at bank entities provides a reliable funding source

- ◆ The three banking entities all benefit from raising cost-effective financing in a depositor-protected environment

Lehman Brothers Banking Entities

- **Lehman Brothers Bank (LBB):** Funds all US residential mortgage origination. Additionally funds commercial mortgages and investment grade US loans. Can access the Fed discount window
- **Lehman Brothers Commercial Bank (LBCB):** Funds commercial mortgages, derivative receivables and corporate and industrial loans. Can access the Fed discount window
- **Lehman Brothers Bankhaus (LBBAG):** Funds securities on repo and loans (commercial, residential and corporate). Can access the ECB discount window

Lehman Brothers Banking Entities – Total Assets



Contingent Liquidity Risk

- ◆ The Funding Framework is designed to set rules in order to protect the Firm in a stress liquidity environment. In a stress environment, whether Lehman-specific or market-wide, we plan for an increase in cash capital requirements due to
 - Unfunded loan commitments that get drawn due to a contraction in the market liquidity or due to a series of credit events impacting Lehman's banking clients
 - One-notch downgrade of Lehman's credit ratings
- ◆ The committed portfolio is very diversified across clients and industries, which is an effective liquidity risk mitigant
- ◆ To further mitigate the risk, the majority of loan commitments are booked in the bank entities
 - Best suited to handle commitment risk because of access to the insurance-protected deposit markets, the Central Bank and, in the case of the U.S. bank entities, FHLB borrowing windows
 - Additionally, the liquidity risk is prefunded with cash capital based on a quantitative assessment of the draw, which takes into account client ratings and industries
- ◆ A downgrade of Lehman's ratings would mechanically result in an increase in cash capital requirements – primarily due to additional cash collateralization of our derivatives receivables
 - The increase in funding requirements due to a one-notch downgrade is also funded with cash capital

FOIA CONFIDENTIAL TREATMENT REQUESTED BY LEHMAN BROTHERS HOLDINGS INC.
 Traditional Approach
 Enhancements
 RECORDED
 EX-100
 ID 009007

Managing Secured Liquidity Risk

- ◆ Short term secured financing represents the largest source of secured funding for the Firm. Consequently, one key objective is to ensure that these funding sources are maintained in adverse market environments
 - Do not want to put Lehman Brothers in a position where a lack of liquidity results in an impairment of the franchise
- ◆ Manage secured liquidity using a four-pronged risk mitigation strategy, which conservatively assumes: (i) no reliance on Holdings’ liquidity and (ii) no reliance on customer collateral or free credits

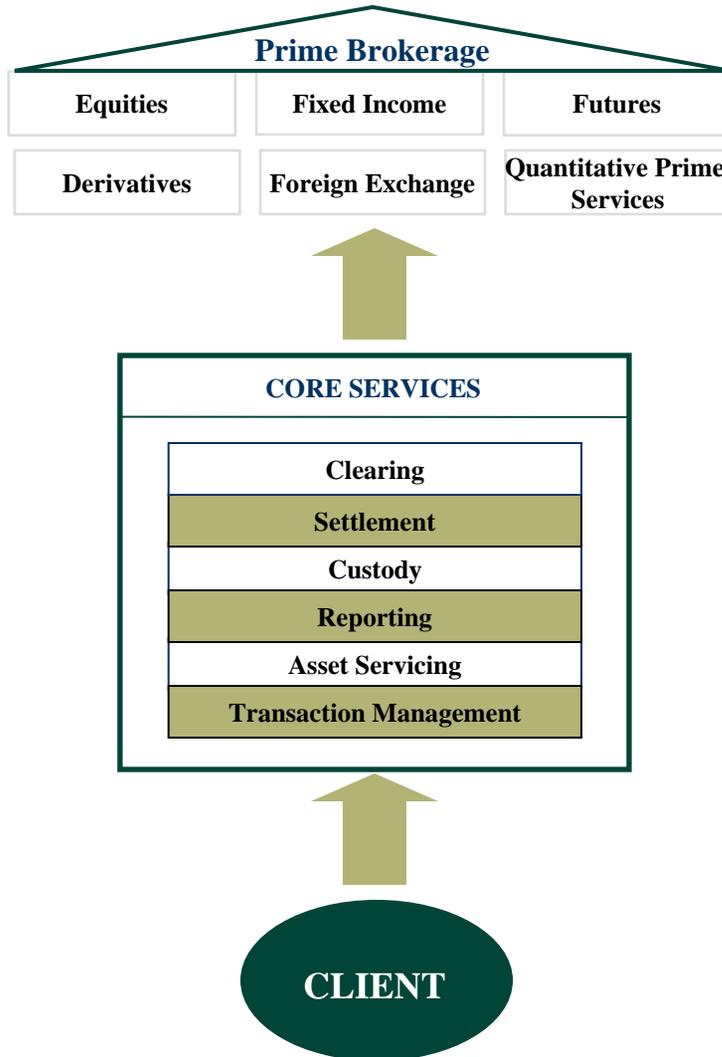
Secured Financing Risk Mitigation Strategy

Assess reliability of funding counterparts	<ul style="list-style-type: none"> ◆ Reliability of repo counterparties are being assessed continuously on an asset class-by-asset class basis ◆ Funding is typically with counterparts, which have a long and deep funding/trading history with Lehman Brothers (e.g., clearing banks, large asset managers)
Overfund less liquid asset classes	<ul style="list-style-type: none"> ◆ Capital Markets Prime Services as a matter of policy funds more less liquid collateral than it needs, thereby creating a “cushion” in case counterparts stop funding Lehman Brothers or ask for higher quality collateral
Use of Lehman Brothers Bankhaus	<ul style="list-style-type: none"> ◆ Contrary to Lehman Brothers Bank or Lehman Brothers Commercial Bank, Lehman Brothers Bankhaus is able to fund good quality collateral (~\$3 billion) held by other Lehman entities, such as LBIE ◆ This collateral can be funded either on an unsecured basis (Bankhaus operates in a deposit-protected environment) or can be repoed to the discount window of the ECB
“Transform” balance sheet	<ul style="list-style-type: none"> ◆ In a severe liquidity event, Lehman Brothers would reduce liquidity-consuming proprietary positions, such as the Matched Book ◆ Additionally, we would use our structuring capabilities to create liquid, investment grade securities out of a pool of less liquid collateral (e.g., through CLO or CDO)

Liquidity Risk of Prime Broker Business

Capital Markets Prime Services

Target self sufficiency of the business



- ◆ Prime brokerage provides clients with a range of centralized record keeping, clearing and custodial services in addition to financing of securities positions and providing access to a supply of both liquid and illiquid securities for borrowing and short covering
- ◆ Prime broker business is typically a cash generating business because the equity (customer free credit balances) and margin requirements are typically in excess of the actual cash requirements of the business (financing and short covering haircuts as well as the customer collateral left in the box)
 - The key funding principle for the prime broker business is that it should be self-sufficient
 - The business typically generates enough cash to cover the withdrawal of the customer free credit balances, mitigate the risk of a reduction in secured funding (either through haircut widening or loss of counterparties) and a reduction in operational effectiveness (e.g., increase in the amount of collateral in transit across depots)

Maximum Cumulative Outflow (MCO)

MCO defines the size of the liquid cash pool needed in a stress environment

MCO is based on the following assumptions

- ◆ Cannot issue any short-term or long term debt, or draw on uncommitted bank lines for one year
- ◆ Roll off of all unsecured short-term debt will be covered by the liquidity pool
- ◆ Average secured financing haircut increases
- ◆ Additional funding requirements resulting from a credit rating downgrade
- ◆ Anticipated funding requirement for contingent commitments
- ◆ Opportunistic repurchase of up to \$2 billion of capital



MCO model determines the target level for free cash on hand needed to ensure a liquidity position of at least \$2 billion after a stress period lasting 90 days and a positive position throughout a stress period lasting one year



MCO policy aims to maintain a liquidity pool for Holdings and its unrestricted subsidiaries that covers, in a stressed liquidity environment, all expected cash outflows for one year

Contingency Funding Plan (CFP)

The CFP is a detailed action plan activated in a liquidity event

Components of the Contingent Liquidity Plan

- ◆ Creates an executable plan for a comprehensive response to extreme liquidity events by geographical region, functional area, and business
- ◆ Defines roles and responsibilities within the management framework to execute the plan
- ◆ Provides key contact points within and outside the firm for decision making and implementation
- ◆ Identifies key resources within the firm, including senior management, information, and operational support that need to be mobilized to implement the plan
- ◆ Incorporates a comprehensive communication strategy to consolidate feedback to senior management and creditor institutions.

The Plan was last activated in the aftermath of September 11, 2001 as a precautionary measure

- ◆ Although there was no liquidity event on September 11, 2001, the firm was very long cash and was able to provide liquidity to European banks that had trouble funding their dollar positions
- ◆ Activated primarily because of the state of disarray of the secured funding markets

Liquidity Metrics

Proven Funding Framework

We ended 2008 Q2 in our strongest liquidity position ever

Holdings

- ◆ Ended the second quarter with a record liquidity pool of \$45 billion and cash capital surplus of \$15 billion

Secured Funding

- ◆ \$27 billion of overfunding in the repo book
- ◆ 58% of repo book, excluding governments and agencies, funded with term repo

Lehman Bank Entities

- ◆ Record \$46 billion of assets funded in our banks at the end of May

Unencumbered Assets

- ◆ Not included in the liquidity pool are unencumbered assets \$60.6 billion in unregulated subsidiaries and \$87.3 billion in regulated subsidiaries as of May 31 and the liquidity pools held at the bank entities and broker dealers

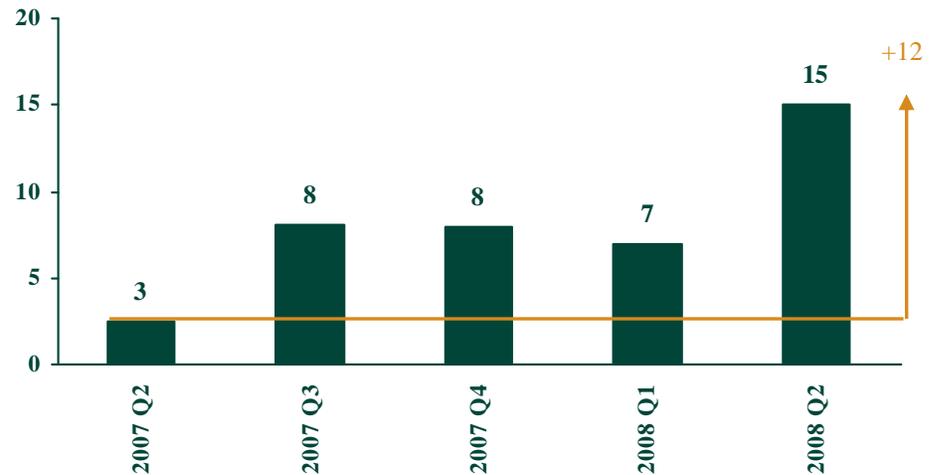
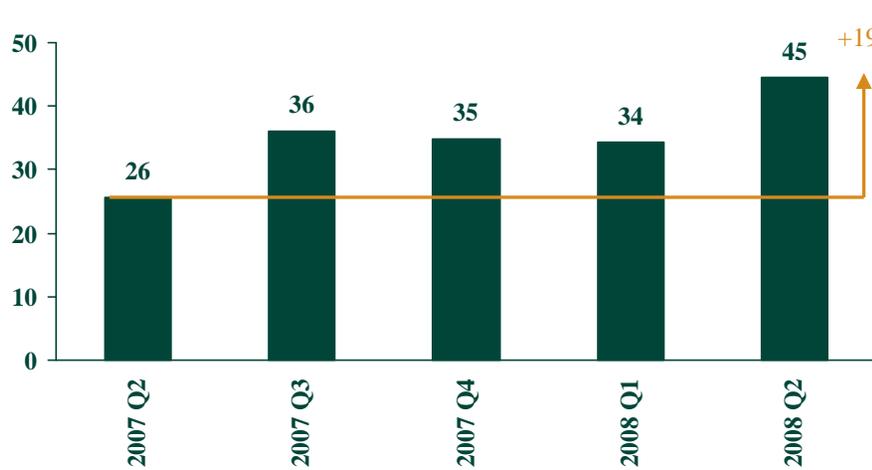
Holding's Liquidity

Record liquidity pool and cash capital surplus

- ◆ Liquidity pool is managed by Treasury for the Holding Company. It is invested in cash and cash equivalents (e.g., money market funds) and good quality collateral for which there is ample unused funding capacity with external counterparts
- ◆ Since the third quarter of 2007 when the funding environment became more challenging, we have grown our liquidity pool by \$19 billion and our cash capital surplus by \$12 billion
 - We closed the second quarter of 2008 with a record liquidity pool of \$45 billion
- ◆ Holdings' cash capital surplus historically fluctuated in a range of \$2 - \$6 billion. During the summer of 2007, the Firm conservatively increased the target to \$4 - \$7 billion
 - Cash capital surplus also at record levels of \$15 billion at the end of the second quarter

Liquidity Pool (\$ billions)

Cash Capital Surplus (\$ billions)

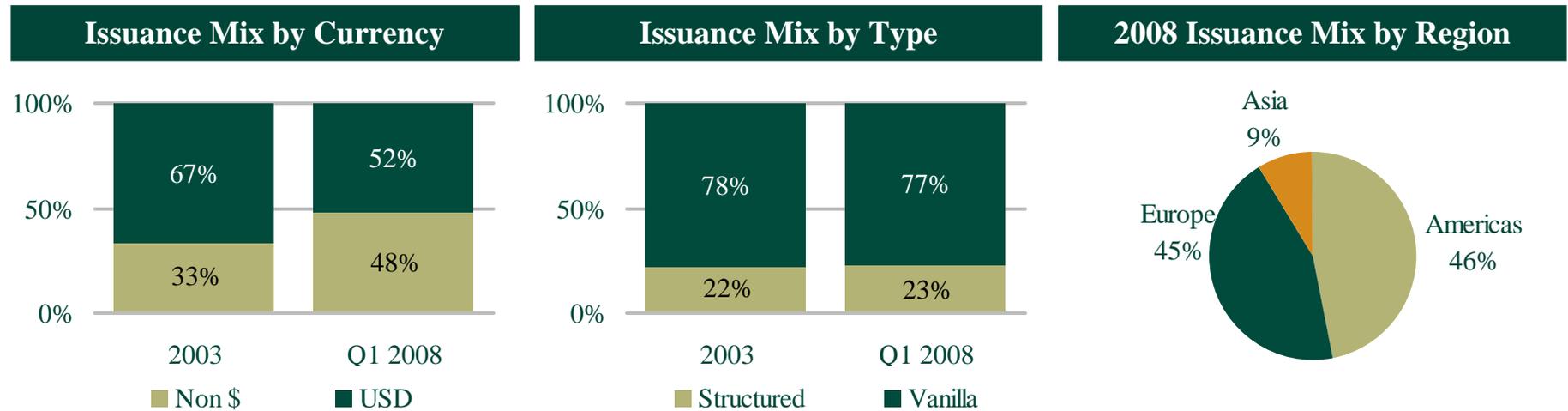


Funding Strategy

Funding Diversification - Needs to be Updated

Diversify issuances by currency, type and region to broaden debt investor base

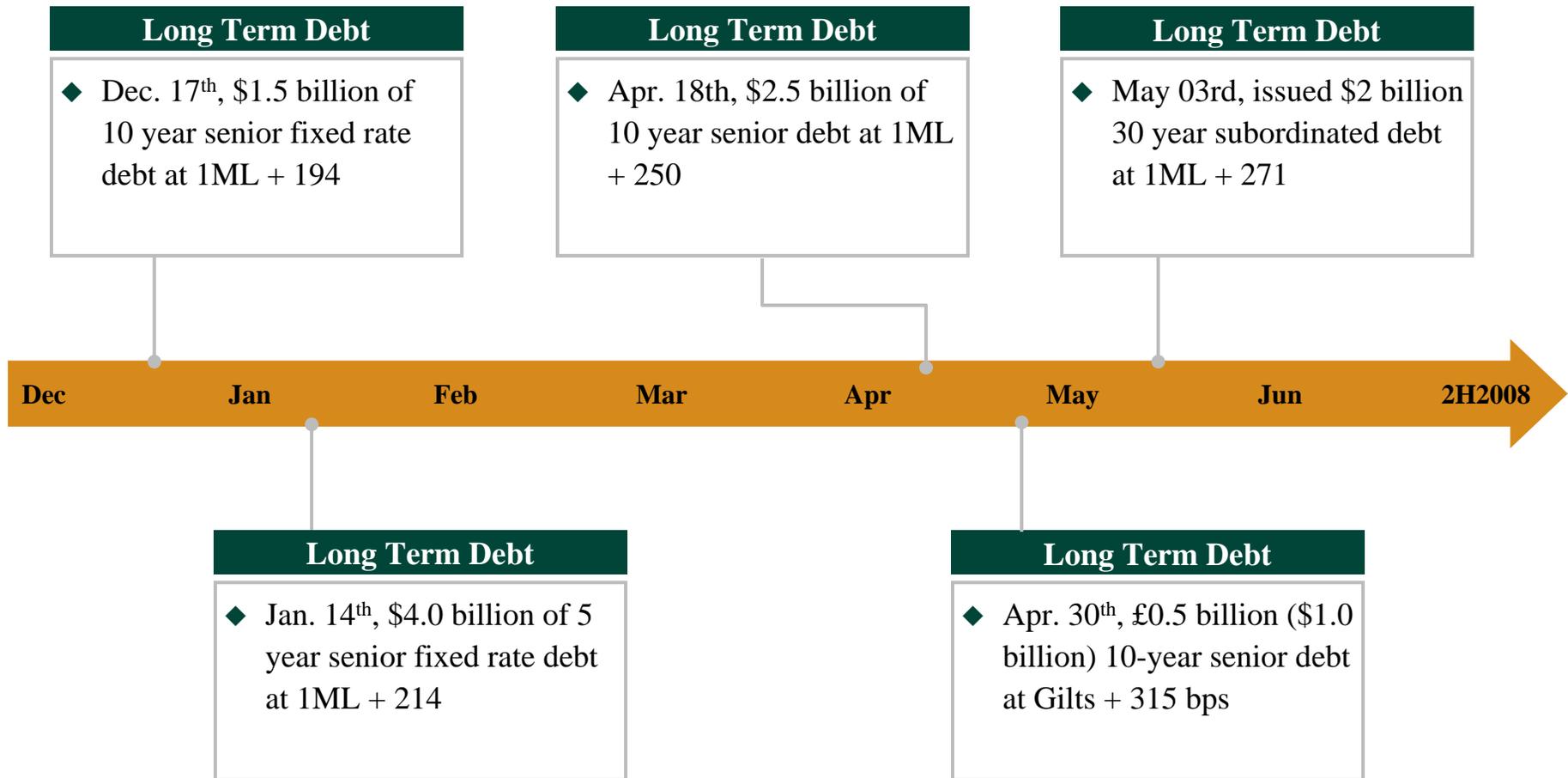
- ◆ Currency sources - currency base is diversified, ~ 48% of long-term debt issued in currencies other than USD
- ◆ Funding instruments - in addition to plain vanilla debt, diversify funding base by issuing structured notes
- ◆ Investor base - diversify issuances geographically with ~ 53% of long-term debt portfolio issued in Europe and Asia



2008 Funding Plan Was Completed in 1st Half of the Year

Funding Strategy

Benchmark Issuances



Although we completed debt issuance program, we may issue further during the latter part of the year to “pre fund” 2009 debt issuance requirements

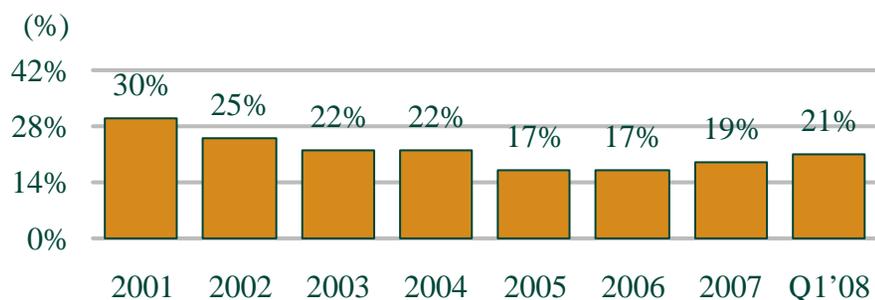
Managing Rollover Risk - UPDATE

Funding Strategy

Limit rollover risk by distributing debt maturities

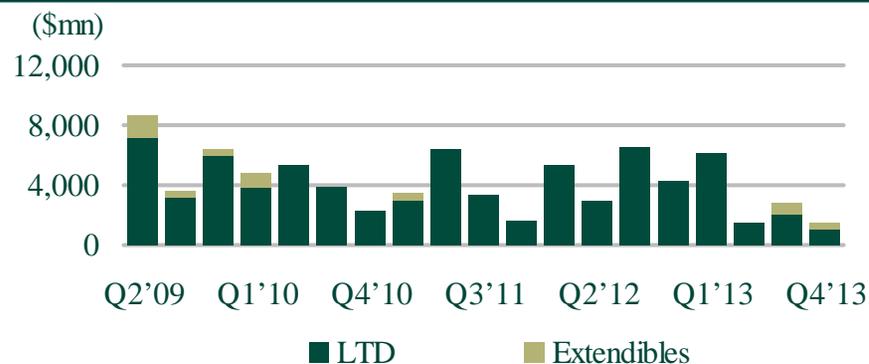
- ◆ Reduce the impact of a liquidity event by not relying on short-term debt
- ◆ Instead, increase the share of debt that is long-term while ensuring that the percentage of maturing long-term debt is no more than 12.5%, 17.5% and 30.0% of outstanding long-term debt borrowings over any 3-month, 6-month and 12-month horizon, respectively

Short Term Debt to Total Debt



(\$bn)	2001	2002	2003	2004	2005	2006	2007	Q1'08
St Debt ⁽²⁾	12.5	10.3	9.9	9.9	11.4	20.6	28.1	34.5
Total Debt	42.3	41.1	45.9	59.3	65.3	101.8	151.2	162.8

Maturing Long-Term Debt⁽¹⁾



Months	Limits	Actual	Period
3	12.5%	16,051	7% 8,881 3/01/09 – 5/31/09
6	17.5%	22,472	10% 12,675 11/01/09 - 4/30/10
12	30.0%	38,523	18% 23,646 5/01/12 - 4/30/13

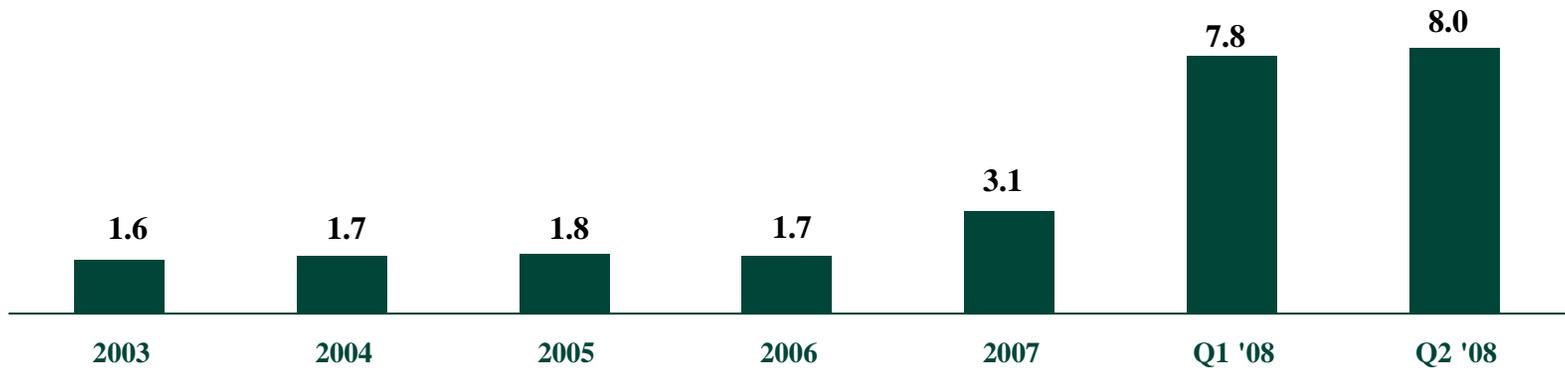
1. \$5.05 billion of extendibles are shown at their earliest maturity dates. Extendibles are long-term debt, the earliest maturity date of which is automatically extended unless debt holders instruct us to redeem their debt. Because the redemption notification must occur at least one year prior to the earliest maturity date, extendibles are included in long-term debt. Moreover, because the earliest maturity date generally is extended, extendibles “roll” through the long-term debt profile.
2. Short term debt includes current portion of long term debt.

Commercial Paper

Strategic use of commercial paper rather than as a funding source for core requirements

- ◆ Use term commercial paper to mitigate short-term liquidity outflows such as unforeseen operational friction (fails), a sudden drop in prime broker lock-ups or sudden changes in secured funding
 - Do not use commercial paper to fund core requirements or illiquid assets because it is not a good source of cash capital
- ◆ Issue overnight commercial paper for two reasons
 - As a way to introduce new investors to Lehman Brothers’ commercial paper in the hope that they will buy term CP over time – as evidenced by the growth in our term CP program in April and May
 - To measure sentiment toward Lehman Brothers: CP investors tend to be lead indicators of improving markets
- ◆ Conservatively do not attribute any liquidity value to overnight CP program even though there is still a market, albeit a small one, in most market environments

Commercial Paper Outstanding (\$ Billions)



Rating Agency Comments on Lehman Liquidity

The rating agencies have recently commented favorably on the Firm's liquidity and have also been supportive of recent Fed action to provide additional solutions to an industry-wide structural liquidity issue

- ◆ "...its excess liquidity position (\$34 billion at Feb. 29, 2008) is among the largest proportionately of the U.S. broker-dealers, and its sources-to-uses ratio is the strongest of the five."
 - S&P, Research Update; March 21, 2008
- ◆ "Lehman has consistently been among the top financial institutions in managing risk, including market, credit, and liquidity risks."
- ◆ "...Lehman's liquidity management and position remain robust and are underpinned by a funding framework that is scaled to the firm's expectations for, and vetting of, reliable secured funding..."
 - Moody's, Research Update; March 17, 2008
- ◆ "Liquidity remains strong with Lehman's lower reliance on short-term funding relative to its peers..."
- ◆ "...Lehman has managed its liquidity well in the last eight months."
 - Fitch, Research Update; April 1, 2008
- ◆ "Lehman's liquidity position is robust..."
 - DBRS, Research Update; March 19, 2008

Lessons Learned From Bear Stearns Liquidity Event

Key Liquidity Metrics At Lehman Brothers & Bear Stearns

Lessons Learned From Bear Stearns Liquidity Event

- ◆ Lehman Brothers had stronger liquidity metrics at the end of Q1 '08 than Bear Stearns
 - 60% greater balance sheet but 130% greater equity
 - Bear Stearns' short-term debt stood at 1.5x its liquidity pool vs. 1.0x for Lehman Brothers
- ◆ Bear Stearns had very few unencumbered assets
 - Half of BSC STD was secured, which might have exacerbated the liquidity crisis in view of the exceptionally low amounts of unencumbered assets
- ◆ Bear Stearns was very reliant on customer free credit balances; if it lost these, it would need to quickly create substantial secured funding capacity for equities at a time when lenders would be likely to pull away
- ◆ Bear Stearns had almost no margin for error in terms of liquidity management. A reduction in short-term debt or in customer free credit balances would leave it in a precarious liquidity position

Q1 '08 Key Liquidity Metrics (\$ billions)

	<u>Bear Stearns</u>	<u>Lehman Brothers</u>	<u>LEH / BSC</u>
Net balance sheet	254	397	1.6x
Net Leverage	22.6x	15.4x	0.7x
Liquidity pool	17	34	2.0x
STD excluding current portion	16	16	1.0x
Current portion of LTD	10	(E) 19	1.9x
Total short-term debt	26	35	1.3x
Short-term debt / Liquidity pool	1.5x	1.0x	0.7x
Unencumbered assets	14	161	11.5x
Free credit balances	43	13	0.3x

Lehman Brothers Would Have Reacted Differently

Lessons Learned From Bear Stearns Liquidity Event

Bear Stearns Liquidity Crisis

Lehman Brothers

- | | |
|--|--|
| <ul style="list-style-type: none"> ◆ “At first, some counterparties began pulling back from providing unsecured lending.”
 ◆ “Then the same reluctance to deal with Bear was extended to secured lending on less liquid and lower-quality securities.”
 ◆ “Some skittish prime brokerage clients began moving their cash balances elsewhere.”
 ◆ “As rumors swirled about Bear's financial position, these actions in turn influenced other counterparties.”
 ◆ “Clients and lenders began also to reduce their exposure to Bear Stearns. This, in turn, created large volumes of novations of derivative contracts.” <ul style="list-style-type: none"> • SEC Chairman Cox, Address to the Security Traders 12th Annual Washington Conference, May 7, 2008 | <ul style="list-style-type: none"> ◆ No reliance on short-term unsecured funding. Liquidity framework assumes that unsecured debt cannot be rolled in a liquidity event
 ◆ More conservative secured funding approach <ul style="list-style-type: none"> – Less liquid assets (e.g., mortgages) funded with cash capital – Overfunding in lower quality collateral (e.g., high yield corporates) to avoid having to rely on new funding – Very well coordinated and proactive program of communicating with our creditors during the liquidity event. All senior management, including Dick Fuld, involved in calling key contacts at counterparties
 ◆ Prime broker business overfunded by reposing long positions to avoid relying on customer free credit balances ◆ Lock ups calculated on a daily basis during a liquidity event
 ◆ Treasury, Investor Relations and Corporate Communications are in constant communication with key stakeholders. Significant amount of senior management’s time spent to address rumors and to reassure key stakeholders
 ◆ No change in “business as usual” philosophy. Disputed calls in derivatives businesses are normal considering lack of transparent marks in the OTC derivatives markets |
|--|--|

Lessons From Bear Stearns Liquidity Event

Lessons Learned From Bear Stearns Liquidity Event

- ◆ The Bear Stearns liquidity event highlighted the liquidity risk in the broker dealers, specifically secured funding risk and prime broker liquidity risk
 - Secured funding capacity disappeared for harder to fund assets such as mortgages or high yield securities, which we fund with cash capital (mortgages) or which we overfund (high yield securities)
 - As prime broker clients withdrew their free credit balances, the business started consuming cash and Bear Stearns was unable to find new secured funding capacity to replace the lost cash. This is the reason why we structured the business to be cash generative

- ◆ Although the mitigation of both of these risks was already included in our Funding Framework, the speed at which the crisis evolved (\$17 billion liquidity loss at Bear Stearns in 48 hours) made us refine our liquidity stress scenario
 - Revised liquidity stress scenario is significantly more conservative than what we experienced during the week of March 17