

LEHMAN BROTHERS

Single Transaction Limit Framework

Draft

Jan, 2005

Introduction

The Firm has developed a comprehensive regime of limits for risk and liquidity. Individual transactions need to be accommodated within:

- Single Obligor Limit
- Business and divisional risk limits
- Divisional Cash Capital and Balance sheet limits
- Divisional Less Liquid Asset limits

Even if a transaction can be accommodated within these limits there is an additional concern about very large exposures to individual issuers, which if things go wrong could result in large potential loss “tail events”.

Could result in:

- Large P&L loss
- Negative publicity
- Scrutiny from ratings agencies, investors, and creditors of the Firm.

Risk Management and Finance propose to set limits to mitigate these risks

These limits are in line with the Firm’s risk tolerance, as described below. Transactions in excess of these limits will be viewed as exceptional, and would require Executive Committee approval

C:\Documents and Settings\CHUCL\Desktop\Lehman\Team 3 RISK Documents\000002_245375_d.tloc

Setting Single Exposure Limits

Setting limits for single exposure requires deciding

- Loss tolerance to a single transaction
- The confidence level (probability) to apply to that potential loss
- How to measure the potential loss

Risk Management and Finance propose the following:

- Set the single exposure potential quarterly loss threshold at \$200 million
- Measure the potential loss at a 99.5 percent confidence level, which is consistent with Lehman's risk equity model and equates to a catastrophic loss.
- Establish, for each transaction type, the size of transaction that at 99.5 percent confidence level will not have a \$200 million or greater loss
- Establish, for each transaction type, the risk factor that corresponds to a quarterly loss at 99.5 percent confidence level
- Potential loss of a transaction with multi tranche and type would be calculated based on the risk factor table to determine whether the transaction would pass the \$200mm quarterly loss threshold
 - Fixed income transactions are segmented by the nature of the commitment and our ability to syndicate
 - Bought Deals
 - Credit Facilities
 - Acquisition Financing
 - They are further divided by:
 - For Investment Grade companies: Rating and Duration of instrument
 - For Non- Investment Grade companies: Secured / Unsecured

C:\Documents and Settings\CHUCL\Desktop\Lehman\Team 3 RISK Documents\000002_245375_d2.doc

- For Acquisition Financing : deals with expected closing shorter than 2 months and longer than 2 months. Within each category, we consider three scenarios: with Business and Market MACs, with one MAC, No MAC.
- Equity block transactions are divided into common equity and convertible positions.
 - For common equity the loss estimate is based on the volatility of the stock and the estimated time required to liquidate the position, based upon historical volume
 - For convertibles the risk is decomposed into its equity and debt components using the methods described above

Methodology

The framework methodology, which is consistent with the methodology adopted for the Firm's risk equity and risk usage models, considers the major sources of risk that could impact any transaction. (See Appendix for details)

Most high yield commitments in the United States have market MACs, Flex Pricing, and / or Flex Structuring; some have business MACs. These provisions mitigate our risk if we cannot syndicate our position down pre-closing.

- If the high yield transaction has both MACs and/or Flex provisions, we assume that Lehman would be able to use those protections to mitigate 50% of the total risk.
- As a result, the single transaction limits are doubled for transaction with both MAsC and/or Flex provisions.
- In situations where only one MAC applies, transactions are deemed to have the benefit of 20% of risk mitigation. Therefore, limits are 25% higher than limits for transactions without any MAC provision.

While we have calculated the potential exposure at a high confidence level, worst case exposure could exceed our loss tolerance.

- Propose a maximum cap of \$1.8 billion for unsecured transaction and \$3Bn for secured transaction

- This limit, which is increasingly applied to investment banks by the rating agencies, is set at 15 percent and 25 percent of the Firm's tangible common equity plus preferred shares for secured and unsecured respectively
- In practice, this limit would apply to some investment grade exposures and equity block trades.

All individual transactions have unique attributes which add risk or mitigate risk which cannot be accounted for in a simple set of rules. As part of its review process, Risk Management will use its judgment in determining how to weigh these factors in the review process. Examples are:

- Nature of security or collateral.
- Sector/Industry of the borrowers
- Firm's ability to syndicate
- Pricing flex
- Aggregation of exposure, including counterparty trades
- Hedging strategies
- Syndicate Partners – Quality, reputation, and financial condition of partners
- Equity Sponsors - Quality, reputation, and financial condition of sponsors

For off-market transactions (typically high grade CP backstops) limits will be reduced by the amount of the underpricing. (As an example, for a loan being marked initially at a dollar price of 95, the limit will be reduced by 5%)

C:\Documents and Settings\CHUCL\Desktop\Lehman\Team 3 RISK Documents\000002_245375_d.doc

**FOIA CONFIDENTIAL TREATMENT REQUESTED
BY LEHMAN BROTHERS HOLDINGS INC.**

LBEX-DOCID 245375

Limits

Credit – Investment Grade (\$200mm Quarterly Loss Threshold)

See attachment

Credit – Non Investment Grade (\$200mm Loss Threshold)

See attachment

1. Limits are derived based on a \$200mm quarterly loss at 99.5% C.L.
2. With Business and Market MACs - deals with both market and business MAC, and/or pricing flex
3. With Business MAC or Market MAC - deals with Business MAC or Market MAC, and/or pricing flex
4. Credit facility refers to most of FRL, refin, recap deals
5. Deals with expected closing in more than 2 months are usually deals that need lengthy regulatory, or share holder approval
6. In general, acquisition financing (AF) deals (new borrowers) demonstrate smaller default probability (1% per Lehman research) than that of credit facility (CF, mature borrowers), but longer lead time due to due diligence, regulatory approval etc. All these are accounted for in the proposal
7. Limits are floored at 280mm for unsecured deals as loss given default is 200mm assuming 29% recovery. Same is true for secured deals with 65% recovery assumption. Recovery assumptions are based Moody's 2004 default and recovery study
8. For sectors with higher recovery on average, e.g. utility sector, the limits could be bumped up by 15% for secured and 30% for unsecured on a case by case basis.
9. Acquisition Financing (AF) limits = Credit Facility (CF) limits /sqrt(3) with lower default prob. Bought deal limits = 2* limits for Credit facility (CF)
10. AF with expected closing less than 2 months = AF with expected closing more than 2 months/sqrt(2)
11. with both MACs and/or flex = no MAC *2
12. With one MAC and/or flex = no MAC /0.8. The assumption here is that, with both MACs, we can mitigate 50% of the risk, and with one MAC, we can mitigate 20% of the risk. We
13. The limits derived from above are capped by 15% and 25% of tangible common equity plus pref shares as caps for unsec and sec respectively. This comes out to be \$1.8Bn for unsec and \$3Bn for sec.

Equity

	Days to place				
Volatility	5 Days	10 Days	20 Days	40 Days	80 Days
25%	3,000	2,200	1,700	1,300	900
50%	1,500	1,200	900	700	500
75%	1,000	800	600	500	400

Convertibles

	Maturity		
Rating / Maturity	0-2 Years	2-5 Years	5+ Years
Aa+	2500	1500	1000
A	1500	1000	750
Baa	1200	1000	600
Ba		750	
B		600	
Caa		400	

Cap \$1.8Bn

Equity

	Days to place				
Volatility	5 Days	10 Days	20 Days	40 Days	80 Days
25%	1,800	1,800	1,800	1,300	900
50%	1,500	1,200	900	700	500
75%	1,000	800	600	500	400

Convertibles

	Maturity		
Rating	0-2 Years	2-5 Years	5+ Years
Aa+	1,700	1,500	1,000
A	1,500	1,000	750
Baa	1,200	1,000	600
Ba		750	
B		600	
Caa		500	

Liquidation Assumptions:

Confidence level: 99.5%

Share prices decline as follows: $\exp(-2.576 * SD * \text{sqrt}(\text{time}))$

<= 10 days to place: sell 10% of average daily volume per day

> 10 days to place: sell 5% of average daily volume per day

Appendix

Definitions:

- Fixed income transactions are segmented by the nature of the commitment and our ability to syndicate
 - Bought Deals – (High Liquidity) – Immediately syndicable, liquid transactions where Lehman has in-depth knowledge of the credit, and where the market is familiar with and receptive to the issuer. Transactions are expected to be fully syndicated within days (typically a bought or backstopped bond deal)
 - Credit Facilities – (Medium Liquidity) – Closing of the commitment or marketing period may extend from 1 to 3 months to complete (typically an normally underwritten bank loan)
 - Acquisition Finance – (Low Liquidity) – Requires a lengthy period to market or has a closing of 3 months or greater (typically an acquisition financing)
- They are further divided by:
 - For Investment Grade companies: Rating and Duration of instrument
 - For Non- Investment Grade companies: Secured / Unsecured (Secured if collateralized by hard assets or stock of an unlevered subsidiary, otherwise deemed unsecured)
- Equity block transactions are divided into common equity and convertible positions.

- For common equity the loss estimate is based on the volatility of the stock and the estimated time required to liquidate the position, based upon historical volume
- For convertibles the risk is decomposed into its equity and debt components using the methods described above

Fixed Income Transactions

Spread risk: the risk of spread widening

Interest rate risk: the risk of change in the overall level and slope of the curve

Specific risk: the risk that the transaction return will deviate from the average return of its rating and duration band

Event risk: the risk of a ratings downgrade or default

Equity Transactions

Equity price risk: the risk that the market price of the underlying will fall as a block trade or syndicate position is unwound. It is driven by the volatility of the underlying stock and by its liquidity, which determines how fast a block trade or syndicate position is unwound.