[The Journal of Financial Crises](https://elischolar.library.yale.edu/journal-of-financial-crises)

Volume 1 | Issue 1

2019

The Lehman Brothers Bankruptcy C: Managing the Balance Sheet Through the Use of Repo 105

Rosalind Z. Wiggins
Yale University

Andrew Metrick
Yale University

Follow this and additional works at: https://elischolar.library.yale.edu/journal-of-financial-crises

Part of the Banking and Finance Law Commons, Corporate Finance Commons, Economic History Commons, Economic Policy Commons, Law and Politics Commons, and the Policy Design, Analysis, and Evaluation Commons

Recommended Citation

Wiggins, Rosalind Z. and Metrick, Andrew (2019) "The Lehman Brothers Bankruptcy C: Managing the Balance Sheet Through the Use of Repo 105," *The Journal of Financial Crises*: Vol. 1 : Iss. 1, 80-99.
Available at: https://elischolar.library.yale.edu/journal-of-financial-crises/vol1/iss1/4

This Case Study is brought to you for free and open access by the Journal of Financial Crises and EliScholar – A Digital Platform for Scholarly Publishing at Yale. For more information, please contact journalfinancialcrises@yale.edu.

The Lehman Brothers Bankruptcy C: Managing the Balance Sheet Through the Use of Repo 105[1]

Rosalind Z. Wiggins,[2]
Andrew Metrick[3]

Yale Program on Financial Stability Case Study 2014-3c-v1
October 1, 2014, Revised: July 10, 2015; February 27, 2019

Abstract

The Lehman Brothers court-appointed bankruptcy examiner produced a 2,200-page report detailing possible claims that the estate might pursue. The most surprising revelation of the report was that during its last year Lehman had relied heavily on an unusual financing transaction—Repo 105. The examiner concluded that Lehman's aggressive use of Repo 105 transactions enabled it to remove up to $50 billion of assets from its balance sheet at quarter-end and to manipulate its leverage ratio so that it could report more favorable results. This case considers in-depth Lehman's questionable use of Repo 105 transactions and its impact.

---

[1] This case study is one of eight Yale Program on Financial Stability case modules considering the Lehman Brothers Bankruptcy:

- *The Lehman Brothers Bankruptcy A: Overview*
- *The Lehman Brothers Bankruptcy B: Risk Limits and Stress Tests*
- *The Lehman Brothers Bankruptcy C: Managing the Balance Sheet Through the Use of Repo 105*
- *The Lehman Brothers Bankruptcy D: The Role of Ernst & Young*
- *The Lehman Brothers Bankruptcy E: The Effects on Lehman's U.S. Broker-Dealer*
- *The Lehman Brothers Bankruptcy F: Introduction to the ISDA Master Agreement*
- *The Lehman Brothers Bankruptcy G: The Special Case of Derivatives*
- *The Lehman Brothers Bankruptcy H: The Global Contagion*

Cases are available from the Journal of Financial Crises.

[2] Director, The Global Financial Crisis Project and Senior Editor, Yale Program on Financial Stability

[3] Janet L. Yellen Professor of Finance and Management, and YPFS Program Director, Yale School of Management

1. Introduction

In mid-2007, Lehman Brothers faced a critical dilemma. As a result of the decline in the subprime mortgage market and the related turmoil in the financial markets, particularly the interbank lending markets, financial experts and the rating agencies were urging that investment banks decrease their leverage

In November 2007, Lehman reported a leverage ratio of 30.7x (Lehman 2007). This ratio had been 23.9x in 2004 (Ibid.) and had remained somewhat constant until 2006 when Lehman adopted a more aggressive growth strategy. Lehman's high-leverage, high-risk business model was similar to that of its peers. However, Lehman held greater amounts of real estate assets than some of it peers which worsened its risk profile as housing continued to stumble. At the end of its 2007 fiscal year, Lehman Brothers held $111 billion in commercial or residential real-estate-related assets and securities, more than double the $52 billion that it held at the end of 2006, and more than four times its equity.

Lehman's failure to reduce its leverage could result in a ratings downgrade, which would have an immediate negative effect on its ability to borrow. As a result, in January 2008, the firm instituted a deleveraging initiative—aiming to reduce its large positions in commercial and residential real estate. However, it had difficulty selling these types of assets at acceptable prices because the market had already begun to weaken. Also, Lehman was reluctant to sell such assets at discounted prices. Not only would doing so risk Lehman taking losses on the sold assets, but it would call into question the value of its remaining assets of similar type and compel Lehman to mark them to market value, potentially recognizing additional losses. Following the near collapse of Bear Stearns in March 2008 (in which subprime mortgages were a key factor), things worsened and rumors circulated that Lehman Brothers would be the next investment bank to go under. (FCIC 2011).Lehman began casting around for a strategy that would secure the firm's future and allay the market's fears. As a solution failed to crystalize, some parties began to minimize their dealings with the troubled bank, including refusing to roll over their repurchase and resale (repo) financing, on which Lehman was dependent for day-to-day operations. As Lehman responded to these pressures, it turned to a particular type of repo transaction known as "Repo 105" to manage its balance sheet and leverage ratio. Lehman accounted for Repo 105 transactions as "sales," rather than as "financings," which enabled it to temporarily remove up to $50 billion of assets from its balance sheet at quarter-end. Lehman also used the cash generated from Repo 105 transactions to pay off other liabilities, thereby reducing its net leverage ratio. It did not disclose these acts to its board of directors or the public. Anton R. Valukas, the Lehman bankruptcy examiner, later concluded that Lehman's use of Repo 105 was solely for the purpose of managing its books and manipulating its publicly reported financial information.

The balance of this case is organized as follows: Sections 2 and 3 provide, respectively, detailed explanations of standard repo transactions and of Statement of Financial Accounting Standard (SFAS) 140, which was the basis for Lehman's Repo 105 transactions. Section 4 describes Lehman's interpretation of SFAS 140 and its design of Repo 105, while Section 5 discusses in detail Lehman's use of Repo 105. Section 6 reviews Lehman's disclosures. Section 7 considers additional impacts and risks that Repo 105 created for Lehman, and Section 8 concludes by describing changes to formal and informal regulatory standards prompted by the revelation of Repo 105.

Questions

1. How do Repo 105 transactions differ from standard repo transactions?
2. Was Lehman's analysis of SFAS 140 and its structuring of Repo 105 transactions justifiable?
3. What were the economic, ethical, and legal impacts of Lehman's use of Repo 105 transactions?
4. Did Lehman make proper disclosures in light of its use of Repo 105 transactions and its obligations?

2. Standard Repo Transactions

In 2007, Lehman was a large and successful financial services provider that offered a wide variety of sophisticated products and services to a vast range of global clients. The firm aggressively pursued opportunities in proprietary trading, derivatives, securitization, asset management, and real estate. Like most of its investment-banking peers, it employed a highly leveraged business model that enabled the firm to maintain $691,063 million of assets on just $22,490 million of stockholders' equity (a leverage rate of 30.73) (Lehman 2007). (See YPFS case study Wiggins et al. 2014A for more information regarding Lehman's business.)

This business model also required Lehman to raise billions of dollars in funding each day just to operate. Like most investment banks, it relied heavily on the unregulated short-term wholesale funding of commercial paper loans and repos carried on by investment banks, hedge funds and other institutional investors—the "shadow banking system"—and daily borrowed billions of dollars through repo transactions to finance its operations.[4]

As Gorton and Metrick (2012) describe, a repo is a type of short-term debt instrument used by investment banks and other financial institutions to finance their inventory positions. It is essentially a short-term loan that is secured by collateral that the borrower delivers to the lender. The borrower agrees to repurchase the collateral when it repays the loan. Standard repo transactions are a key part of investment-bank financing and liquidity management.

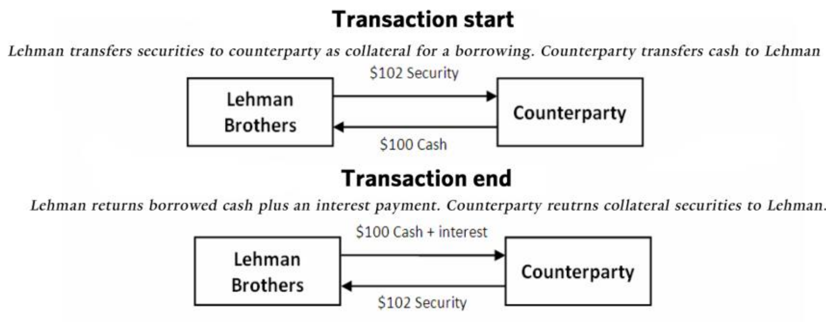
A repurchase agreement embodies a two-part transaction as shown in Figure 1. In the first part, a "depositor" (the "lender") deposits cash at a bank (the "borrower"), such as Lehman. The borrower will pay the lender interest on the cash ("repo rate") as a fee for its use. To guarantee the cash deposit, the bank transfers collateral to the lender in the form of securities which the lender takes physical possession of. If the collateral delivered by the borrower is discounted, the borrower is said to have paid a "haircut." For example, if the borrower delivers securities worth $102 million, but receives only $100 million cash in return, it has paid approximately a 2% haircut. Although the depositor/lender takes possession of the collateral, repos are structured so that the economic benefits of owning the

[4] The shadow banking system is the name given to the network of financial institutions ("shadow banks") that participate in financing activities outside of the federally regulated and insured banking system. This includes hedge funds, investment banks, and money funds. Whereas depository banks insure liquidity through the Federal Reserve System and federal deposit insurance, financial institutions in the shadow banking system gain liquidity by offering assets as collateral for short-term borrowings from other institutions. Shadow banks loan funds through a wide range of securitization and secured funding techniques such as asset-backed commercial paper (ABCP), asset-backed securities (ABS), collateralized debt obligations (CDOs), and repurchase agreements (repos). Although no official estimate is available, the size of this market has been estimated to be between $10 and $16 trillion, or equal to, or in excess of, the U.S. commercial banking sector Gorton and Metrick 2012; Pozsar, et al., 2012).

securities used as collateral (e.g., coupons paid, capital gains and losses) remain with the original owner.

In the second part of the repo, the lender agrees to sell back the securities given as collateral to the borrower at the end of the repo, and the borrower agrees to repurchase them at a price equal to the amount of cash originally lent, plus the agreed-upon interest.

Figure 1: Ordinary Repo Flow Diagram



Source: Examiner's Report, Vol. 3, 768.

Repos are typically short-term, with overnight repo being the most common, but repos can be as long as one year. Many overnight repos are repeatedly rolled over, extending their length well beyond their original term. If the borrower goes bankrupt, does not repay the cash, or does not make the interest payment when due, then the lender can terminate the repo agreement and sell the securities held as collateral.

Lehman accounted for a standard repo transaction as a loan or "financing" (i.e., a secured borrowing) with the securities pledged as collateral remaining on the bank's books. The incoming borrowed cash was booked as an increase in the bank's assets (borrowings). It also booked the obligation to repay the cash (and repurchase the collateral) as an offsetting liability. Thus, total assets remained unchanged by a standard repo.

3. SFAS 140 and Treating Repos as "Sales"

Statement of Financial Accounting Standard (SFAS) 140 took effect in September 2000 and provided accounting and reporting standards for distinguishing transfers of financial assets that are "sales" from transfers that are "financings." Under SFAS 140, the transfer of financial assets in which the transferor surrenders control of the assets should be accounted for as a sale. Under SFAS 140, paragraph 9, the transferor is considered to have surrendered control if, and only if, the following three conditions are met (paraphrased):

a) The transferred assets have been *isolated* from the transferor—put presumptively beyond the reach of the transferor and its creditors, even in bankruptcy or other receivership.
b) The transferee has the right to *pledge or exchange* the transferred assets.

c) The transferor does not maintain *effective control* over the transferred assets.

SFAS 140 provides that, if these three criteria are met, the transaction should be accounted for as a sale. If any criterion is not met, then the transaction should be accounted for as a secured financing. As a general matter, most repo transactions satisfy subparagraph (b) above but fail subparagraph (a) or (c), and are accounted for as financings (Herz 2010). (See Appendix A for the complete text of SFAS 140, paragraph 9 and related paragraph 218.)

4. Lehman's Interpretation of SFAS 140 and Repo 105

Shortly after SFAS 140 took effect in September 2000, Lehman developed a policy and program explaining how the firm might benefit from the standard. Lehman made certain favorable interpretations regarding the standard's requirements for a "true sale" and "effective control." These interpretations allowed it to determine that repo transactions that were overcollateralized by 5% (at a time when the standard haircut was 2%) would satisfy the standard's requirements and permit it to account for these transactions as sales, hence the name Repo 105 (Lehman 2006A, Herz 2010).

Subparagraph 9(a)— True Sales

Subparagraph 9(a) of SFAS 140 provides that to characterize a repo transaction as a "sale" the transferor must give up effective control of the assets. Further, the transferor is deemed to have given up such effective control if the transferred assets have been "put presumptively beyond the reach of the transferor and its creditors" or legally isolated from the transferor even in the event of the transferor's bankruptcy. This is usually established by a "true sale" at law, and typically a company would secure an opinion from a law firm that the transaction is a true sale to support its accounting characterization (Examiner's Report, Vol. 3).

However, because the U.S. law on point was unsettled, Lehman was unable to find a U.S. law firm that would provide a true sale opinion supporting its intended accounting of Repo 105 transactions as "sales" rather than "financings" under U.S. law.

English law on point, however, was more settled, and Lehman was able to secure a true sale opinion from Linklaters, a major London law firm and main outside counsel to Lehman Brothers, Inc. (Europe) (LBIE), Lehman's U.K. broker-dealer subsidiary. The Linklaters' opinion, however, was limited to the application of English law and stated that it was intended for use only by LBIE (Linklaters 2006).

Despite these limitations, as stated in its Accounting Policy Manual, Lehman relied on the Linklaters' letter for all its firm-wide Repo 105 transactions: "Repos generally cannot be treated as sales in the United States because lawyers cannot provide a true sale opinion under U.S. law. . . The U.K. law firm of Linklaters has issued us true sale opinions covering Repo 105 and Repo 108 transactions documented under a GMRA under English law" (Lehman 2006A).

Subparagraph 9(c) —Effective Control

Subparagraph 9(c) of SFAS 140 provides that in order to characterize a repo transaction as a sale the transferor must relinquish effective control over the transferred assets. The transferor is deemed to maintain effective control if it has the right and obligation to repurchase the collateral. The transferor is deemed to have the right to repurchase the collateral only if it receives adequate cash to "fund substantially all of the costs of repurchasing the same or substantially the same replacement assets" in the event of the counterparty's default.

The transferor does *not* receive adequate cash to fund repurchase of the collateral in transactions where it receives cash equal to between 98 percent and 102 percent of the value of the securities that it delivered as collateral. (SFAS 140, Paragraph 218). Thus, in such transactions, the transferor retains effective control.

It should be noted that the 98% and 102% references were not intended to provide a bright-line rule (Herz 2010). However, the standard also provides that "other collateral arrangements typically fall well outside that guidance (i.e., that the transferor *retains* effective control) (SFAS 140, Paragraph 218).

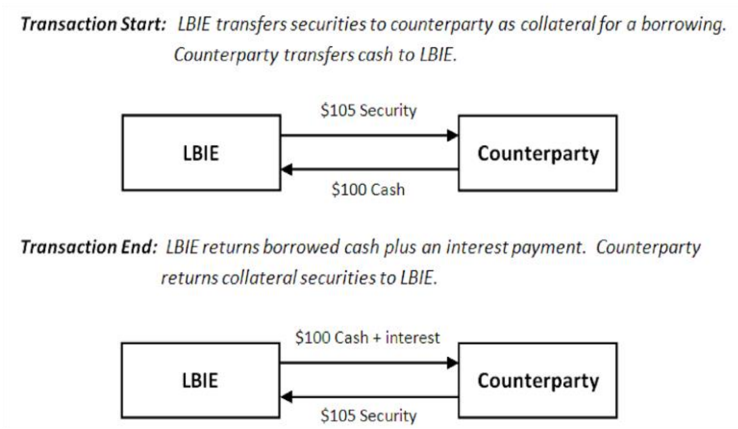
Therefore, even though SFAS 140 never discusses overcollateralization of 5%, Lehman determined that by overcollateralizing repo transactions by 5%, it *would* receive adequate cash to fund repurchasing the same, or substantially the same, replacement assets and therefore could be viewed as having *relinquished effective control* of such collateral rendering the repo transactions sales under. The Lehman Accounting Policy Manual explains it thus:

> "If we can fund substantially all of the cost of purchasing the same or substantially the same replacement assets, we are viewed as having the means to replace the assets, even if the transferee defaults, and we are considered not to have relinquished control of the assets. For purposes of this requirement, we have retained control of the transferred assets if a fixed income security is margined at less than 105% of the cash received. . . Transfers in which we transfer fixed-income securities valued at a minimum of 105% of the cash received are considered to be sales with a forward agreement to repurchase the securities rather than secured financing transactions" (Lehman 2006A).

Based on this interpretation of SFAS 140 and the Linklaters' opinion, each quarter, Lehman's U.S. affiliates transferred billions of dollars of assets to its London affiliate, LBIE, for the sole purpose of entering into Repo 105 transactions with other European entities, enabling Lehman to treat the transactions as "sales" rather than "financings." Because Lehman reported its financials on a consolidated worldwide basis, the location of the transactions was largely benign for accounting purposes as they rolled up into the global results reported by the U.S. parent company.

Despite the different treatment, Lehman's Repo 105 transactions were strikingly similar to its standard repo transactions, which it accounted for as secured financings. They utilized the same documentation, employed similar types of securities as collateral, and involved similar counterparties. Figure 2 illustrates the simplified structure of the two types of repos.

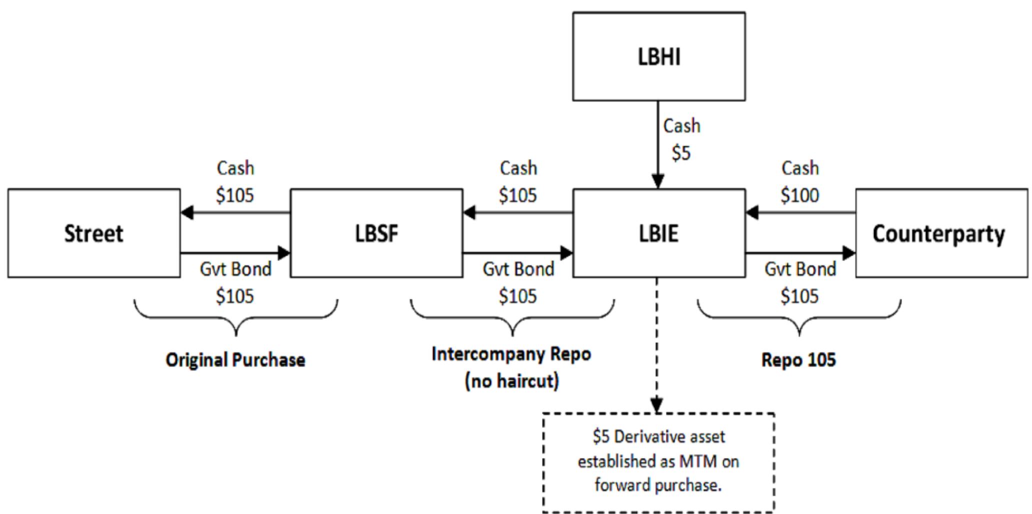
Figure 2: LBIE Repo 105 Flow Diagram



Source: Examiner's Report, Vol. 3, 788.

Lehman's inability to secure a U.S. legal opinion complicated matters somewhat by requiring it to structure Repo 105s through LBIE, its U.K. broker-dealer. Figure 3 shows the intracompany and external elements of a Lehman Repo 105.

Figure 3: Lehman's Complete Repo 105 Structure



LBHI= Lehman Brothers Holding Inc., LBIE= Lehman Brothers International (Europe), LBSF=Lehman Brothers Special Finance

Source: Examiner's Report, Vol. 3, 790.

As the Examiner's Report noted:

> In short, Lehman undertook transactions in a foreign jurisdiction (the United Kingdom) that purported to comply with SFAS 140, where Lehman was unable to obtain a SFAS 140 true-sale opinion from a United States law firm, and Lehman then

relied upon the non-United States-based Lehman entity to ensure that the transaction complied with United States GAAP" (Examiner's Report, Vol. 3).

Limits Established

The 1x Leverage Rule. As part of its internal controls structure, Lehman senior management also established limits on the total amount by which the firm could reduce its balance sheet on any given day by using Repo 105 transactions. As of July 2006, this limit was set at "1x leverage" for Repo 105, or $17 billion. To this was added an additional $5 billion, permitted for similar Repo 108[5] transactions, for a combined total of $22 billion (Examiner's Report, vol. 3). This combined firm-wide total on Repo105/108 transactions was increased to $25 billion as of January 2008 (Ibid.).

During 2006, Lehman's use of Repo 105 stayed within or very close to its established limit. However, beginning in 2007, the firm's use escalated and then consistently exceeded the established $25 billion limit in every quarter. In each of the first and second quarters of 2008, Lehman exceeded these limits by approximately 100%, employing a combined total of $49.102 billion and $50.383 billion, respectively (Ibid.).

The 80/20 Rule and the 120% Rule. In addition to the firm-wide cap on total Repo 105 usage, management created two additional rules. First, the "80/20" or "continual use" rule specified that the firm should maintain a minimal level of continual use of Repo 105 transactions throughout the quarter. Apparently, this was intended to ensure that the amount of Repo 105s outstanding at any time was 80% of the amount outstanding at month-end. The second rule, the 120% rule, prescribed that the maximum volume of Repo 105 transactions at quarter-end should not exceed 120% of the average daily usage during the month. Lehman financial executives described the purpose of these rules as "to make sure there was a legitimate business purpose" for Repo 105 transactions (Examiner's Report, Vol. 3). However, the rules were consistently disregarded by Lehman, which would not have been able to meet its balance sheet targets without its aggressive use of Repo 105 at the higher levels (Ibid.).

Accounting Treatment

The reason that Lehman would choose to employ Repo 105 transactions rather than standard repo transactions lies in the different accounting associated with these transactions and the differing impact that they had on its balance sheet and financial measures. As an example, assume that Lehman has on its balance sheet an asset (securities) worth $105 million, a purchase it financed with $105 million of unsecured commercial paper. The simple accounting treatment of this transaction would be:

Assets	**Liabilities**
+ $105M in securities	**+ $105M commercial paper**

The purchase of this security results in a net increase of $105M in both assets and liabilities. Alternatively, suppose that the transaction was financed with repo. For simplicity, at this stage we assume a zero "haircut" on this collateral, so Lehman is able to borrow the full $105

[5] Repo 108 transactions were similar to Repo 105s but utilized equity rather than debt securities as collateral and an 8% haircut. Lehman also treated Repo 108s as sales. Their volume, however, never rose to more than a fraction of that of Repo 105s.

million. On the balance sheet, the transaction would be booked as a $105 million asset (designated as "encumbered" by the repo), and a $105 million liability for the payment required by the repurchase leg.

Assets	**Liabilities**
+ $105M in securities (encumbered)	**+ $105M repo loan**

Once again, the accounting treatment would leave Lehman with an increase of $105M for both assets and liabilities. Contractually, the transaction would have been documented as a sale to the third party with Lehman obligated to repurchase the securities when it repays the loan. However, because of this repurchase obligation and the fact that Lehman retains certain rights of ownership (such as any coupon rights), under the accounting rules, the transaction is treated as a "secured financing" not a true sale, and the securities remain on Lehman's books as an encumbered asset.

To make this case more realistic, we add a haircut to the repo loan. For example, if the lender had some concerns about the borrower's ability to repay or about the *future* value of the collateral conditional on default, it would be prudent to lend something less than $105 million today. For example, if a lender is only willing to provide $103 million, then Lehman would need to find $2 million of cash from somewhere else. The accounting treatment of this transaction would be as follows:

Assets	**Liabilities**
+ $105M in securities (encumbered) - $2M in cash	**+ $103 repo loan**

For a net increase of $103 million on both sides of the balance sheet.

So why would Lehman utilize Repo 105 transactions in which it would be able to borrow only $100 million against the securities worth $105 million? Lehman was under pressure to reduce its balance sheet and its leverage. It concluded that, unlike standard repos, SFAS 140 would permit it to treat Repo 105 transactions as true sales of the underlying securities, not just a pledge of them as security for the loan. Thus, it could account for the transaction as a "sale" with a forward purchase commitment, and the securities underlying Repo 105 transactions could be removed from the balance sheet. Under this accounting treatment, the balance sheet would look like this:

Assets	**Liabilities**
- $5M in cash +$5M derivative	**NOTHING**

The securities and the repo loan do not appear anywhere, and the total assets and liabilities are unchanged. Instead, it is as though the securities were purchased for $105 million, sold for $100 million (hence the cash reduction of $5 million), with an offsetting derivative, representing the value of the option to repurchase a $105 million asset at $100 million.

The main disadvantage of Repo 105 compared to a standard repo is that Lehman must come up with more cash for the original transaction. That liquidity would not be free. But the advantage of Repo 105 is that the resulting balance sheet looks smaller. Whenever Lehman moved a transaction from standard repo to Repo 105, the liabilities on the balance sheet would fall by the size of the transaction with no effect on measured equity. Thus, balance sheet leverage would be smaller.

As shown in Figure 4, there are several advantages to Repo 105 including that the cash received for the Repo 105 is not booked as an increase in borrowings and that the cash may be used to pay down other liabilities.[6]

Figure 4: Lehman's Accounting Treatment of Repo Transactions

	Type of Transaction	
	Standard Repo	Repo 105
Impact on balance sheet	The transferred securities inventory remained on Lehman's balance sheet during the term of the repo, leaving the balance sheet unchanged.	The transferred securities inventory was considered sold and was removed from Lehman's balance sheet during the term of the repo, decreasing the balance sheet. It recorded the cash it received in exchange for the collateral as proceeds from a sale.
Impact on total assets	Because the inventory remained on Lehman's balance sheet, the borrowed cash increased Lehman's total assets.	Although Lehman's inventory decreased, Lehman's total assets remained unchanged.
Impact on total borrowings	The cash received was booked as an increase in borrowings.	The cash received was not booked as an increase in borrowings.
Impact on total liabilities	Lehman recorded a corresponding liability representing its obligation to repay the borrowed cash, which increased its liabilities.	Lehman did not record a liability representing its obligation to repay the borrowed funds even though the economic substance of the transaction was a borrowing, and thus, Lehman's total liabilities did not increase.
Impact on leverage ratios	No impact on leverage because the income is offset.	Lehman used the borrowed funds from Repo 105 transactions to pay down other short-term liabilities. By doing so, Lehman reduced its total assets, thereby reducing its leverage ratios.

Source: Examiner's Report, Vol.3, 768-775.

5. Lehman's Use of Repo 105

From 2001 through 2006, Lehman regularly engaged in standard repo and Repo 105 transactions in varying volumes, usually less than $20 billion per month. By July 2006, Lehman personnel believed that at least two, and possibly three, of its five investment bank

6 Caplan et. al. (2012) provides additional analysis and discussion of Lehman's use of Repo 105 from an accounting perspective. Also see the Examiner's Report, Vol. 3 for an Executive Summary of the Repo 105 issue. Pages 750-760 of the Examiner's Report provide several detailed examples comparing the accounting treatment of standard repos to that of Repo 105 transactions.

peers had ceased using Repo 105s (Lehman 2006B). By 2008, Lehman personnel believed that all its peer banks had ceased using the transaction (Examiner's Report, Vol. 3).

By mid-2007, real estate markets were beginning to show signs of weakening. Credit rating agencies and industry analysts began to scrutinize the investment banks, paying particular attention to their liquidity and reliance on wholesale funding. The banks were pressured to lower their leverage. In January 2008, CEO Dick Fuld instituted a deleveraging strategy at Lehman and appointed Bart McDade as "balance sheet czar" to oversee the company's efforts. Senior Lehman management at all levels was "critically focused" on reducing Lehman's firm-wide leverage (Examiner's Report, Vol. 3).

Lehman could reduce leverage by (1) raising equity or (2) reducing its net assets. Because there was a negative "perception issue" with raising equity, Lehman sought to reduce its net assets. However, reducing net assets through outright sales was tricky for Lehman, given its high concentration of real-estate-related assets, which were becoming difficult to sell and which had experienced downward valuation pressure. The sale of many of its "sticky" inventory positions at "fire-sale prices" would result in substantial losses that Lehman would have to recognize and would also generate additional questions regarding the valuation of similar assets that remained on Lehman's balance sheet (Ibid.). An additional complication was that Lehman was unable to utilize its sticky assets in its Repo 105 transactions as lenders would not accept them.

As shown in Figure 5, Lehman consistently utilized Repo 105 (and to a lesser degree Repo 108) during 2006-2008. Beginning in the second quarter of 2007, however, Lehman noticeably increased its use of Repo 105s, utilizing a high of $31.94 billion during the quarter, up from $27.28 billion the prior quarter. Each subsequent quarter, it utilized higher amounts.

Figure 5: Total Repo 105/108 at Quarter-End 2006-2008 (in $billions)*

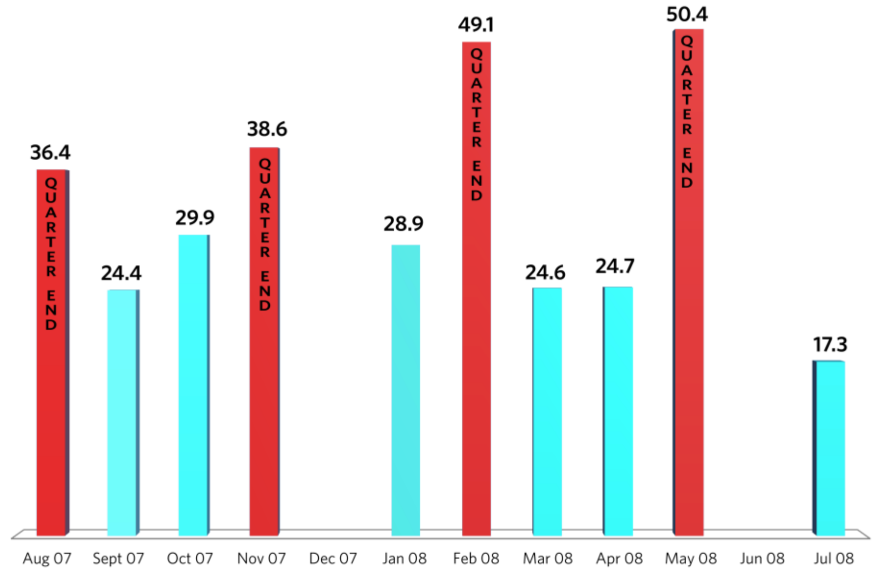
	2006		2007				2008	
Period	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Repo 105	n/a	$19.213	$20.578	$23.054	$29.054	$29.727	$42.200	$44.536
Repo 108	n/a	$5.091	$6.400	$8.575	$6.863	$8.854	$6.902	$5.847
Total	$27.153	$24.519	$27.284	$31.943	$36.407	$38.634	$49.102	$50.383
Limit	$22.000	$22.000	$22.000	$25.000	$25.000	$25.000	$25.000	$25.000

For purposes of this chart: (i) Repo 105 amount refers to the total volume of Repo 105 transactions undertaken by the Fixed Income Division, (ii), Repo 108 amount refers to the total volume of Repo 108 transactions undertaken by the Equities Division, and (iii) Total Repo 105/108 amount may be greater than the sum of Repo 105 and Repo 108 volumes reported in this chart due to intermittent and *de minimus* amounts of Rep 105 transactions undertaken by other Lehman divisions or groups.

Source: Examiner's Report, Vol. 3, 891

Moreover, as shown in Figure 6, Lehman's usage spiked at quarter-end when it had to publicly report its financial results. As of February 2007, the firm-wide cap on Repo 105 transactions was $25 billion, where it remained. Lehman exceeded this cap by approximately $25 billion in each of the first and second quarters of 2008, temporarily removing $49.1 billion and $50.4 billion, respectively, in securities inventory from its balance sheet at quarter-end (Examiner's Report, Vol. 3). And it did this even though in its public disclosures and other pronouncements, it spoke of its internal controls and limits as real limitations on its operations contributing to its financial stability and integrity.

Figure 6: Monthly Repo 105 Usage (in $billions)



Note: The amounts shown above in fact correspond to the combined totals of Repo 105 and Repo 108 transactions as shown in Figure 5.

Source: Derived from Examiner's Report, Vol. 3, 875.

The Impact of Repo 105 Transactions on Lehman's Net Leverage and Balance Sheet

The effect of Lehman's escalated Repo 105 usage was to reduce its balance sheet and its reported net leverage ratio. Days after quarter-end, Lehman would borrow billions of dollars to repurchase the securities given as collateral and take them back onto its balance sheet.

Small shifts in net leverage ratios can have a material effect on how an investment bank's financial stability is viewed. Audit guidance prepared by Lehman's outside auditor, Ernst & Young, regarding the process for reopening or adjusting a closed balance sheet stated, "Materiality is usually defined as any item individually, or in the aggregate, that moves net leverage by 0.1 or more (typically $1.8 billion)." As Figure 7 shows, Lehman's use of Repo 105 "moved its net leverage ratio not by tenths, but by whole points" (Examiner's Report, Vol. 3). As a result, Valukas concluded that, by using Repo 105 so aggressively, Lehman was able to report leverage ratios *materially lower* than it would have had to report had it not done so.

Valukas also found that Lehman's use of Repo 105 transactions had a *material impact* on its financial results and should have been disclosed in its SEC reporting, which it was not, as discussed below in *Section 6, Lehman's Disclosure Obligations*. Lehman also did not disclose the full extent of its Repo 105 use and impact to its board of directors. And Lehman continued to use Repo 105 transactions even though it was a widely held belief among Lehman employees that other banks to which it was being compared by regulators, rating agencies, and the investing public no longer used these transactions. (See Examiner's Report, Vol. 3, 800-53, Managing the Balance Sheet and Leverage, and 884-914, The Materiality of Repo 105.)

Figure 7: Lehman's Reported Net Leverage vs. Net Leverage Without Repo 105

Date	Repo 105 Usage	Reported Net Leverage	Net Leverage Without Repo 105	Difference
Q4 2007	$38.6 B	16.1	17.8	1.7
Q1 2008	$49.1 B	15.4	17.3	1.9
Q2 2008	$50.4 B	12.1	13.9	1.8

Source: Examiner's Report, Vol. 3, 748 (Footnotes omitted).

6. Lehman's Disclosure Obligations

Required SEC Disclosure

As a publicly traded company Lehman was regulated by the Securities and Exchange Commission (SEC) and required to make periodic reports on Form 10-K (annual) and Form 10-Q (quarterly), as well as certain episodic disclosures. SEC rules also governed what Lehman said in its earnings calls with analysts. Lehman's disclosures in its filings and earnings calls were required to be full, fair, accurate, and not misleading. Statements are considered not misleading if they present material information that an investor would consider important to making a decision and do not omit any material information. Information is material if a reasonable person would likely consider it important.

Moreover, Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) is an integral part of a corporation's annual and periodic SEC reports. A company is specifically required to discuss in its MD&A known trends and uncertainties related to its liquidity and cash flow, capital resources, and results of operations, as well as unusual and infrequent events and transactions that could have a material favorable or unfavorable impact on the company (SEC Item 303).

Lehman's Reports

Repo 105 transactions enabled Lehman to remove up to $50 billion of assets from its balance sheet for short periods of time and to pay unrelated debts, thereby temporarily reducing its reported assets and net leverage ratio at quarter-end. From 2000 through 2007, Lehman prepared its Forms 10-K and 10-Q reports in accordance with generally accepted accounting principles (GAAP) and affirmatively stated therein that it sometimes used repos as a means of short-term borrowings and that it accounted for them as "financings." "At no time did Lehman disclose in any of its Forms 10-K or 10-Q, directly or indirectly, from 2000 through third quarter 2007, its use of Repo 105s or that it accounted for any of its repo transactions as "sales" pursuant to SFAS 140" (Examiner's Report, Vol. 3).

Because it accounted for its Repo 105 transactions as sales rather than borrowings, Lehman did not disclose its liabilities arising from the obligation to repay the borrowings. An investor reading its SEC reports would not learn that it had borrowed tens of billions of dollars and that, a few days after the close of the quarter, it would have to repay these amounts to buy back the assets given as collateral (Ibid.). For these reasons, the examiner found that Lehman's MD&A statements about its liquidity and liabilities (i.e., obligation to repurchase the securities) were deficient and misleading (Ibid.). (See Lehman's 2007 Form 10-K, page

97, for its disclosure regarding repos and Item 303 of Reg. S-K regarding required MD & A disclosures.)

Additionally, from late 2007 through mid- 2008, at its quarterly earnings conference calls, Lehman officers touted its reduced net leverage as evidence of its discipline and financial health. At no time, however, did Lehman disclose in its filed reports or on these calls that Repo 105 was a major driver of the reduction. When questioned, Lehman officers indicated that the reduction was due to the sale of assets but said nothing about the firm's use of Repo 105. (Examiner's Report, Vol. 3).

The bankruptcy examiner found that there existed sufficient evidence from which a trier of fact could conclude that Lehman's reported net leverage ratio was materially misleading. He also concluded that plausible legal claims existed against Lehman officers Dick Fuld, Erin Callan, Ian Lowitt, and Christopher O'Meara "for causing and allowing Lehman to file periodic reports that did not disclose Lehman's use of Repo 105 transactions" (Ibid.).

In interviews conducted by the bankruptcy examiner, representatives from credit rating agencies, the Federal Reserve, and the SEC all said that they would have wanted to know about Lehman's Repo 105 usage and that it would have been relevant to their analysis ((Ibid.). (See Ibid, 992-1027**,** on management's culpability for Lehman's Repo 105 use and disclosure.)

Lehman's failure to disclose its Repo 105 program also violated its internal code of ethics, which provided in part:

> It is crucial that all books of account, financial statements and records of the Firm reflect the underlying transactions and any disposition of assets in a full, fair, accurate, and timely manner. All employees and directors who are involved in the Firm's disclosure process are required to know and understand the disclosure requirements applicable to the Firm that are within the scope of their responsibilities, and must endeavor to ensure that information in documents that Lehman Brothers files with or submits to the SEC, or otherwise discloses to the public, is presented in a full, fair, accurate, timely, and understandable manner.

GAAP Disclosure

Lehman prepared its financial reports in accordance with GAAP and accounted for its Repo 105 transactions in accordance with SFAS 140, a GAAP standard. The financial reports were reviewed by Ernst & Young, whose responsibility was to ensure GAAP compliance. Ernst & Young never undertook an in-depth review of Lehman's Repo 105 practice. Nor did it request additional Repo 105 disclosure from Lehman.

In light of these facts, the bankruptcy examiner concluded that, while Lehman's Repo 105 accounting may have technically complied with SFAS 140, the financial statements still may have been misleading, and Ernst & Young may not have fulfilled its duty. This is because GAAP requires more than mere technical compliance.[7]

---

[7] "Generally accepted accounting principles recognize the importance of reporting transactions and events in accordance with their substance. The auditor should consider whether the substance of transactions or events differs materially from their form" (AU § 411.06). Courts have ruled that strict application of FASB standards does not ensure compliance with GAAP. See for example *In re Global Crossing, Ltd. Sec. Litig.,* 322 F. Supp.2d 319, 339 (S.D.N.Y. 2004) cited at Examiner's Report, Vol. 3, 965 ("ultimate goals of fairness and accuracy in reporting require more than mere technical compliance").

In reaching this conclusion, Valukas cited a prominent court decision, *In re Global Crossing, Ltd*:

> Similarly, as noted in *In re Global Crossing Ltd. Securities Litigation*, even if a defendant established that its accounting practices "were in technical compliance with certain individual GAAP provisions . . . this would not necessarily insulate it from liability. This is because, unlike other regulatory systems, *GAAP's ultimate goals of fairness and accuracy in reporting require more than mere technical compliance*." The court explained that "when viewed as a whole," GAAP has no "loopholes" because its purpose, shared by the securities laws, is "to increase investor confidence by ensuring transparency and accuracy in financial reporting." Technical compliance with specific accounting rules does not automatically lead to fairly presented financial statements. "Fair presentation is the touchstone for determining the adequacy of disclosure in financial statements. While adherence to generally accepted accounting principles is a tool to help achieve that end, it is not necessarily a guarantee of fairness. Moreover, registrants are "*required to provide whatever additional information would be necessary to make the statements in their financial reports fair and accurate, and not misleading*." (Examiner's Report, Vol. 3) (Footnotes omitted).

Thus, Valukas also found that plausible legal claims existed against Ernst & Young for its failure to meet professional standards in connection with Lehman's failure to disclose Repo 105 in its financial statements (Ibid). (See Wiggins, et al. 2014D, which discusses in detail the role of Ernst & Young.)

7. Additional Impacts and Risks to Lehman of Using Repo 105

It may be questioned whether Repo 105 was purely an accounting issue that had no impact on the underlying economics of Lehman's business. However, Repo 105 was accompanied by real risks and costs, as discussed below.

Employee Dissent

Lehman accelerated its use of Repo 105 during 2007 and 2008 to reduce the risk of carrying too much leverage. Since Repo 105 agreements accounted for as sales under SFAS 140 generally involved the same collateral and the same counterparties as standard repo agreements accounted for as financings, Repo 105 was an expensive way to fund the firm's operations. Further, Anton R. Valukas, the Lehman bankruptcy examiner, concluded that there was no business purpose for Lehman's use of Repo 105 instead of standard repos. To the contrary, he found significant evidence that it was well understood throughout the company that the sole purpose for engaging in Repo 105 transactions was to manage the balance sheet and leverage ratio (Examiner's Report, Vol. 3).

Repo 105 usage was widespread and persistent throughout the firm; its characteristics were transparent and known to a great number of employees, not all of whom agreed with its use. Several employees spoke out against the practice, including Bart McDade, who, once he became president in June 2008, began to implement a program to cut Lehman's use of Repo 105 by 50 percent (Ibid.). The examiner's report collected the following comments:

- "[T]he firm has a function called repo 105 whereby you can repo a position for a week, and it is regarded as a true sale to get rid of net balance sheet."
- "We have been using Repo 105 in the past to reduce balance sheet at the quarter-end."

- "... another drug we're on."
- "[A]n accounting gimmick."
- "[A] lazy way of managing the balance sheet, as opposed to legitimately meeting balance sheet targets at quarter end."
- "Repo 105 offers a low-cost way to offset the balance sheet and leverage impact of current market conditions."
- "It's basically window dressing. We are calling repos true sales, based on legal technicalities."
- "Can you imagine what this would be like without [Repo] 105?"

Ibid. (footnotes omitted).

The Whistleblower Letter

Mathew Lee, a 14-year employee and senior vice president in charge of Lehman's global balance sheet, was so distressed by practices at Lehman that he sent a letter dated May 18, 2008, to Lehman's officers, alleging accounting mismanagement and citing a number of concerns with how the balance sheet was being managed. Although the letter did not explicitly reference Repo 105, Lee directly raised this issue with management and with Ernst & Young, whom management asked to look into the matter, when interviewed by them. Even though Lee had specifically mentioned Repo 105 as one of his concerns, neither Lehman management nor Ernst & Young informed the Lehman board of the firm's use of Repo 105 or that Lee had raised the topic as an issue. Lee was laid off shortly thereafter, and Lehman's aggressive use of Repo 105 continued. (See the Lee Whistleblower Letter and Wiggins et al. 2014D for further discussion of the whistleblower letter and management's comments regarding the same.)

8. The Regulatory Response to the Repo 105 Revelation

The revelation of Lehman's use of Repo 105 in the Lehman bankruptcy examiner's report issued in March 2010, caused much debate about its accounting and disclosure. Accounting professionals disagreed whether Lehman had complied with SFAS 140 or stretched a loophole too far. Commenters also disagreed about Lehman's duty to disclose its use of Repo 105.

The SEC Response

On September 17, 2010, the SEC issued Release No. 33-9143, which proposed requiring companies to make additional disclosures about their short-term borrowing arrangements, regardless of how such arrangements are accounted for. "Specifically, the proposals would require a registrant to provide, in a separately captioned subsection of Management's Discussion and Analysis of Financial Condition and Results of Operations, a comprehensive explanation of its short-term borrowings, including both quantitative and qualitative information" (Ibid.). Although the proposed changes were not ultimately adopted, on September 28, 2010, the SEC also issued interpretive Release No. 33-9144, which provided guidance on existing disclosure requirements pertaining to presentation of liquidity and capital resources.

Impact on Accounting Standards

Lehman's use of Repo 105 also highlighted the continuing debate between FASB standards, which are rules-based, and international accounting standards, which are principles-based. Rules-based standards such as SFAS 140 are generally thought to be more rigid and less subject to varying interpretation than principles-based standards, but also to be subject to greater manipulation. This difference was cited by David Tweedie, chair of the International Accounting Standards Board (IASB) in commenting on Repo 105: "International Financial Reporting Standards [IFRS] does [sic] not provide for so-called Repo 105 transactions. . . .We don't allow it. That's why we have principles, not rules, so you can't do it. They find ways to get around rules" (Cohn, 2010). (See Bradbury and Schröder, 2012 for a discussion of the principles versus rules debate.)

Under the relevant International Accounting Standard (IAS 39, Financial Instruments: Recognition and Measurement), the consideration of a transferor's ability to repurchase or redeem financial assets transferred, even in the event of default by the transferee, is not required in determining its accounting treatment. Notwithstanding Chairman Tweedie's declaration, on October 7, 2010, the IASB amended IFRS 7, Financial Instruments: Disclosures to require additional disclosures if a disproportionate amount of financial asset transfer transactions occur around the end of a reporting period.

Additionally, in 2011, the FASB updated SFAS 140 to specifically delete the borrower's ability to repurchase collateral as a criterion for determining whether effective control is retained.[8] Because IAS 39 did not require consideration of a transferor's ability to repurchase or redeem financial assets transferred, the change to SFAS 140 brings the two standards into greater alignment (FASB 2011). (Pounder 2011 further discusses the different ways in which various agencies have responded.)

References

Bradbury, Michael E. and Laura B. Schröder, *The Content of Accounting Standards: Principles Versus Rules*, The British Accounting Review 44 (2012), 1-10.

Caplan, Dennis H., Saurav K. Dutta, and David J. Marcinko, *Lehman on the Brink of Bankruptcy: A Case about Aggressive Application of Accounting Standards*, Issues in Accounting Education, Vol. 27, No. 2 (2012), 441-459.

Cohn, Michael, *Accounting Boards to Work on Repo Transactions*, Accounting Today, April 7, 2010.

Financial Accounting Standards Board, *Accounting Standards Update, No. 2011-03, Transfers and Servicing (Topic 960): Reconsideration of Effective Controls for Repurchase Agreements*.

Financial Crisis Inquiry Commission, Financial Crisis Inquiry Report: "The Financial Crisis Inquiry Report: Final Report of the National Commission on the Causes of the Financial and

[8] "The Board determined that the criterion pertaining to an exchange of collateral should not be a determining factor in assessing effective control. The Board concluded that the assessment of effective control should focus on a transferor's contractual rights and obligations with respect to transferred financial assets, not on whether the transferor has the practical ability to perform in accordance with those rights or obligations. The Board also concluded that the remaining criteria are sufficient to determine effective control. Consequently, the amendments remove the transferor's ability criterion from the consideration of effective control for repos and other agreements that both entitle and obligate the transferor to repurchase or redeem financial assets before their maturity" (FASB 2011).

Economic Crisis in the United States". Washington, D. C.: Government Printing Office. (January 2011)

Gorton, Gary and Andrew Metrick, *The Financial Crisis of 2007-2009* (April 18, 2012), prepared for The Handbook of Major Events in Economic History (Routledge; forthcoming) edited by Randall Parker and Robert Whaples.

Herz, Robert H. (Chairman, Financial Accounting Standards Board), Letter to the Honorable Barney Frank, Chairman House Financial Services Committee (April 19, 2010).

International Accounting Standard 39 Financial Instruments: Recognition and Measurement (IAS 39) (superseded by IFRS 9 Financial Instruments).

International Financial Reporting Standard 7 Financial Instruments: Disclosures (IFRS 7).

Lee, Matthew (Senior Vice President), Letter to Mr. Martin Kelly, Controller, et. al., Lehman Brothers Holdings Inc. and Subsidiaries (May 18, 2008).

Lehman Brothers, Accounting Policy Manual, Section I. Assets, 1. Repo 105 and Repo 108 (2006), Lehman Brothers Holdings Inc. Bankruptcy Exhibit LBEX-DOCID 3213287. (Lehman 2006A.)

__________, Code of Ethics (As amended February 17, 2004).

__________, Global Balance Sheet, Overview of Repo 105(FID)/108(Equities), July 2006. Lehman Brothers Holdings Inc. Bankruptcy Exhibit LBEX-WGM 748498. (Lehman 2006B.)

Lehman Brothers Holdings, Inc., Form 10-K for Fiscal Year 2007.

Linklaters, Letter to Lehman Brothers International (Europe), 31 May 2006.

PCAOB Auditing and Attestation Standards, AU 411: The Meaning of Present Fairly in Conformity with Generally Accepted Accounting Principles, (available at: http://pcaobus.org/Standards/Auditing/Pages/default.aspx):

Pounder, Bruce, *One Problem, Three Fixes*, Strategic Finance, January 1, 2011.

Pozsar, Zoltan, Tobias Adrian, Adam Ashcraft, and Hayley Boesky, *Shadow Banking*, Federal Reserve Bank of New York Staff Reports, no. 458, July 2010: revised February 2012.

Statement of Financial Accounting Standards No. 140, Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities (a replacement of FASB Statement No. 125). September 2000.

U.S. Securities and Exchange Commission, Reg. S-K, § 229.303 (Item 303); 17 CFR 229.303 Management's Discussion and Analysis of Financial Condition & Results of Operations.

__________, Release No. 33-9143; 34-62932; File No. S7-22-10, 17 CFR Parts 229 and 249, Short-term Borrowings Disclosure, 75 Federal Register 59866 (September 17, 2010).

__________, Release No. 33-9144; 34-62934; FR-83, 17 CFR Parts 211, 231 and 242 Commission Guidance on Presentation of Liquidity and Capital Resources Disclosures in Management's Discussion and Analysis, 75 FR 59893 (September 28, 2010).

Valukas, Anton R., Examiner, In re Lehman Brothers Holdings Inc. et al, Debtors, Chapter 11 Case No. 08-13555 (JMP) (March 11, 2010), United States Bankruptcy Court Southern District of New York (Examiner's Report), Volume 3 of 9, pages 727-1055 [732-50 (Executive Summary of Repo 105), 800-53 (Managing the Balance Sheet and Leverage), 884-914 (The

Materiality of Repo 105), and 992-1027 (Management's Culpability for Repo 105 and Disclosure)].

Wiggins, Rosalind Z., Thomas Piontek, and Andrew Metrick, *The Lehman Brothers Bankruptcy A: Overview,* Yale Program on Financial Stability Case Study 2014-3A-V1, October 2014.

Wiggins, Rosalind Z., Rosalind L. Bennett and Andrew Metrick, *The Lehman Brothers Bankruptcy D: The Role of Ernst & Young* Yale Program on Financial Stability Case Study 2014-3D-V1, October 2014.

Wiggins, Rosalind Z., and Andrew Metrick, *The Lehman Brothers Bankruptcy E: The Effect on Lehman's Broker-Dealer*, Yale Program on Financial Stability Case Study 2014-3E-V1, October 2014.

Development of this case has been supported by a generous grant from the Alfred P. Sloan Foundation to the Yale Program on Financial Stability.

Copyright 2014, 2019 © Yale University. All rights reserved. To order copies of this material or to receive permission to reprint any or all of this document, please contact the Yale Program for Financial Stability at ypfs@yale.edu.

Appendix A: Selected Paragraphs from SFAS 140

Accounting for Transfers and Servicing of Financial Assets, Paragraph 9:

9. A transfer of financial assets (or all or a portion of a financial asset) in which the transferor surrenders control over those financial assets shall be accounted for as a sale to the extent that consideration other than **beneficial interests** in the transferred assets is received in exchange. The transferor has surrendered control over transferred assets if and only if *all of the following conditions* are met:

a. The transferred assets have been isolated from the transferor—put presumptively beyond the reach of the transferor and its creditors, even in bankruptcy or other receivership (paragraphs 27 and 28).

b. Each transferee (or, if the transferee is a qualifying SPE (paragraph 35), each holder of its beneficial interests) has the right to pledge or exchange the assets (or beneficial interests) it received, and no condition both constrains the transferee (or holder) from taking advantage of its right to pledge or exchange and provides more than a trivial benefit to the transferor (paragraphs 29–34).

c. The transferor does not maintain effective control over the transferred assets through either (1) an agreement that both entitles and obligates the transferor to repurchase or redeem them before their maturity (paragraphs 47–49) or (2) the ability to unilaterally cause the holder to return specific assets, other than through a **cleanup call** (paragraphs 50–54)."

The Importance of the Right and Obligation to Repurchase, Collateral and Symmetry, Paragraph 218:

218. The Board also decided that the transferor's right to repurchase is not assured unless it is protected by obtaining collateral sufficient to fund substantially all of the cost of purchasing identical replacement securities during the term of the contract so that it has received the means to replace the assets even if the transferee defaults. Judgment is needed to interpret the term *substantially all* and other aspects of the criterion that the terms of a repurchase agreement do not maintain effective control over the transferred asset. However, arrangements to repurchase or lend readily obtainable securities, typically with as much as 98% collateralization (for entities agreeing to repurchase) or as little as 102% overcollateralization (for securities lenders), valued daily and adjusted up or down frequently for changes in the market price of the security transferred and with clear powers to use that collateral quickly in the event of default, typically fall clearly within that guideline. The Board believes that other collateral arrangements typically fall well outside that guideline.