Collateralized Loan Obligations, Warehousing, and Banc of America's Undisclosed Losses

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Collateralized Loan Obligations (CLOs) are issued by trusts which in turn invest the proceeds from issuing the CLO securities in portfolios of bank loans. CLO trusts distribute principal and interest cash flows from the portfolio of loans to investors according to a set of rules commonly referred to as the "waterfall."

If investors are not fully informed, CLO trusts and the investment banks that create them can take advantage of information asymmetries to structure the CLO waterfall unfairly. The academic literature has identified several potential conflicts of interest, including the possibility that CLO trusts securitize loans with hidden risks, and therefore investors in the securitized loans are not fully compensated for the true riskiness of the securities they purchase.[2]

This note explains the conflicts of interest created when an investment bank accumulates loans for potential securitization prior to the issuance of a CLO through a practice known as "warehousing." Warehousing appears to have resulted in some CLO trusts issuing securities without disclosing to investors that the securities had lost almost all their value because the CLO trust was committed to paying substantially more than the market value of the warehoused loans.

We provide two examples of such problematic CLO offerings in which Banc of America appear to have transferred at least $35 million of losses to investors in July 2007 and which ultimately led to approximately $150 million in losses in just these two CLOs; the problem we identify is more widespread than Banc of America and broader than CLOs.

I. Introduction

Collateralized Loan Obligations (CLOs) are securities issued by a trust which invests in loans. CLO trusts issue different classes of securities backed by a common portfolio of loans but offering more or less interest depending on their relative riskiness. Principal and interest cash flows from the underlying portfolio are distributed to investors according to a set of rules commonly referred to as the "waterfall."

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[2] See for example Benmelech Dlugosz and Ivashina [2010].

A typical waterfall is structured as follows. On each payment date, scheduled principal and interest is first paid to the most senior (often labeled “Class A”) Note holders, then any remainder is used to pay Class B Note holders, and so on down through the capital structure. The junior-most position, typically referred to as the equity tranche, is the last to be paid with any remaining cash after investors in all the other tranches are paid the principal and interest due.[3] It is also, therefore, the most likely not to be paid if the returns on the underlying portfolio are insufficient to cover all promised principal and interest amounts. Table 1 provides an example CLO capital structure.

Table 1
Example CLO Capital Structure

Tranche	Face Value (millions)	Credit Rating	Interest Rate: LIBOR +
Class A Notes	$350	AAA	0.3%
Class B Notes	$100	AA	0.9%
Class C Notes	$25	A	1.5%
Class D Notes	$20	BBB	4.0%
Class E Notes	$5	BB	5.0%
	$500		

The cash flow waterfall concentrates portfolio risk on investors who purchase the junior tranches. For example, if the underlying portfolio of loans sustains a 5% loss, investors (who are in the “first-loss” position) would be the first to bear those losses. However, the equity tranche investors would not lose just 5% of their principal; they would bear a loss of principal equal to the dollar amount of the portfolio loss up to the size of the tranche. Even small losses on the much larger underlying portfolio can completely wipe out investors in the junior tranches. This leveraged risk is often exacerbated in CLOs because the size of the tranche tends to decrease with decreasing seniority in the waterfall, such that the most junior tranches are also the smallest.

It is also common for the waterfall to divert cash flows at several points with interest coverage or over-collateralization tests. Essentially, if the value of the underlying portfolio has been reduced because of declines in the market value of the portfolio securities below some ratio of the face value of the senior notes, or if the income earned on the portfolio is below some predefined amount, cash flow which would have been paid to investors in junior tranches is instead used to redeem the senior notes. These cash flow diversions provide further protection for investors in the senior notes from any loss, and make it even less likely that investors in the junior notes will receive principal and interest payments.

[3] Equity-position securities in a CDO are known by a variety of names, including “preference shares” or “income notes”.

The CLO structure redistributes the risk in the underlying portfolio securities from investors in the senior notes to investors in the lower tranches. To compensate for this increased risk, CLOs typically promise to pay investors in the junior notes a higher interest rate than investors in the senior notes. These rates are often quoted “over LIBOR”, meaning that the actual interest rate promised to each tranche is the sum of the current LIBOR rate and a spread, which is higher on the junior tranches than on the senior tranches.[4] The junior-most tranche (the equity tranche) may also be entitled to receive additional proceeds from the portfolio collateral after all other note holders have been paid their interest.

The aggregate market value of the securities issued by the trust can’t be more than the market value of the loans, cash and other assets held in the trust. If the CLO trust uses proceeds from selling securities at par to purchase loans at contemporaneous market prices, the aggregate market value of the issued securities will be equal to the aggregate face value of the of the CLO securities on their issue date minus the trust’s fees and expenses, including payments to the placement agent. In this common case, interest receipts on the underlying loans must exceed interest paid on the more senior notes by a sufficient amount to fully fund principal and interest payments on the junior-most notes.

We identify several instances in which CLO trusts bought loans at prices substantially above the market value when the CLOs were issued and therefore the market value of the CLOs’ issued securities were much less than their face value. The shortfall we identify is in addition to the usual difference due to fees and expenses.

II. Leveraged Loans

Leveraged loans are loans issued to below investment grade corporations.[5] The loans are frequently large and extended by a syndicate of lenders intending to re-sell participations in the loans to other banks and institutional investors including hedge funds, mutual funds and CLO trusts. Standard and Poor’s and the Loan Syndications and Trading Association produce benchmark indices of the market value of leveraged loans. Figure 1 plots the market value index from 2007 to 2011 for the largest loans of the type securitized into CLOs.[6] The index level declined substantially in late 2008 and

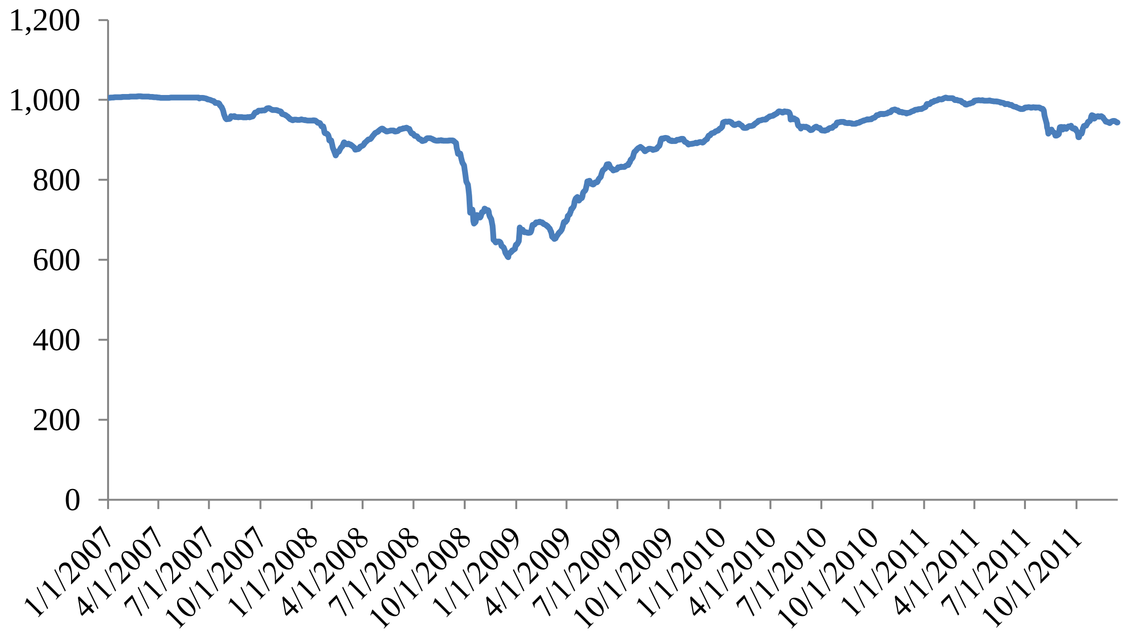
[4] LIBOR, the London Interbank Offered Rate, is the interest rate that banks in London charge each other for short-term loans, and is considered to reflect changes in interest rates generally.

[5] The qualifier “leveraged” might just as well be replaced with “high-yield” but we follow industry convention and refer to them as leveraged loans. For an extended discussion of this market please see Antczak, Lucas and Fabozzi [2009], Tavakoli [2008] and Standard and Poor’s [2011].

[6] www.standardandpoors.com/indices/sp-lsta-leverage-loan-100-index/en/us/?indexId=SPFI--LL--USD----T-------

rebounded in 2009. This leveraged loan market pattern coincides with the high yield bond market decline and rebound.[7]

Figure 1: S&P/LSTA Leverage Loan 100 Index, 2007 to 2011



III. Banc of America Used LCM VII to Shift Losses to Investors

Banc of America Securities sold a CLO called LCM VII under a Private Placement Memorandum dated July 31, 2007. LCM VII's capital structure is illustrated in Table 2.

Table 2
LCM VII, Ltd. Capital Structure

Tranche	Face Value	Initial Rating	Interest Rate: 3-month LIBOR +	Percent of Total Deal	Apparent Subordination
Class A-1 Revolving Notes	$60,000,000	AAA	0.3%	14.86%	85.14%
Class A-2 Term Notes	$250,000,000	AAA	0.3%	61.93%	23.21%
Class B Notes	$20,000,000	AA	0.9%	4.95%	18.25%
Class C Notes	$42,763,000	A	1.5%	10.59%	7.66%
Class D Notes	$29,040,000	BBB	4.0%	7.19%	0.46%
Class E Notes	$1,874,000	BB	5.0%	0.46%	0.00%
	$403,677,000				

LCM VII was backed by a $400 million face value portfolio of loans Banc of America bought or financed at above par between November 2006 and June 2007.[8] The

[7] The decline in the market value of leveraged loans in July 2007 was as a result of credit risk not liquidity risk as credit spreads on these loans increased dramatically in July 2007. See slide 23 of www.lsta.org/assets/0/190/9DA26E16-92D9-4420-B866-08D22D896ACB.pdf.

loans that ended up in LCM VII's portfolio had already lost 5% by July 31, 2007 when LCM VII was issued. Thus, the portfolio backing $400 million of CLO notes had lost $20 million and the lowest tranches were worthless before Banc of America Securities sold them to investors on July 31, 2007.

Although LCM VII's portfolio of loans did not lose any more market value between July 31, 2007 and December 31, 2007, portfolio turnover in the last five months of 2007 reduced the historical acquisition cost of the loans held in the trust and gave the appearance that investor losses were the result of market conditions after the LCM VII closed on July 31, 2007.

By its conduct, Banc of America transferred $20 million in losses suffered on a portfolio of loans it held before the closing to uninformed investors who bought LCM VII's lower priority notes. In addition, since the credit support typically provided by the lower tranches was consumed by undisclosed losses prior to July 31, 2007, the investors in the more senior tranches were sold much more risky securities than the offering documents portray and were promised much less compensation than informed investors in those tranches would have demanded.

The LCM VII PPM describes a Warehousing Facility, whereby "the Issuer [LCM VII], at the direction of the Collateral Manager [LCM], has acquired direct interests in commercial loans (the "Warehoused Loans") with the proceeds from either the sale of participations to a Warehousing Provider [Banc of America] or the borrowings under a Warehousing Facility," and that "the Warehoused Loans will be the initial CDO Assets in the CDO Portfolio."[9] The loans purchased at above par and warehoused had lost over 5% of their value before LCM VII closed and the Notes were sold to investors. The average purchase price of the loans at closing was $1.0015. The average market value of the loans on October 24, 2007 adjusted to July 31, 2007 is $0.9469. The difference, $0.0546 multiplied by the $400 million face amount of the loan portfolio on July 31, 2007 is $21.24 million. Thus, the $29 million face value D Notes were likely worth only $10 million and the E Notes were worthless when LCM VII closed (see Table 3). These losses Banc of America shifted to LCM investors were enough to wipe out the value of the E-Notes and most of the value of the Class D Notes.

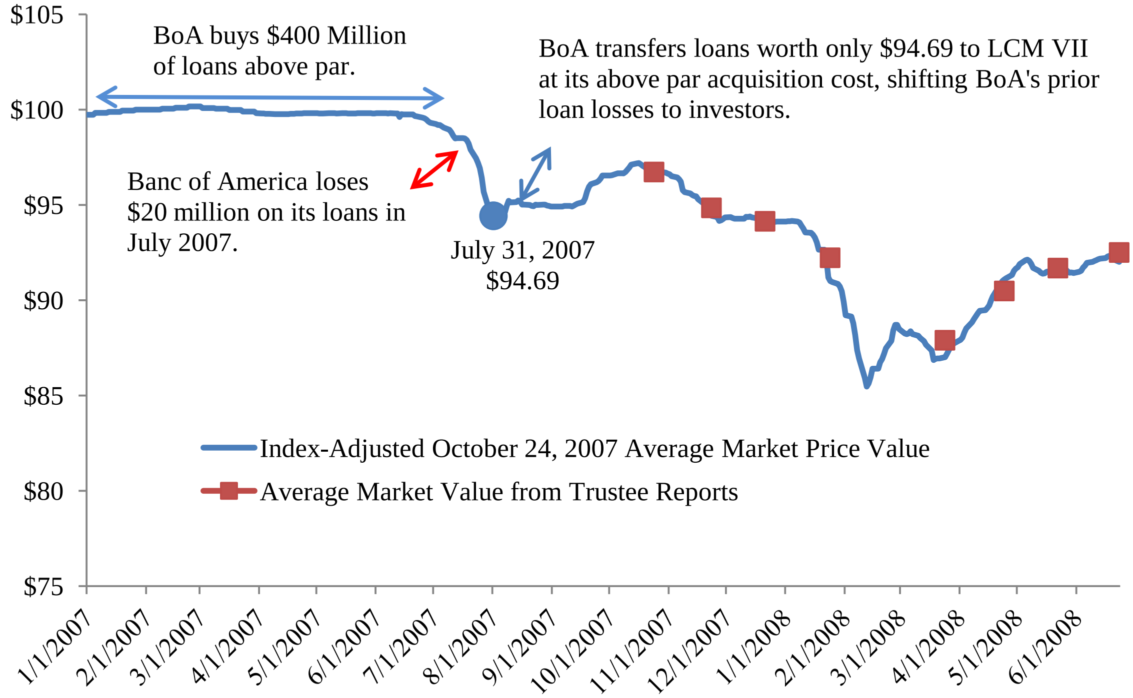
[8] LCM VII Private Placement Memorandum, p. 13.
[9] LCM VII Ltd., PPM, page 42.

Table 3
Banc of America Shifted $20 million of Losses to Investors at the LCM VII Closing on July 31, 2007

Invested Par at Closing (approximate) [10]	$400,000,000	
Weighted Average Purchase Price Attributed to LCM VII	$100.15	
Costs Charged to LCM VII Trust for Loans at Closing		$400,600,000
Weighted Average Market Value at July 31, 2007 Closing	$94.69	$378,760,000
Losses Shifted to Investors		$21,240,000

Figure 2 plots the average market price of the loans in the LCM VII CLO using the daily levels of the S&P/LSTA Leveraged Loan Index, which tracks the leveraged loan market, anchored to the average market price of the loan portfolio reported on the Trustee Report dated October 24, 2007. The red dots in Figure 2 identify the average market price reported in the LCM VII Trustee Reports and reflect how closely the portfolio's reported average market price tracked the S&P/LSTA Leveraged Loan Index.[11]

Figure 2
Level of S&P/LSTA Leveraged Loan Index (Market Value)



[10] October 24, 2007 Trustee Report, "Collateral Details, page 7" adjusted for index to July 31, 2007.

[11] There does not appear to be Trustee Reports for August and September 2007. Some minor variation between the later index adjusted values and the reported values is likely due to the portfolio turnover which would tend to increase the weighted average price of the held loans as a result of selling loans which had fallen in price and were no longer eligible securities.

Two months before Banc of America sold the LCM VII notes to investors, the S&P/LSTA Leveraged Loan Index level was 1005.7. A month later on June 29, 2007, it was down 0.5% at 1000.71. On July 16, 2007 it was still 992.63 but by July 31, 2007, the index had declined to 954.14. The value of loans had fallen 5.1% in the two months prior to LCM VII closing, 3.9% in the prior two weeks alone.

Rather than report portfolio market values on its monthly account summaries and use those market values to set and assess tests, LCM VII used the historical acquisition costs of its holdings (their Aggregate Principal Balance). Thus, Banc of America and LCM were able to hide the extent of the losses in the portfolio − losses that had occurred before the loans were sold to investors at face value − until several months later as the poorest loans were sold and better loans were purchased in order to preserve the portfolio's overall credit quality. While LCM VII appeared to hold loans worth approximately the same as the face value of the notes on the Closing Date, it in fact held loans worth over $20 million less. The true value of the loans had declined enough before closing that the Class E Note holders would likely never receive any interest payments and the D Notes had already lost two thirds of their value. By the first payment date on February 1, 2008, enough of losses had been recognized through the trading in the portfolio to trigger the diversion test and the Class E Note holders indeed did not receive this or any future interest payments.

LCM VII failed a market value test in October 2008 and was subsequently liquidated. [12] Investors lost approximately $75 million in LCM VII when it was liquidated. These losses would not have occurred but for Banc of America's failure to inform investors on July 31, 2007 that $20 million in losses had already occurred.

IV. Banc of America Also Used Bryn Mawr II to Shift Losses to Investors

LCM VII was not the only CLO that Banc of America issued at a time when the lowest tranches were effectively worthless. Banc of America Securities sold Bryn Mawr CLO II under a Private Placement Memorandum dated July 26, 2007. It was backed by leveraged loans managed by Deerfield Capital Management. The Bryn Mawr CLO II capital structure is illustrated in Table 4.

[12] LCM VII failed a market value test in October 2008 and was subsequently liquidated. www.reuters.com/article/2009/03/03/idUS265751+03-Mar-2009+BW20090303

Table 4
Bryn Mawr CLO II Capital Structure

Tranche	Face Value	Initial Rating	3-month LIBOR +	Percent of Total Deal	Apparent Subordination
Class A-1 Revolving Notes	$126,000,000	AAA	0.30%	27.05%	72.95%
Class A-2 Term Notes	$250,000,000	AAA	0.30%	53.66%	19.29%
Class B Notes	$20,000,000	AA	0.90%	4.29%	15.00%
Class C Notes	$40,223,000	A	1.60%	8.63%	6.37%
Class D Notes	$27,865,000	BBB	4.00%	5.98%	0.39%
Class E-1 Notes	$900,000	BB	5.00%	0.19%	0.0%
Class E-2 Notes	$900,000	BB	5.00%	0.19%	0.0%
Total	$465,888,000				

Bryn Mawr II was backed by loans Banc of America bought at above par earlier in 2007. The loans which ended up in Bryn Mawr II's portfolio had already lost approximately 3.5% by July 26, 2007 when Bryn Mawr II was issued. Thus, the portfolio backing $468 million of CLO notes had lost approximately $15 million and the low priority notes were worthless before Banc of America Securities sold them to investors on July 26, 2007.

By its conduct, Banc of America transferred $15 million in losses suffered on a portfolio of loans it held before the closing to uninformed investors who bought Bryn Mawr II notes. Since the credit support typically provided by the lower tranches was consumed by undisclosed losses prior to Bryn Mawr II closing, investors in the more senior tranches were sold more risky securities than the offering documents portray and were promised less compensation than informed investors in those tranches would have demanded. Investors lost approximately $75 million in Bryn Mawr II when it was liquidated. These losses would not have occurred but for Banc of America's failure to inform investors on July 27, 2007 that $15 million in losses had already occurred.[13]

V. Were Disclosures Adequate?

The private placement memorandums for the LCM VII and Bryn Mawr II CLOs each contained language that told investors the trusts would purchase loans which had previously been warehoused. For example, the LCM VII CLO PPM states:

[13] Like LCM VII, Bryn Mawr CLO II failed a market value test in October 2008 and was liquidated www.businesswire.com/news/home/20090304005816/en/Fitch-Downgrades-Withdraws-Ratings-Bryn-Mawr-CLO. Banc of America was not alone in transferring losses to CLO investors. Citigroup issued Bridgeport II at a time when the lowest tranches were effectively worthless. Citigroup sold Bridgeport II under a Private Placement Memorandum dated July 27, 2007. It was backed by leveraged loans managed by Deerfield Capital Management.

> *Source of Certain of the CDO Assets*. On the Closing Date, the CDO Portfolio will consist primarily of Commercial Bank Loans that were purchased by the Issuer during a period prior to the Closing Date (the "**Warehousing Period"**) through funds provided by the Warehouse Providers under the Warehousing Facilities (such initial CDO Assets, the "**Warehoused Loans"**). During the Warehousing Period, the Issuer used funds available under the Warehousing Facilities to acquire the Warehoused Loans at prices prevailing at the time of acquisition. It is a condition to termination of the Warehouse Facilities that all amounts payable to the Warehouse Providers must be paid in full. On the Closing Date, the proceeds from the issuance of the Notes will be used to repurchase participations sold with respect to, or repay loans incurred by the Issuer to purchase, the Warehoused Loans under the Warehousing Facilities provided by the Warehouse Providers. It is a condition precedent to the occurrence of the Closing Date that the weighted average purchase price of the Warehoused Loans must not exceed 100.3%. (LCM VII PPM, p. 13)
>
> A portion of the proceeds from the issuance of the Notes may be used to repurchase participations sold with respect to the Warehoused Loans under a Warehousing Facility provided by an Affiliate of the Placement Agent. Warehoused Loans funded through such Warehousing Facility were purchased in the open market, including from sellers that include Affiliates of Banc of America Securities LLC, and the purchase price to be paid by the Issuer for such Warehoused Loans is the prevailing price at the time such Warehoused Loans were purchased. As a result, certain conflicts of interest may exist or arise between the Placement Agent and/or their respective affiliates and the holders of Notes. (LCM VII PPM, p. 20)

Together these disclosures tell investors on July 31, 2007 that the LCM VII trust will be buying loans from an affiliate of Banc of America at approximately the market value of the loans when they were warehoused and that the average purchase price of the portfolio of loans will be no more than 100.3% of the loan amounts. The Bryn Mawr II PPM has substantially the same language at pages 16-17.

The language quoted above from LCM VII is virtually identical to language found in prior CLO offerings when the market value of the loans had not declined while they were warehoused. There is nothing in the LCM VII or Bryn Mawr II disclosures that put potential investors on notice that the CLOs securities had already lost substantial backing as a result of having committed to purchase loans at prices which are substantially higher than the current market value of the loans at the end of July 2007. The fact that the issuers were able to sell the offered securities at par is strong evidence that the language in the offering documents did not in fact disclose that in addition to the customary fees and expenses these CLOs had additional suffered tens of millions of dollars in losses.

Later in 2007, Banc of America began partially disclosing the embedded losses in newly issued trusts' portfolios in the private placement memorandums. For example the Symphony IV CLO private placement memorandum issued by Banc of America Securities dated August 23, 2007 includes the following language:

> …. The market value of most leveraged loans has declined recently and, therefore, it is likely that the market value of many of the Collateral Debt Securities has declined since they were purchased by the Issuer and that the market value of the Collateral Debt Securities on the Closing Date will be substantially less than the principal amount of the Financing Loans repaid by the Issuer on the Closing Date. If the Issuer sells any Collateral Debt Security prior to the Closing Date, the gain on such sale will be for the account of the Placement Agent. (Symphony CLO IV, p. 14)

VI. Warehousing Creates Opportunity for Trade Allocation

In just the two examples from late July 2007 discussed above, over $35 million in losses which had occurred prior to the issue date were shifted from Banc of America to investors without disclosure. Many CLOs issued later in 2007 also had large embedded losses, losses which were at least qualitatively identified in the private placement memorandums.[14]

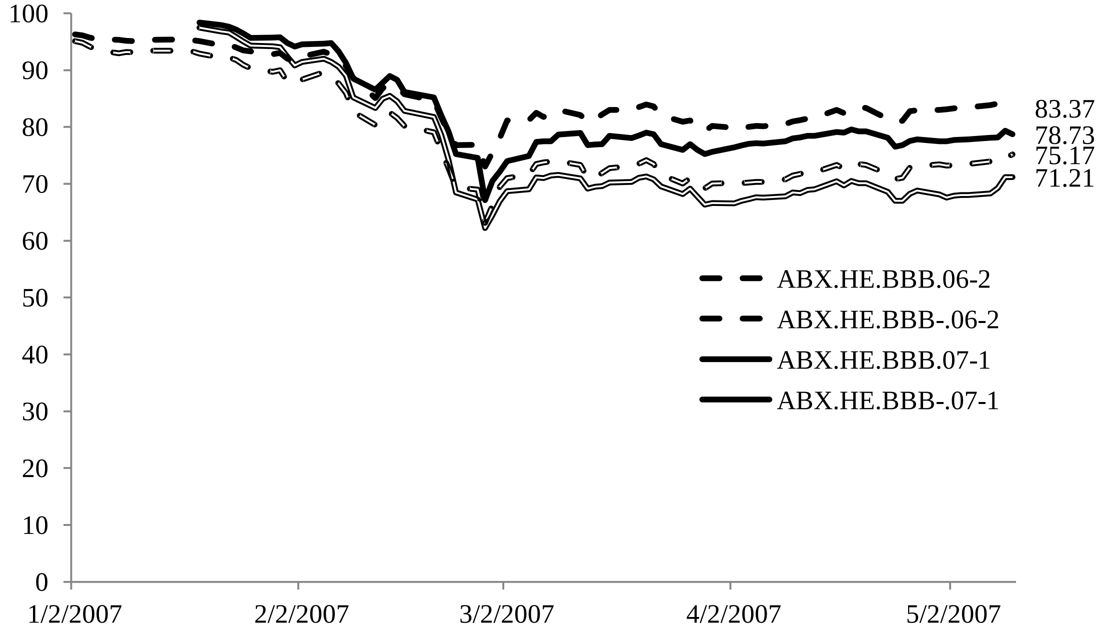
Banc of America's problematic July 2007 CLOs highlight the potential for opportunistic trade allocation created by warehousing arrangements. If CLO trusts "ramp up" their portfolios, using proceeds from issuing securities to purchase loans at contemporaneous market prices, CLO investors incur only losses occurring *after* they buy the CLOs' securities. With warehousing facilities arranged with affiliates of the placement agent and the issuer, investment banks can choose to sell at a profit loans which have increased in value rather than contribute them to the CLO trusts at the historic acquisition costs. The loan portfolio eventually purchased by LCM VII on July 31, 2007 was accumulated starting in November 2006. If the value of the warehoused loans had increased in value 5%, instead of decreased in value by 5%, would those loans have found their way into LCM VII on July 31, 2007 at significantly below contemporaneous market prices? Although it is beyond the reach of data available to us at this time, evidence of such trade allocation may be found in the incidence of warehousing in CLOs issued in 2008 versus 2007.

The trade allocation opportunities identified in this report and manifested in the Banc of America CLOs sold in and after July 2007 extend to all types of CDOs including subprime mortgage-backed CDOs. For example, JP Morgan issued a CDO, Squared CDO 2007-1, on May 10, 2007. The bulk of the CDO trust's holdings on the issue date were acquired by an affiliate of JP Morgan starting in January 2007 pursuant to a warehousing

[14] The suitability of recommending these later 2007 offerings to investors would be questionable.

agreement. The Squared CDO 2007-1 offering circular contains a description of the warehousing facility which is similar to the description in LCM VII and Bryn Mawr II CLOs and does not tell investors that the collateral debt securities have already suffered substantial losses. Figure 3 plots the value of BBB and BBB- tranches of the 2006-2 and 2007-1 ABX indices.

Figure 3
ABX 2006-2 and 2007-1 BBB and BBB- Tranches
Before Squared CDO 2007-1 Offering Circular Date



While the collateral securities may have included a broad range of securities it is highly likely that the warehoused securities had declined in value substantially between when they were purchased after January 1, 2007 and May 2007 when JP Morgan sold the CDO securities to investors.

VII. Conclusion

When an investment bank accumulates assets for potential securitization prior to the issuance of a CDO through a practice known as "warehousing" they can engage in a trade allocation scheme keeping winners and passing losers and the associated losses to investors. Investment banks, including Banc of America, issued CLOs in 2007 without disclosing to investors that the securities they were buying had lost almost all their value. We provide two examples of such problematic CLO offerings in which Banc of America transferred \$35 million of losses to investors in July 2007. Ultimately investors lost approximately \$150 million in these two Banc of America CLOs when the CLOS failed market value triggers in October 2008 and were liquidated.

VIII. Bibliography

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