2007 Review and 2008 Outlook: US CREF Surveillance

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OUTLOOK: 2008 RATING ACTIONS FAVOR UPGRADES DESPITE ECONOMIC HEADWINDS

To increase transparency of the macroeconomic framework that underpins our risk assessments, Moody's has published a baseline outlook for the global economy, as well as several potential economic risk scenarios. These economic scenarios help Moody's analysts formulate the outlooks for their specific sectors using a consistent context.

For 2008-2009, the baseline global outlook is for continued growth. There will be increased differentiation across geographies - including expectation of a notable slowing in the US. The outlook, however, is characterized by an unusually large degree of uncertainty, stemming from the impact of credit tightening.[1]

Despite the forecast of economic headwinds in the US, Moody's 2008 general outlook for US commercial mortgage backed securities (CMBS) transactions is for upgrades to continue to exceed downgrades. However, we note that CMBS deals come in different shapes and sizes including a variety of asset classes (i.e., apartment, retail, industrial, office, and hotel), property markets, and vintages that result in a wide range of deal- and tranche-specific views, as discussed in more detail below.

1 Please see Moody's January 2008 report, "Mapping the Near Future: Macro Stress Scenarios for 2008 - 2009" for an exploration and analysis of various global scenarios on the world economy.

While a softening economy reduces demand for commercial space by tenants, the impact of a slowdown on CMBS performance may not be felt for some time given that many buildings have leases in place with varying expirations and are not exposed to the space market all at one time (hotels are a notable exception). Further, CMBS loans outstanding come from different vintages, with some sized to rents and values from years ago that have allowed them to build in an additional cushion.

Moody's has two micro-economic quantitative surveillance tools, Red-Yellow-Green[2] and Commercial Mortgage Metrics (CMM), that we use to analyze and quantify the credit implications of the economic outlook for each asset class/local market pairing for which data is available (i.e., New York office, Los Angeles apartment, about 300 pairs in all). We derive the outlooks through supply and demand forecasts, with the demand forecasts provided by our affiliate Moody's Economy.com. While some CMBS deals are highly diverse and may well reflect national trends, others consist of just a handful of loans and are thus primarily affected by economic conditions in a few local markets.

Significant Performance Differences Expected by Deal and Tranche

Although several states in the US have already experienced economic slowdowns, their overall impact on commercial mortgage performance to date has been minimal. Delinquency rates at present are near historic low levels under 0.50%. Delinquency rates are expected to increase during the course of 2008 into a range of 1-2%, but given the relatively high level of loan concentration in most CMBS deals there will be a lot of variation in performance among deals.

We note that CMBS ratings are based on expected **lifetime** default rates, and the anticipated pattern is one in which the delinquencies that do occur are clustered due to either seasoning or market stress factors or both. If delinquency rates rise during 2008 to the expected 1-2% range, the increase in itself would not cause us to revisit the assumptions underlying our methodology or trigger an unusually large number of downgrades. Defaults in commercial real estate are unlikely to occur evenly over time, and we have long advocated against CDR analysis for this sector.

We also expect to see significant performance variations by vintage, with older vintages more likely to continue outperforming relative to long term trends. More recent vintages, given their more aggressive loan underwriting, may underperform.

The figures in the appendix illustrate the significant variance in expected deal level performance that can be found between vintages and within vintages. It shows base case and 95% stress case losses for all CMBS deals covered by CMM on Trepp. While these results have a conservative bias given the stresses we place on loans with low DSCRs and missing data[3] they are instructive of the significant differentiation between loans and deals on a *relative* basis.

In general the last few vintages appear to have higher and more dispersed potential losses while earlier vintages have lower and more clustered loss expectations. Note especially the 2H 2007 vintage, where the stressed losses for the weakest deals are nearly three times those of better deals.

CMBS RATINGS AND SURVEILLANCE TAKE A BOTTOM UP APPROACH

Moody's general preference is to take monitoring rating actions the way we initially rate deals: one at a time. One of the unique attributes of commercial mortgages is that much of the analysis takes place at the individual loan level. Income from the collateral supporting loans can be tracked, frequently sending signals about negative credit drift well in advance of delinquencies.

While analysis in some other asset backed sectors starts at the pool level, we build CMBS ratings from the bottom up. At the time of a deal's initial ratings a set of expectations are developed for each loan,

2 US CMBS: Red-Yellow-Green Update, Fourth Quarter 2007. Jan. 3, 2008.
3 Conservative assumptions are used for surveillance purposes as we would rather have a false signal that a loan is weak that we could then research and refute than miss a potential early warning signal about a loan that is actually weak.

and subordination levels are sized based on them. Surveillance takes into account how each asset performs in relation to expectations.

Moody's uses quantitative tools such as MOST® scores and CMM on Trepp to screen for deals doing better or worse than expected, then reviews them one at a time. While we can't rule out multiple downgrades should there be significant negative economic developments or defaults of major national tenants, they are not our expected path.

No Downgrade First, Ask Questions Later

While it is helpful to take a big picture look at how the sector as a whole may perform, the real work of CMBS surveillance takes place at the loan level. In particular, before we consider downgrading a deal due to loans that appear to be weak we look for mitigants that may not show up in the statistics (i.e., a low DSCR loan with a good lease-up story). Our practice is not to downgrade first and ask questions later.

We expect to see a continuation of the "barbell" performance pattern within deals (i.e., senior tranches being upgraded while junior tranches are downgraded). This phenomenon is driven by the dispersion of collateral credit metrics that takes place over time. While most deals at issuance have DSCRs and LTVs in a tight cluster, with the passage of time a more pronounced distribution often develops. As deals season the ones with the wider distribution profiles are more likely to see barbell-like rating actions.

While much of the low hanging upgrade fruit was picked in the last few years (primarily due to the build-up of credit support from defeasance and amortization) there is still enough left whereby we expect upgrades to continue to exceed downgrades during 2008.

However, we expect rating actions to migrate toward a more even balance of upgrades and downgrades after many years of upgrades significantly outweighing downgrades. Many of the investment grade tranches from seasoned deals that were candidates for upgrades have been upgraded now, while more time is needed to assess the ultimate performance of junior bonds. Support levels for junior bonds don't build up as quickly over time as they do for senior bonds and they are more vulnerable to dispersion (i.e., how the worst 10% of loans in a deal perform determines in large part how the lowest 5% of bonds do).

RE-REMICS - WHERE THE RUBBER HITS THE ROAD

Moody's expects that re-REMIC transactions and CUSIP CRE CDOs with collateral concentrated in below-investment-grade CMBS certificates will be among the first transactions to feel the effects of credit issues that arise. The additional leverage inherent in these deals creates the potential for earlier and deeper ratings movements than might be seen in a first order transaction like a CMBS deal or a CRE CDO with non-CUSIP collateral (such as whole loans, B-notes and mezzanine debt).

Moody's has identified 62 re-REMIC and CUSIP CRE CDO deals, of which 49 are comprised of collateral with a weighted average rating that is below investment grade. Moody's rated fewer of such deals than did other market participants. We have long talked about the concept of negative pooling, the idea that by pooling commercial mortgages event risk increases to junior bonds. This often caused us to have more conservative views on subordination levels than did other market participants, which limited the number of requests for Moody's to rate junior CMBS bonds, and in turn the deals that contain them.

Of the deals rated by Moody's, in fewer than half the cases did we rate the below-investment-grade tranches. The junior bonds in a pool comprised of junior bonds are highly exposed to credit event risk.

In order to minimize the leverage effect in re-REMICs and CUSIP CRE CDO deals and mitigate the potential for ratings transition, Moody's analysis applies a ratings transition stress. We also stress the

default probability of late-vintage CMBS collateral, reflecting our expectation that these vintages will not perform as well on average as more seasoned certificates.

Innocent Until Proven Guilty

Given the increase in CMBS subordination levels we announced in April 2007, some have asked why we did not immediately start wholesale downgrades of re-REMICs and CUSIP CRE CDOs that have collateral concentrations in late-vintage CMBS certificates.

In short, we believe that Moody's ratings analysis already captures many of the risks unique to re-REMICs and CUSIP CRE CDO deals.

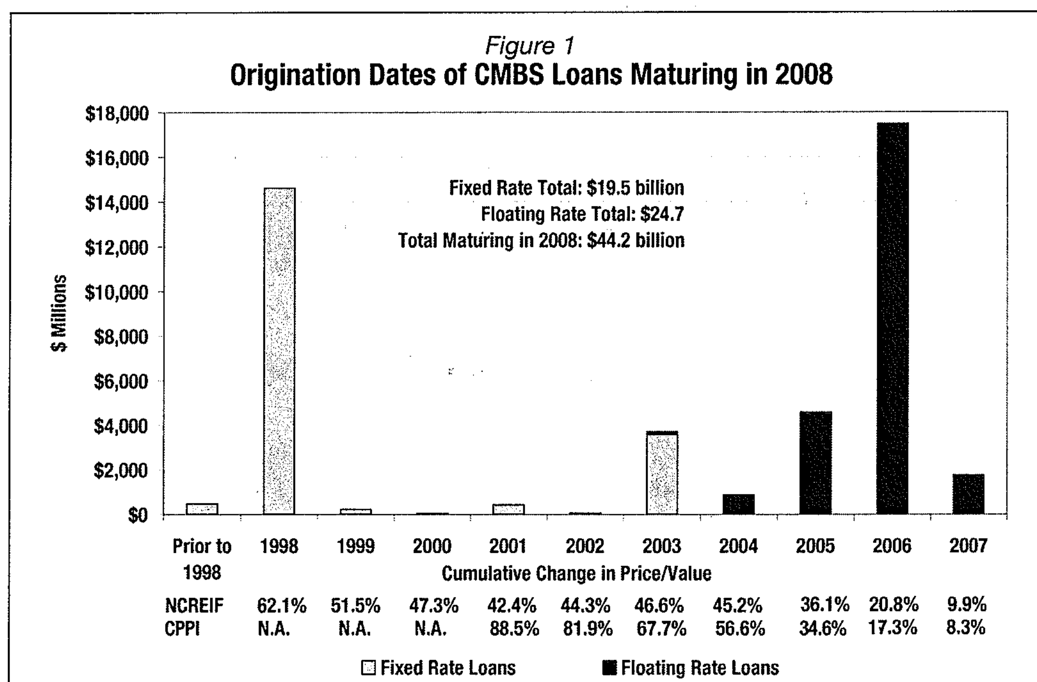
We continue to closely monitor developments in the CMBS and CRE CDO sectors, but we believe these deals, even those comprised of collateral from later vintages, should be treated as innocent until proven guilty. Full year 2007 financials for the collateral backing the underlying loans, which will be available in mid 2008, will be important to identifying which deals are on the right track and which are not.

PROPERTY PRICE DECLINES TO AFFECT RECENT FLOATERS MOST, SEASONED FIXED RATE LEAST

Moody's expects that the combination of a higher cost of debt capital and reduced expectations for rental growth will cause a reduction of property values, perhaps on the order of 15% to 20% over the next few years. This will affect different loans to different degrees.

Most fixed rate loans coming due in 2008 were made either 5 or 10 years ago (see *Figure 1*). Property prices appreciated significantly over the last 5 years (47% per NCREIF, 68% per Moody's/REAL CPPI) and may have doubled over the last 10 years. As discussed in the section below, most fixed rate loans are well positioned to pay off at balloon maturity.

Figure 1
Origination Dates of CMBS Loans Maturing in 2008



Most of the floaters due in 2008 were made in 2006. They are likely to lose some of the additional equity cushion they have built up since then but, in general, still appear to be adequately secured. Further, more than 90% of the floating rate loans made in 2006 have extension options, helping ease potential stress induced by the current state of real estate capital markets.

While LTV is an important credit metric for balloon risk, we believe DSCR to be the key metric for term default risk. A 20% value decline caused by increasing cap rates (which is what we expect to be the primary driver) is far less damaging to CMBS credit than a 20% value decline caused by falling rents, which puts pressure on both LTV and DSCR, increasing both term and balloon default risk.

Figure 2 illustrates the relationship between appreciation and loan to value ratios using both the Moody's/REAL and NCREIF indices as benchmarks. It shows what the LTV would be today for loans made at various points in time at an initial 75% LTV ($75 loan amount on $100 value at the time of origination adjusted by each index to today).

A loan made today would be at risk of losing about three quarters of its equity cushion if prices were to fall by 20% (reducing the buffer from 25% to approximately 6%). Loans made one year ago would lose about half their cushion, while loans made two years ago would be a little bit worse off than when they started. Loans made three or more years ago have had more than enough appreciation to offset a 20% value decline, not counting amortization, if any.

Figure 2

Sensitivity of LTV Ratios to Property Price Changes

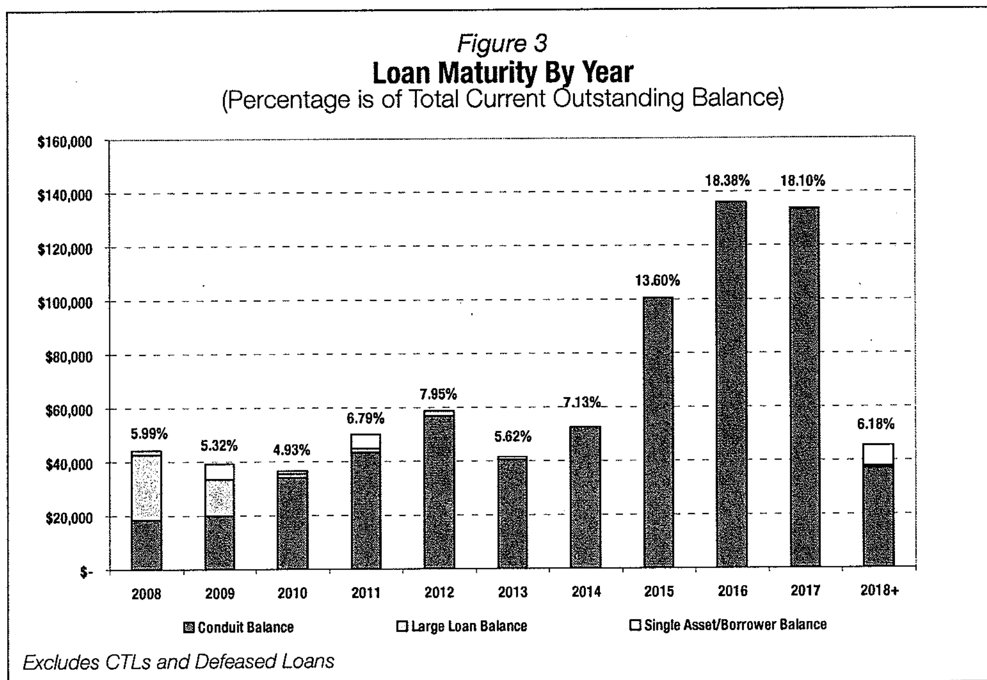
	Moody's/REAL CPPI				NCREIF			
			Prices Drop 20%				Prices Drop 20%	
Loan Made	Value Today	LTV Today	Value	LTV	Value Today	LTV Today	Value	LTV
Today	100.0	75.0%	80.0	93.8%	100.0	75.0%	80.0	93.8%
1 yr ago	108.3	69.3	86.6	86.6	109.9	68.2	87.9	85.3
2 yrs ago	117.4	63.9	93.9	79.9	120.8	62.1	96.6	77.6
3 yrs ago	134.6	55.7	107.7	69.7	136.1	55.1	108.9	68.9
4 yrs ago	156.6	47.9	125.3	59.9	145.2	51.7	116.2	64.6
5 yrs ago	167.7	44.7	134.2	55.9	146.6	51.2	117.3	63.9
6 yrs ago	181.9	41.2	145.5	51.5	144.3	52.0	115.4	65.0
7 yrs ago	188.5	39.8	150.8	49.7	142.4	52.7	113.9	65.8
8 yrs ago	N.A.	N.A.	N.A.	N.A.	147.3	50.9	117.8	63.6
9 yrs ago	N.A.	N.A.	N.A.	N.A.	151.5	49.5	121.2	61.9
10 yrs ago	N.A.	N.A.	N.A.	N.A.	162.1	46.3	129.7	57.8

Loan has initial LTV of 75% and is non-amortizing. Property has initial value of 100. Moody's/REAL CPPI initiated in fourth quarter 2000, so price changes for loans 8, 9, or 10 years old can not be calculated.

2008 BALLOON RISK APPEARS MANAGEABLE

While outstanding CMBS has grown quite large (in excess of $700 billion), the maturity profile as shown in *Figure 3* is highly back-end weighted. The next three years will see $45 billion or less mature per year, or less than 6% per year of CMBS outstanding. The biggest cluster of CMBS loan maturities comes in 2016 and 2017, reflecting the tenth anniversary of the recent liquidity surge.

While at first the prospect of managing through a liquidity crunch in a $700 billion plus market seems daunting, the small amount of near term rollovers of loans makes the process more manageable. In the early 1990s when banks and life companies comprised almost the entire commercial mortgage lending market, both were closed. This time it's CMBS that is largely closed while banks and life companies, which together comprise more than half of the overall market of commercial mortagages outstanding, remain open for business and capable of helping absorb maturing CMBS loans.



Taking a closer look, it is those maturing loans, which, if reset to current coupons, would have low DSCRs that are most likely to face refinance difficulty. *Figure 4* shows the loans maturing during calendar 2008 with three different leverage profiles if the outstanding balance were to be reset to a coupon of 7% (roughly in line with current rates): above 1.30 DSCR, 1.00 to 1.30 DSCR, and below 1.00 DSCR. Most of the loans above 1.30 should be comfortably able to refinance. Loans between 1.00 and 1.30 DSCR may have challenges refinancing, but should not be so weak as to suffer significant losses. Refinance risk is greatest for those loans with less than an indicated 1.00 DSCR, and even some of these loans may have mitigants.

Fortunately less than 15% of maturing loans are signaling potential refinance risk. Combined with only 6% of outstanding loans maturing, a balloon related serious delinquency rate of less than 1% is indicated. This, plus allowing for a doubling of the base line delinquency rate to 1.0%, would still keep CMBS delinquencies to a manageable level under 2%.

Figure 4

Loans Maturing in 2008
DSCR Recalculated As If Refinancing at 7% Coupon
For those loans reporting post-closing full-year financials

	DSCR <1.0	DSCR Between 1.0 and 1.3	DSCR >1.3	Total
Fixed and Floating				
Count of Loans	203	171	3,278	3,652
Balance ($ MM)	$2,609.18	$1,143.58	$23,649.78	$27,402.55
% of Total Fixed & Floating Balance	9.52%	4.17%	86.31%	100%
Fixed Only				
Count of Loans	193	165	3,192	3,550
Balance ($ MM)	$876.54	$920.43	$15,427.06	$17,224.03
% of Total Fixed Balance	5.09%	5.34%	89.57%	100%
Floating Only				
Count of Loans	10	6	86	102
Balance ($ MM)	$1,732.64	$223.16	$8,222.73	$10,178.52
% of Total Floating Balance	17.02%	2.19%	80.79%	100%

Includes large loan, conduit, and single asset/borrower deals. US loans only. Excludes CTLs and defeased loans. Includes only those loans that report previous fiscal year's full year NOI. For this reason, the floating rate loans are a smaller subset of the total floating rate loans maturing in 2008; loans originated in 2007 have not reported a full year's NOI, and even some loans originated in 2006 have only reported a partial year of NOI data. In short, the fixed loan balance represented here of $17.2 billion is out of a total of $19.5 billion set to mature in 2008. Similarly, the floating rate balance of $10.2 billion is out of a total of $24.8 billion.

REVIEW: 2007 RATING ACTIONS

During the fourth quarter of 2007, Moody's took rating actions on 101 securitizations with 922 CMBS classes resulting in 750 affirmations and confirmations, 160 upgrades and 12 downgrades (see *Figure 5* below). Upgrades outpaced downgrades across all categories of CMBS. For investment grade rated classes, upgrades exceeded downgrades by a wide margin (35.5:1). For below investment grade rated classes, a more modest upgrade to downgrade ratio prevailed (2.25: 1). Roughly 81.3% of the classes (750 of 922) in the reviewed transactions remained unchanged.

Figure 5

Summary of Rating Actions for Fourth Quarter 2007

Type of Action	Fusion / Conduit	Single Borrower / Large Loan	Floating	CTL / Surety	CRE CDO	TOTAL
Affirm / Confirm	602	24	46	4	74	750
Upgrade - IG	110	19	8	1	4	142
Upgrade - BIG	14	1	2	1	0	18
Downgrade - IG	0	3	0	1	0	4
Downgrade - BIG	6	2	0	0	0	8
TOTAL	732	49	56	7	78	922

NOTE: Excludes Notional Balance Classes.

Figure 6 summarizes Moody's rating actions for the calendar year 2007. For the year, roughly 78.7% of the classes reviewed involved rating affirmations or confirmations. The upgrade to downgrade ratio was 11 to 1 overall. For investment grade rated classes the upgrade/downgrade ratio was 43.8:1 while for below investment grade rated classes it was 1.2:1.

Figure 6

Summary of Rating Actions for Calendar Year 2007

Type of Action	Fusion / Conduit	Single Borrower / Large Loan	Floating	CTL / Surety	CRE CDO	TOTAL
Affirm / Confirm	3,164	169	166	19	120	3,638
Upgrade - IG	590	101	104	5	32	832
Upgrade - BIG	57	9	3	3	0	72
Downgrade - IG	1	3	12	3	0	19
Downgrade - BIG	49	6	3	1	0	59
TOTAL	3,861	288	288	31	152	4,620

NOTE: Excludes Notional Balance Classes.

MOST® SCORES INDICATE BROAD STABILITY

As discussed above, the current distribution of investment grade MOST® Scores, as shown in *Figure 7*, indicates that the majority of fixed-rate CMBS classes (74.8%) should remain relatively stable over the near term and that investment grade upgrades should continue to exceed downgrades. Ratings on approximately 67.4% of the floating-rate investment-grade CMBS classes appear stable, with the balance also favoring upgrades.

Figure 7

Investment Grade MOST® Score Distribution For Conduit and Fusion Transactions

MOST Score	Fixed Number	Fixed Percent	Floating Number	Floating Percent	Total Number	Total Percent
0 - 34	0	0.0%	0	0.0%	0	0.0%
35 - 65	294	74.8	29	67.4	323	74.1
66 - 100	99	25.2	14	32.6	113	25.9
TOTAL	393	100.0%	43	100.0%	436	100.0%

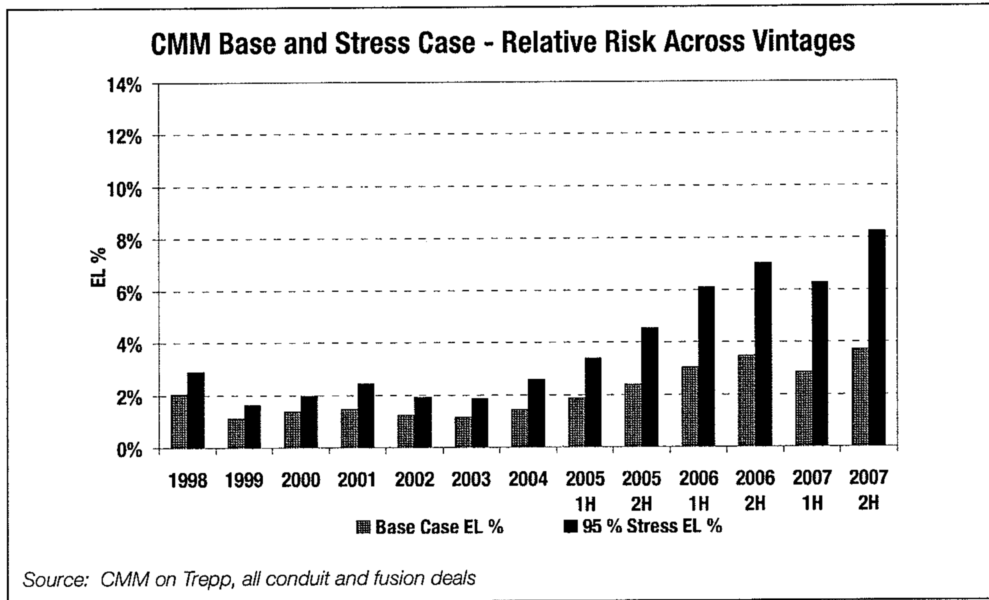
The current distribution of below investment grade MOST® Scores, as shown in *Figure 8*, indicates that for both upper and lower speculative grade bonds, the majority of the scores fall in the middle range, which indicates stable ratings for the most part. However, based on the implied upgrade to downgrade ratios, it would appear that the lower speculative grade bonds have more risk of downgrade than do the upper speculative grade bonds.

Figure 8

Below Investment Grade MOST® Score Distribution For Conduit and Fusion Transactions

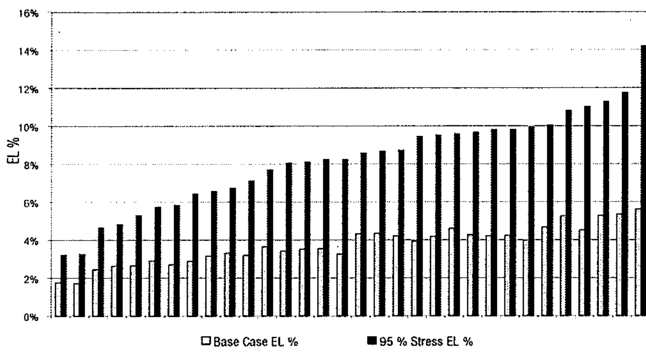
MOST® Score	Upper Speculative Grade Bonds		Lower Speculative Grade Bonds	
	Number	Share	Number	Share
0 - 34	4	1.2%	17	5.3%
35 - 65	298	91.4	267	82.7
66 - 100	24	7.4	39	12.1
TOTAL	326	100.0%	323	100.0%

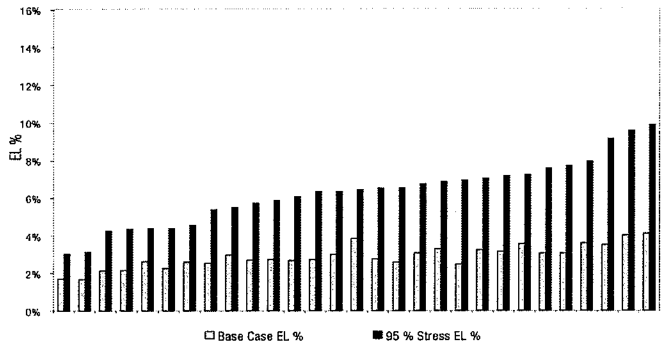
APPENDIX

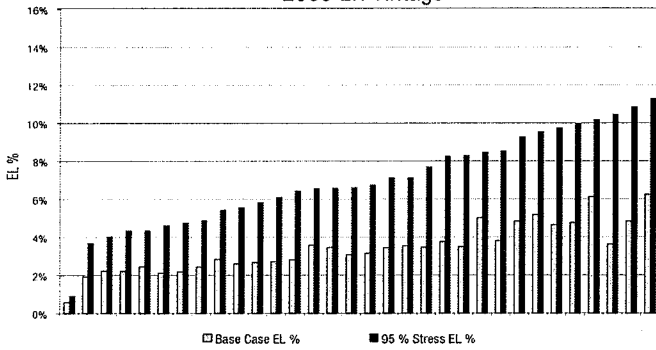


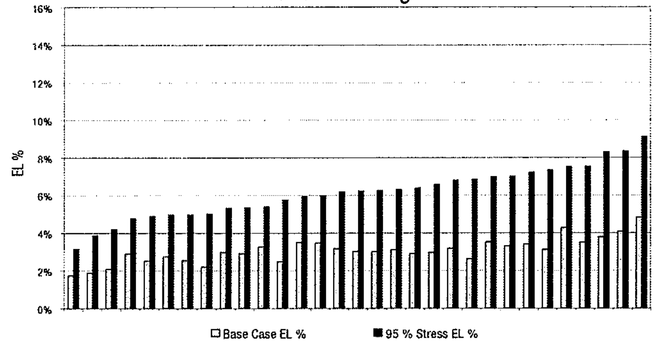
Source: *CMM on Trepp, all conduit and fusion deals*

CMM on Trepp
Relative Risk Across Deals from Same Vintage
(each pair of bars represents one deal)









CMM on Trepp
Relative Risk Across Deals from Same Vintage
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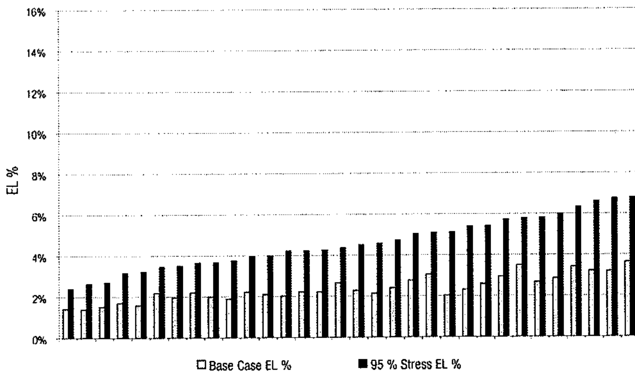
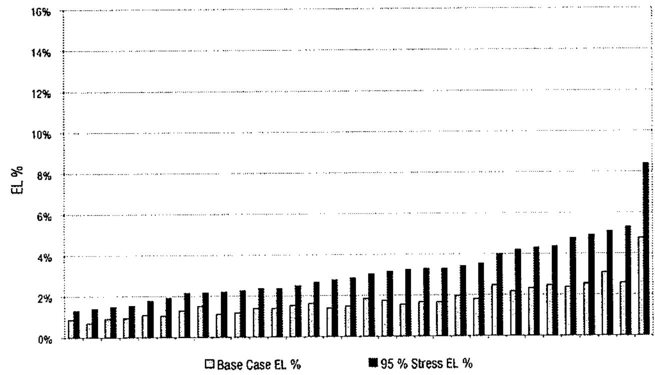
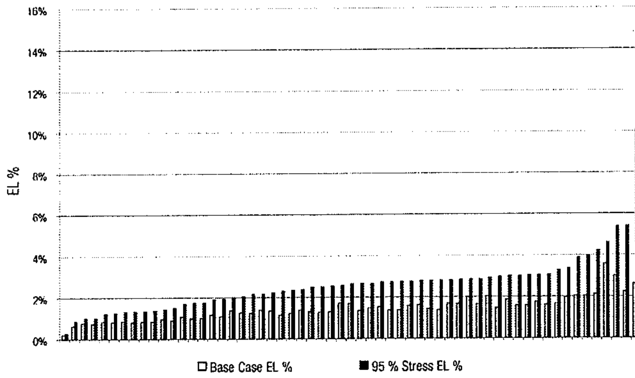
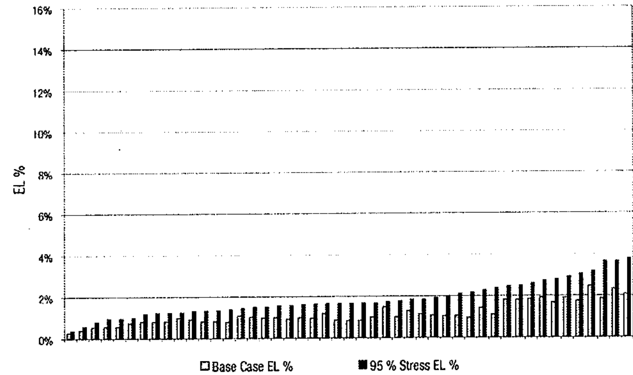
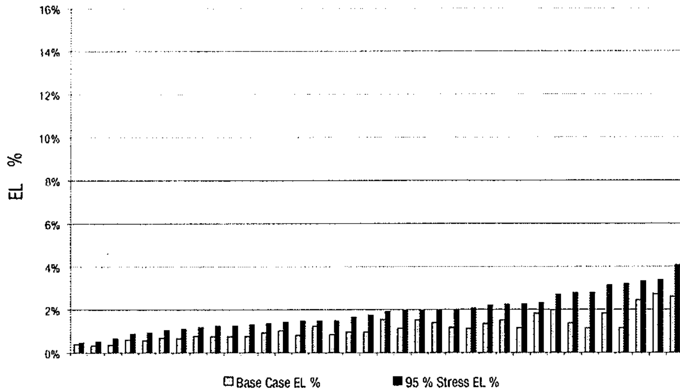


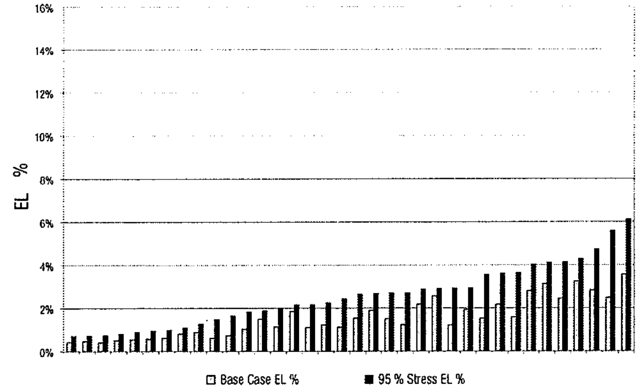


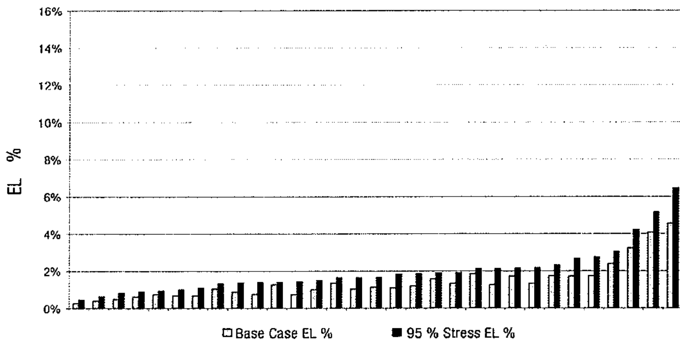


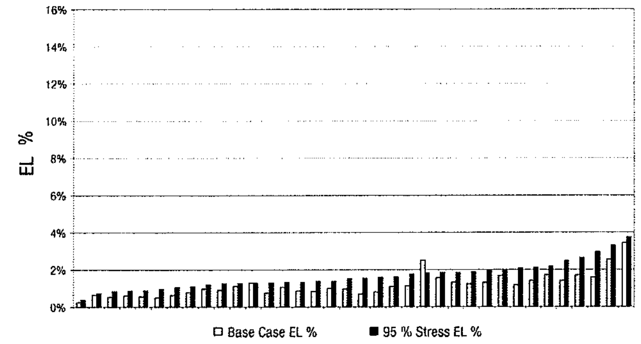


CMM on Trepp
Relative Risk Across Deals from Same Vintage
(each pair of bars represents one deal)









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