

RESEARCH/ WHITEPAPER

Author

Peter Sallerson,
Senior Director
peter.sallerson@moodys.com
+1.212.553.9447

Contact Us

Americas
+1.212.553.165
clientservices@moodys.com

Europe
+44.20.7772.5454
clientservices.emea@moodys.com

Asia (Excluding Japan)
+85.2.2916.1121
clientservices.asia@moodys.com

Japan
+81.3.5408.4100
clientservices.japan@moodys.com

Collateral Defaults vs. Issuer Defaults

Highlights

- » CLO's report the collateral default percentage.
- » Moody's Analytics also analyzed the percentage of the collateral that is defaulted assuming all obligations by an issuer are defaulted if any obligation is in default.
- » The Issuer level default percentage under the more expansive definition of default is typically greater than the default percentage reported.
- » Such difference is a useful indicator of the need for further collateral analysis of the Suspected Default collateral.

This article is authored and published by Moody's Analytics, Inc. and does not in any way reflect the opinion of Moody's Investors Service, Inc., its affiliated credit rating agency.

Defaulted securities in CLO portfolios are often an area of focus by CLO investors and managers. Returns to CLO investors are highly dependent on the credit risk of the underlying CLO portfolios and defaulted securities may be an important indicator of portfolio credit risk. In this paper, we analyze CLO default percentages under a broader definition of default to try to identify additional portfolio securities worth a closer look. Rather than just look at whether a particular issue is identified as defaulted by a CLO ("Identified Default" or "ID"), we also measured the current percentage of collateral that is in default by assuming if any obligation of an issuer is indicated as defaulted¹ in any CLO, then all obligations of that issuer are tagged Suspected Default ("SD"). The deal SD percentage is then tabulated. SDs could occur when collateral is considered defaulted by one CLO and not another as a result of varying default definitions in their respective CLO indentures. Alternatively, certain loan characteristics may allow some obligations of an issuer to be in default while others are not. It is important to note that all defaults are not alike. Particularly with leveraged loans which are senior secured obligations, being in default may not affect the timeliness of interest and principal payments. Some defaulted leveraged loans trade close to par.

Tables 1 & 2 show examples of collateral that is labeled SD and which ones are also in default in 2 different existing CLO's. For example, Edmentum Inc in CLO 1 is classified as SD since at least 1 other CLO has classified an obligation of the same issuer as defaulted yet CLO has not classified it as a default. The same could be said for US Foods in CLO 2.

Table 1: CLO 1 - SD Collateral

Suspected Default	Defaulted
Sabine Oil & Gas LLC - Second Lien Term Loan	Yes
Allied Security Holdings LLC - First Lien Closing Date Term Loan	No
Caesars Entertainment Resort Properties LLC - First Lien Term B Loan	No
FCA US LLC - Senior Secured Tranche B Term Loan	No
Gates Global LLC - Initial Dollar Term Loan	No
Southeast PowerGen LLC - Term B Loan	No
Texas Competitive Electric Holdings Company LLC - DIP Term Loan	No
US Foods Inc - Incremental Term Loan	No

Table 2: CLO 2 - SD Collateral

Suspected Default	Defaulted
Education Management II LLC Tranche A Term Loan	Yes
Education Management II LLC Tranche B Term Loan - PIK	Yes
Education Management II LLC Tranche B Term Loan Non-PIK	Yes
Affinion Group Initial Second Lien Term Loan	No
Affinion Group Tranche B Term Loan	No
Allied Security Holdings LLC First Lien Closing Date Term Loan	No
Caesars Entertainment Resort Properties LLC First Lien Term B Loan	No
Edmentum Inc First Lien Term Loan	No
FCA US LLC Senior Secured Tranche B Term Loan	No
FCA US LLC Tranche B Term Loan	No
Texas Competitive Electric Holdings Company LLC DIP Term Loan	No

¹ At least 500,000 of principal in the obligation's currency must be in default for all obligations of that Issuer to be considered SD.

US BSL CLO Market

The analysis of SD collateral as compared to ID collateral was done by vintage and currency. We have first focused on the US dollar market and the vintages with the greatest issuance. (Appendix I gives a breakdown of the CLO's analyzed per vintage & currency.).

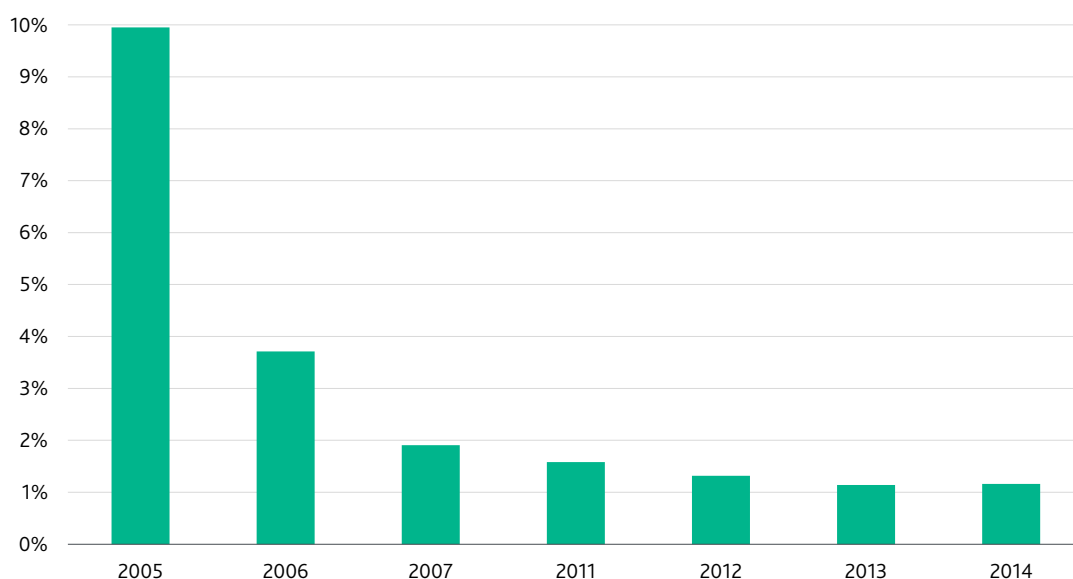
Table 3: US ID vs SD by Vintage

Vintage	Indicated Defaults ("ID")			Suspected Defaults ("SD")			Difference Between ID & SD Defaults		
	Average	Max	Min	Average	Max	Min	Average	Max	Min
2005	30.17%	100.00%	0.00%	40.12%	100.00%	0.00%	9.95%	97.48%	0.00%
2006	5.58%	100.00%	0.00%	9.30%	100.00%	0.00%	3.71%	100.00%	0.00%
2007	2.11%	100.00%	0.00%	4.02%	100.00%	0.00%	1.91%	8.72%	0.00%
2011	0.41%	3.81%	0.00%	1.99%	7.17%	0.00%	1.58%	3.61%	0.00%
2012	0.29%	6.36%	0.00%	1.61%	10.03%	0.00%	1.32%	5.87%	0.00%
2013	0.23%	8.90%	0.00%	1.37%	10.38%	0.00%	1.14%	4.82%	0.00%
2014	0.07%	1.00%	0.00%	1.23%	4.24%	0.00%	1.16%	4.24%	0.00%
Grand Total	2.30%	100.00%	0.00%	4.28%	100.00%	0.00%	1.97%	100.00%	0.00%

As you can see from the table, there are larger differences between SD and ID levels, the older the CLO vintage. This observation is not unusual given that performing collateral tends to get redeemed, matures or is sold by the late stages of a CLO's life cycle. The average ID level for the 2005 vintage is over 30% and over 40% when you measure SD's. However, there is a very limited amount of CLO's remaining from the 2005 vintage and much of that is likely a result of adverse selection bias. There are even some 2005-2007 CLO's where all of the remaining collateral is ID. Conversely, 75% of the 2007 Vintage (US & Euro CLO's) have a ID level of 3.1% or less despite the interim recession.

Let's focus on the CLO 2.0 deals (Vintage 2011-2014). The average ID balance is very small with a range of 0.07% to 0.4%. The SD's are between 1.23% and 1.99% with the largest CLO's having over 10%. These higher numbers may not result in higher losses, but CLO investors and collateral managers may want to undertake further analysis of those issuers to determine if there is a potential problem with the related collateral. If so, early action could enhance CLO investment performance. Chart 1 shows the difference of the Average SD vs ID levels by vintage. The difference declines significantly in the CLO 2.0 vintages.

Chart 1: Average Difference Between Defaulted and SD Percentage (USD)



Source: Moody's Analytics

Up until this point we have focused on relatively wide differences between ID and SD balances. But what does it mean when the difference between SD and ID levels is relatively narrow? For such CLOs, it is very possible that the narrow difference between SD and ID could be indicative of a more restrictive definition of what is a "defaulted" security and thus could be an important indicator not just for assessing the current portfolio but also that future portfolios may be more conservatively reported. Alternatively, the collateral manager may be focused on avoiding collateral where the obligation may not be in default, but the issuer's other issues are defaulted. Further CLO/Manager review is likely warranted.

Collateral managers ("Manager 1") extensively analyze the assets of their CLO's. Many, however, do not focus on the collateral of other CLO's. The knowledge of collateral which other CLO's list as ID, but are not ID in their portfolios may provide trading opportunities. On the one hand, the "other CLO" may be more inclined to sell such collateral creating a buying opportunity if Manager 1 is bullish on the obligation. Conversely, if Manager 1 sees such obligations as ID in many CLO's and that manager is also worried about it, Manager 1 may want to sell the obligation early to "get ahead" of the potential selling by other CLO's.

European CLO Market

Table 4: European Defaults vs SD by Vintage

Vintage	Indicated Defaults ("ID")			Suspected Defaults ("SD")			Difference Between ID & SD Defaults		
	Average	Max	Min	Average	Max	Min	Average	Max	Min
2005	4.07%	18.86%	0.00%	15.04%	39.99%	1.08%	10.97%	39.66%	1.05%
2006	5.43%	99.98%	0.00%	11.07%	100.00%	0.00%	5.64%	15.48%	0.00%
2007	2.91%	33.81%	0.00%	8.90%	71.70%	0.00%	5.99%	46.69%	0.00%
2008	9.44%	99.99%	0.00%	11.47%	100.00%	0.00%	2.03%	7.51%	0.00%
2013	0.09%	0.98%	0.00%	1.74%	4.30%	0.00%	1.65%	4.30%	0.00%
2014	0.11%	2.69%	0.00%	1.62%	4.21%	0.00%	1.52%	4.21%	0.00%
Grand Total	3.50%	99.99%	0.00%	8.40%	100.00%	0.00%	4.90%	46.69%	0.00%

The European vintages we have focused on are 2005-2008 & 2013-2014. Appendix I gives a breakdown of the number of CLO's per vintage.

Again and as anticipated, the older deals tend to have the higher default percentages. As with the US CLO's, there is a significant difference between the indicated default holdings and that of the SD's. Interestingly, the 2013-2014 vintages have almost no ID's yet have SD's of 1.6% to 1.7%. Chart 2 depicts the difference between the average of each for the displayed vintages.

Chart 2: Average Difference Between Defaulted and SD Percentage (Euro)



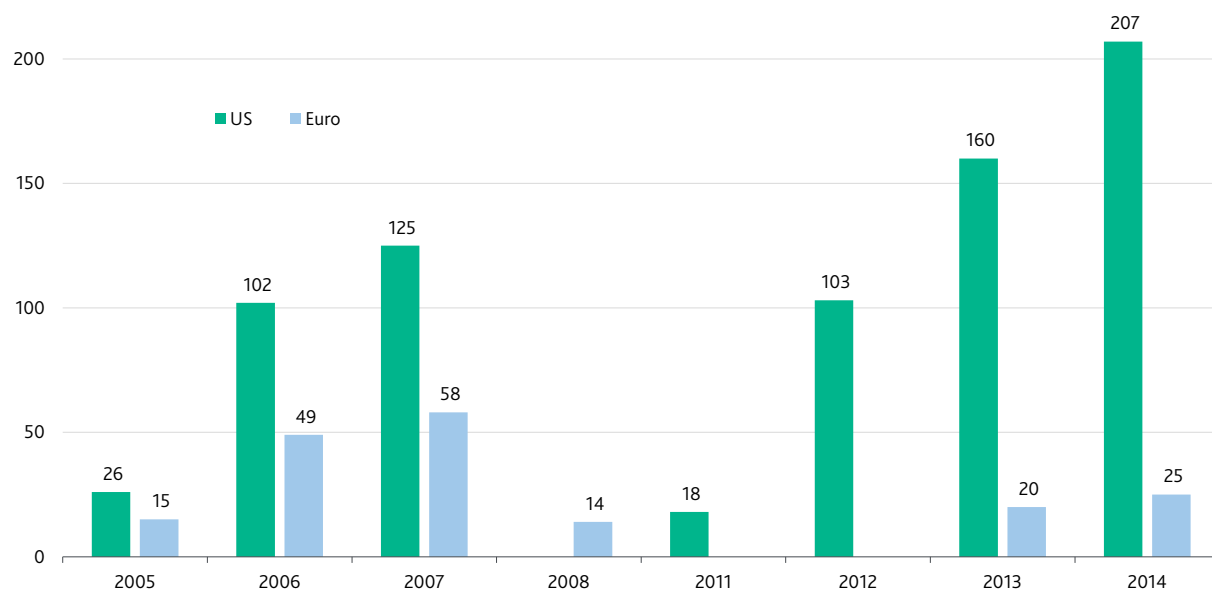
Source: Moody's Analytics

As with the US CLO's, the 2.0 CLO's have the lowest differential. However, the 2008 vintage is also only has a moderate difference.

Conclusion

One purpose of the various tools developed by Moody's Analytics is to add transparency to the CLO market. Many participants review the defaulted collateral in a portfolio. In this paper, we introduce a measure of the current percentage of collateral that is "SD" i.e., if any obligation of any issuer in any CLO is in default, then all obligations of that issuer is SD. This metric could indicate collateral which may warrant further analysis. By determining the level of impairment of such collateral (if any), analysts can further differentiate CLO performance and potential investment or divestiture opportunities. Additionally, by knowing which collateral is ID in other CLO's, opportunistic trading possibilities may arise for asset managers

Appendix I Outstanding CLO's by Vintage & Currency in the Sample



© 2015 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS FOR RETAIL INVESTORS TO CONSIDER MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS IN MAKING ANY INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing the Moody's Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from \$1,500 to approximately \$2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody's.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

For Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657 AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail clients. It would be dangerous for "retail clients" to make any investment decision based on MOODY'S credit rating. If in doubt you should contact your financial or other professional adviser.