

RESEARCH/ WHITEPAPER

Author

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

Contact Us

Americas
+1.212.553.165
clientservices@moody.com

Europe
+44.20.7772.5454
clientservices.emea@moody.com

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

Japan
+81.3.5408.4100
clientservices.japan@moody.com

CLO Rankings by Vintage (updated January 2016)

Any ranking system of structured finance instruments is generally subject to some level of subjectivity. When ranking CLO's, for example, does one look primarily to equity performance, performance of the notes or performance of the collateral? If the methodology is a blend, how does one weight the various measures? Any attempt to "rank" CLO's is just one of many alternative methods to provide such scoring. Alternative methods would generally yield different results. Given the nature of any ranking system, the results should be interpreted appropriately.

In this report, Moody's Analytics has updated the prior deal rankings of the non-terminated 2005–2014 CLO's by vintage using a variety of scoring factors. 2015 US CLO's that have had at least two payment periods are also included.¹ The prior ranking was a function of equity returns (with a slight emphasis on recent returns), the standard deviation of those returns, junior overcollateralization test cushion, the number of collateral quality tests which are failing, the Moody's WARF test cushion, the ratio of the market value of the collateral to the par value of the liabilities, annualized par building and the difference between Suspected Defaults² and current defaults. For this report, the average cushion of the Diversity Score, Moody's WARF, Weighted Average Life and Weighted Average Recovery Rate tests was added.³

These multiple factors are the basis of the ranking to better balance the debt and equity performance. (The Moody's Analytics MESR⁴ is an equity based ranking of CLO's.) The analysis includes over 750 US CLO's and about 180 European deals. The frequency a manager shows up is a function of the performance and the number of CLO's they manage as well as which CLO's have not been redeemed. Strongly performing CLO's may have been redeemed which is more likely to affect CLO 1.0's. We list the top CLO's for each vintage alphabetically.

US BSL CLO's

With the limited number of CLO's in 2008 - 2010, these vintages are not included in the analysis and only 5 are displayed for 2015. Additionally, the number of CLO 1.0's dropped by about 15% due to deal redemptions. The most frequently ranked managers of US broadly syndicated loan ("BSL") CLO's are CSAM, Symphony, BlueMountain and Apollo. BlueMountain is a newcomer to the top group. Again, CSAM has three of the top CLO's in 2006 and 2007. A few other managers have two CLO's within the top ten of any of vintage, but only CSAM and Highland have three. CSAM is in the top group in each vintage other than 2005 and 2015. CSAM's 12 deals represents 60% of the non-terminated CSAM deals from the selected vintages. Highland, MJX, LCM, CIFC, Columbia and Voya are also among the top performers with 3 deals within the top ten (or top five for 2015) of the vintages. Eleven managers have at least two deals within the top ten in any one vintage. Nine managers represent 50% of the top ranked managers. For managers with at least four deals outstanding from the indicated vintages, CSAM, Feingold O'Keeffe and Symphony have the greatest proportion within the tables. Twelve managers only had ranked 1.0 CLO's while 23 had only 2.0 CLO's. There are 38 different managers out of 75 possible in the ranking. Seven managers are no longer in the top group while eleven have been added since the October report. Interestingly, 70% of the 2007 vintage top ten are from three managers which is more concentrated than any other vintage.

Deal Name	Vintage	Currency	Collateral Manager
Allegro CLO II, Ltd.	2015	USD	AXA Investment Managers
Bowman Park CLO, Ltd.	2015	USD	GSO / Blackstone Debt Funds Management
LCM XVIII Limited Partnership	2015	USD	LCM Asset Management LLC
Magnetite XII, Ltd.	2015	USD	BlackRock Financial Management
York CLO-1 Ltd.	2015	USD	York CLO Managed Holdings LLC

Deal Name	Vintage	Currency	Collateral Manager
ALM X, Ltd.	2014	USD	Apollo Credit Management LLC
Atrium XI	2014	USD	Credit Suisse Asset Management
CIFC Funding 2014-IV, Ltd.	2014	USD	CIFC Asset Management LLC
CIFC Funding 2014-V, Ltd.	2014	USD	CIFC Asset Management LLC
Galaxy XVII CLO, Ltd.	2014	USD	PineBridge Investments LLC
Highbridge Loan Management 3-2014, Ltd.	2014	USD	Highbridge Principal Strategies LLC
Madison Park Funding XV, Ltd.	2014	USD	Credit Suisse Asset Management
Staniford Street CLO, Ltd.	2014	USD	Feingold O'Keeffe
Voya CLO 2014-2, Ltd.	2014	USD	Voya Investment Management (ING)
Zais CLO 1, Limited	2014	USD	ZAIS Group Inc.

Deal Name	Vintage	Currency	Collateral Manager
ALM VII(R), LTD.	2013	USD	Apollo Credit Management LLC
Atrium X	2013	USD	Credit Suisse Asset Management
BlueMountain CLO 2013-2, Ltd	2013	USD	BlueMountain Capital Management LLC
Kingsland VI	2013	USD	Kingsland Capital Management LLC
LCM XIV Limited Partnership	2013	USD	LCM Asset Management LLC
Longfellow Place CLO Ltd	2013	USD	Feingold O'Keeffe
Marathon CLO V Ltd.	2013	USD	Marathon Asset Management LP
OZLM Funding IV, Ltd.	2013	USD	Och-Ziff Loan Management LP
Regatta II Funding L.P.	2013	USD	Napier Park Global Capital, LLC
Voya CLO 2013-2, Ltd.	2013	USD	Voya Investment Management (ING)

Deal Name	Vintage	Currency	Collateral Manager
ALM VI, Ltd.	2012	USD	Apollo Credit Management LLC
ALM VII, LTD.	2012	USD	Apollo Credit Management LLC
Atrium VIII	2012	USD	Credit Suisse Asset Management
BlueMountain CLO 2012-1 Ltd.	2012	USD	BlueMountain Capital Management LLC
BlueMountain CLO 2012-2, Ltd.	2012	USD	BlueMountain Capital Management LLC
Carlyle Global Market Strategies CLO 2012-2, Ltd.	2012	USD	Carlyle Investment Management LLC
Fraser Sullivan CLO VII Ltd.	2012	USD	3i Group plc
Golub Capital Partners CLO 11, Ltd.	2012	USD	Golub Capital Management LLC
OCP CLO 2012-2, Ltd.	2012	USD	Onex Credit Partners LLC
Voya CLO 2012-4, Ltd.	2012	USD	Voya Investment Management (ING)

Deal Name	Vintage	Currency	Collateral Manager
AMMC CLO IX, Limited	2011	USD	American Money Management Corporation
Atrium VII	2011	USD	Credit Suisse Asset Management
BlueMountain CLO 2011-1 Ltd.	2011	USD	BlueMountain Capital Management LLC
Dryden XXII Senior Loan Fund	2011	USD	Prudential Investment Management Inc.
Flatiron CLO 2011-1 Ltd.	2011	USD	New York Life Investment Management LLC
Galaxy XI CLO, Ltd.	2011	USD	PineBridge Investments LLC
Golub Capital Partners CLO 10, Ltd.	2011	USD	Golub Capital Management LLC
LCM X LP	2011	USD	LCM Asset Management LLC
Madison Park Funding VII, Ltd.	2011	USD	Credit Suisse Asset Management
Symphony CLO VII, Ltd.	2011	USD	Symphony Asset Management LLC

Deal Name	Vintage	Currency	Collateral Manager
Cent CDO 15 Limited	2007	USD	Columbia Management Investment Advisors, LLC
GoldenTree Loan Opportunities III, Limited	2007	USD	GoldenTree Asset Management LP
GoldenTree Loan Opportunities IV, Limited	2007	USD	GoldenTree Asset Management LP
Madison Park Funding IV, Ltd.	2007	USD	Credit Suisse Asset Management
Madison Park Funding V, Ltd.	2007	USD	Credit Suisse Asset Management
Madison Park Funding VI, Ltd.	2007	USD	Credit Suisse Asset Management
Newstar Commercial Loan Trust 2007-1	2007	USD	NewStar Financial
Symphony CLO III, Ltd.	2007	USD	Symphony Asset Management LLC
Symphony CLO V, Ltd.	2007	USD	Symphony Asset Management LLC
Venture VIII CDO, Limited	2007	USD	MJX Asset Management LLC

Deal Name	Vintage	Currency	Collateral Manager
Atrium V	2006	USD	Credit Suisse Asset Management
Cent CDO 12 Limited	2006	USD	Columbia Management Investment Advisors, LLC
CIFC Funding 2006-II, Ltd.	2006	USD	CIFC Asset Management LLC
Eaton Vance CDO VIII, Ltd.	2006	USD	Eaton Vance Management
Madison Park Funding II, Ltd.	2006	USD	Credit Suisse Asset Management
Madison Park Funding III, Ltd.	2006	USD	Credit Suisse Asset Management
Sands Point Funding Ltd.	2006	USD	Guggenheim Investment Management LLC
Symphony CLO II, Ltd.	2006	USD	Symphony Asset Management LLC
Venture VII CDO Limited	2006	USD	MJX Asset Management LLC
Wasatch CLO Ltd.	2006	USD	Invesco Inc.

Deal Name	Vintage	Currency	Collateral Manager
APIDOS CDO I	2005	USD	CVC Credit Partners LLC
Baker Street Funding 2005-1 CLO	2005	USD	Seix Investment Advisors LLC
Black Diamond CLO 2005-1 Ltd.	2005	USD	Black Diamond Capital Management LLC
Black Diamond CLO 2005-2	2005	USD	Black Diamond Capital Management LLC
Centurion CDO 9 Limited	2005	USD	Columbia Management Investment Advisors, LLC
Gleneagles CLO Ltd	2005	USD	Highland Capital Management LP
KKR Financial CLO 2005-2, Ltd.	2005	USD	KKR Financial Advisors LLC
LIBERTY CLO, LTD.	2005	USD	Highland Capital Management LP
Southfork CLO Ltd	2005	USD	Highland Capital Management LP
Venture V CDO Limited	2005	USD	MJX Asset Management LLC

Note: unpriced loans are assumed to have a market price equal to the average of that type of loan in the market, unpriced bonds are priced based upon seniority and if they are performing while equity is essentially valued at zero. Outlying values for certain factors have been capped or floored. Where selected data fields are not reported, reasonable approximations have been used.

Manager Frequency for US\$ CLO's by Vintage

Manager Name	2005	2006	2007	2011	2012	2013	2014	2015	Total
Credit Suisse Asset Management		3	3	2	1	1	2		12
BlueMountain Capital Management LLC				1	2	1			4
Apollo Credit Management LLC					2	1	1		4
Symphony Asset Management LLC		1	2	1					4
Highland Capital Management LP	3								3
MJX Asset Management LLC	1	1	1						3
LCM Asset Management LLC				1		1		1	3
CIFC Asset Management LLC		1					2		3
Columbia Management Investment Advisors, LLC	1	1	1						3
Voya Investment Management (ING)					1	1	1		3
Golub Capital Management LLC				1	1				2
GoldenTree Asset Management LP			2						2
PineBridge Investments LLC				1			1		2
Feingold O'Keeffe						1	1		2
Black Diamond Capital Management LLC	2								2
KKR Financial Advisors LLC	1								1
Napier Park Global Capital, LLC						1			1
Marathon Asset Management LP						1			1
Seix Investment Advisors LLC	1								1
CVC Credit Partners LLC	1								1
Prudential Investment Management Inc.				1					1
BlackRock Financial Management								1	1
NewStar Financial			1						1
American Money Management Corporation				1					1
Och-Ziff Loan Management LP						1			1
New York Life Investment Management LLC				1					1
Eaton Vance Management		1							1
Kingsland Capital Management LLC						1			1
Onex Credit Partners LLC					1				1
Carlyle Investment Management LLC					1				1
AXA Investment Managers								1	1
Invesco Inc.		1							1
ZAIS Group Inc.							1		1
GSO / Blackstone Debt Funds Management								1	1
York CLO Managed Holdings LLC								1	1
Guggenheim Investment Management LLC		1							1
3i Group plc					1				1
Highbridge Principal Strategies LLC							1		1
Grand Total	10	10	10	10	10	10	10	5	75

Euro CLO's

The same updated analysis was completed for Euro denominated CLO's. Since the European CLO market is much smaller, only the top five within each vintage is displayed. Several vintages were excluded given the limited number of issues in those years (2009-2012, 2015). GSO/Blackstone and Alcentra are in the top group in four of the six vintages. However, only GSO /Blackstone has 2 CLO's in the top five in one vintage. As a proportion of CLO's outstanding from the selected vintages, Oak Hill, Cairn Capital and PineBridge have the largest representation on the list for those managers with 2 or more CLO's outstanding. There are 17 different managers in the ranking out of the 30 positions and five managers represent 50% of the total. It is also noteworthy that only a few of the top ranked managers are exclusive to the European market. 65% of the managers in the European ranking are also in the US ranking while most of the others also issue US CLO's. Eight managers only had 1.0 CLO's ranked while four are only in the 2.0 CLO ranking. Four managers are now in the table and five are no longer in the top five for a vintage as compared to the October report.

Deal Name	Vintage	Currency	Collateral Manager
ALME Loan Funding III Limited	2014	EUR	Apollo Credit Management LLC
Cairn CLO IV B.V.	2014	EUR	Cairn Capital Ltd.
Halcyon Loan Advisors European Funding 2014 B.V.	2014	EUR	Halcyon Loan Investors LP
Harvest CLO IX Limited	2014	EUR	3i Group plc
Jubilee CLO 2014-XIV B.V.	2014	EUR	Alcentra Inc.

Deal Name	Vintage	Currency	Collateral Manager
Ares European CLO VI B.V.	2013	EUR	Ares Management, LLC
Cadogan Square CLO V B.V.	2013	EUR	Credit Suisse Asset Management
Cairn CLO III B.V.	2013	EUR	Cairn Capital Ltd.
Dryden 29 Euro CLO 2013 B.V.	2013	EUR	Prudential Investment Management Inc.
Euro-Galaxy III CLO B.V.	2013	EUR	PineBridge Investments LLC

Deal Name	Vintage	Currency	Collateral Manager
Harbourmaster Pro-Rata CLO 3 B.V.	2008	EUR	GSO / Blackstone Debt Funds Management
Harvest CLO V Plc	2008	EUR	3i Group plc
Koeniginstrasse I S.A.R.L	2008	EUR	Pacific Investment Management Company
Laurelin II B.V	2008	EUR	GoldenTree Asset Management LP
Wood Street CLO V B.V.	2008	EUR	Alcentra Inc.

Deal Name	Vintage	Currency	Collateral Manager
CELF Low Levered Partners plc.	2007	EUR	Carlyle Investment Management LLC
Cordatus Loan Fund II P.L.C.	2007	EUR	CVC Credit Partners LLC
Harbourmaster CLO 9 B.V	2007	EUR	GSO / Blackstone Debt Funds Management
OAK HILL EUROPEAN CREDIT PARTNERS II P.L.C.	2007	EUR	Oak Hill Advisors LP
Wood Street CLO VI B.V.	2007	EUR	Alcentra Inc.

Deal Name	Vintage	Currency	Collateral Manager
Duchess VII CLO B.V.	2006	EUR	Babson Capital Management LLC
Euro Galaxy CLO B.V.	2006	EUR	PineBridge Investments LLC
Gateway III - Euro CLO S.A.	2006	EUR	Prudential Investment Management Inc.
Harbourmaster CLO 7 B.V.	2006	EUR	GSO / Blackstone Debt Funds Management
OAK HILL EUROPEAN CREDIT PARTNERS I P.L.C.	2006	EUR	Oak Hill Advisors LP

Deal Name	Vintage	Currency	Collateral Manager
Adagio II CLO Plc	2005	EUR	AXA Investment Managers
Boyne Valley B.V.	2005	EUR	GSO / Blackstone Debt Funds Management
Cadogan Square CLO B.V.	2005	EUR	Credit Suisse Asset Management
Harbourmaster CLO 5 B.V.	2005	EUR	GSO / Blackstone Debt Funds Management
Wood Street CLO 1 B.V.	2005	EUR	Alcentra Inc.

Note: unpriced loans are assumed to have a market price equal to the average of that type of loan in the market, unpriced bonds are priced based upon seniority and if they are performing while equity is essentially valued at zero. Outlying values for certain factors have been capped or floored. Where selected data fields are not reported, reasonable approximations have been used.

Manager Frequency for Euro CLO's by Vintage

CLO Managers	2005	2006	2007	2008	2013	2014	Total
GSO / Blackstone Debt Funds Management	2	1	1	1			5
Alcentra Inc.	1		1	1		1	4
Prudential Investment Management Inc.		1			1		2
Oak Hill Advisors LP		1	1				2
PineBridge Investments LLC		1			1		2
Cairn Capital Ltd.					1	1	2
3i Group plc				1		1	2
Credit Suisse Asset Management	1				1		2
Apollo Credit Management LLC						1	1
Babson Capital Management LLC		1					1
Ares Management, LLC					1		1
CVC Credit Partners LLC			1				1
Pacific Investment Management Company				1			1
GoldenTree Asset Management LP				1			1
Carlyle Investment Management LLC			1				1
AXA Investment Managers	1						1
Halcyon Loan Investors LP						1	1
Total	5	5	5	5	5	5	30

While no ranking system by definition is perfect, we offer a possible approach to viewing CLO performance which incorporates both the debt and the equity. In our analysis, the CLO's are ranked by a variety of factors beyond their equity returns in an effort to balance the interests of the equity with that of the debt investors. As a result, deals that ranked moderately in regards to equity returns, may jump up to make the above tables given their strength in other factors. Conversely, CLO's that ranked high solely based upon their equity returns, may drop out of the table through a combination of lower than normal test cushions, low collateral values/par building and/or a higher than typical variance in equity returns. When analyzing CLO performance, the factors selected and relative weight one gives to the various factors will cause differing CLO's to be more attractive as buy or sell opportunities. Careful and complete analysis will highlight these differences.

¹ There were not enough qualified Euro CLO's to make the 2015 ranking useful. Only the top five 2015 US CLO's were displayed. The data is taken from Monthly Surveillance reports as of January 6, 2016

² See "Collateral Defaults vs Issuer Defaults" 7-19-15.

³ The cushions were normalized to reflect the typical numerical difference between a Diversity Cushion and a WARF Cushion, for example. In order to mitigate any unusual results from highly amortized CLO's, the deal factor was incorporated into the analysis.

⁴ Moody's Analytics Equity Score Report CDO Deal Summary Performance as of August 31, 2015.

© 2016 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. AND ITS RATINGS AFFILIATES ("MIS") 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 AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS WHEN MAKING AN 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.

Moody's Investors Service, Inc., 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 Moody's Investors Service, Inc. have, prior to assignment of any rating, agreed to pay to Moody's Investors Service, Inc. 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 "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms 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 investors. It would be reckless and inappropriate for retail investors to use MOODY'S credit ratings or publications when making an investment decision. If in doubt you should contact your financial or other professional adviser.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJKK or MSFJ (as applicable) for appraisal and rating services rendered by it fees ranging from JPY200,000 to approximately JPY350,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.