Previously published in the U.S. Credit Alpha
8 November 2019

Tracking Global CLO Ownership

US Credit Strategy
Alin Florea
+1 212 412 2123
alin.florea@barclays.com
BCI, US

European Credit Strategy
Geoffrey Horton, CFA
+44 (0) 20 3134 2680
geoffrey.horton@barclays.com
Barclays, UK

Previously published in European Credit Alpha, November 8, 2019.

While we understand the increased scrutiny of structured products, as the CLO market grows to new highs and takes up a larger share of the loan market, along with increasing ownership of loans by CLOs (*CLOs Take More of the Demand Pie*, November 1, 2019), the recent global regulatory focus has shown us that the pool of CLO holders is not as opaque as once thought. Reports by the Fed, Bank of England, Bank of Japan, and others have shown that we can trace CLO holder exposure for a large majority of the CLO market, with this transparency only set to increase in the future.

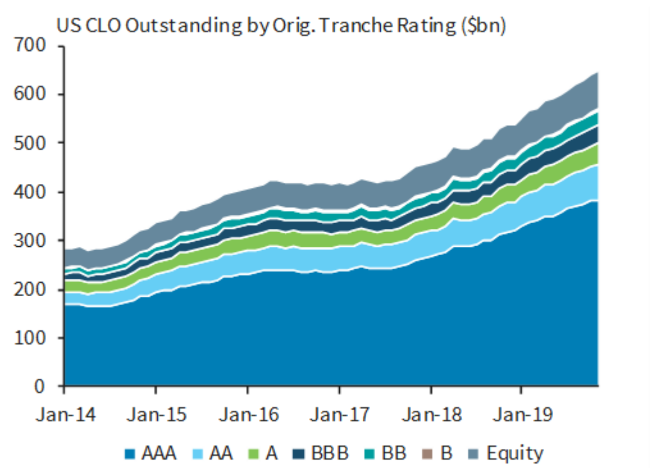
Global CLO Market Now Approximately $770bn

We estimate that the global CLO market is now approximately $770bn in size, up 19% year-to-date and 63% since the start of 2016. As the AAA tranche typically comprises most of a CLO's liability structure, the balance of AAA tranches outstanding is c.$455bn, or 59% of total CLO outstanding. Our estimates for the remainder of the liability stack include: AAs at 11%, single-As at 7%, BBBs at 6%, BBs at 5%, single-Bs at 1%, and equity at 12%.

US CLOs, at c.$650bn, are the largest portion of the global CLO market. US broadly syndicated loan (BSL) CLOs represent $593bn of the total, with the remainder from middle market (MM) CLOs (c.$55bn). The US CLO market has grown more than 17% year-to-date and 59% since YE2015 (Figure 1). While the BSL market dominates the MM segment in size, growth in MM CLOs has been strong, near 150% since YE2015, increasing share from 5.4% to 8.4%.

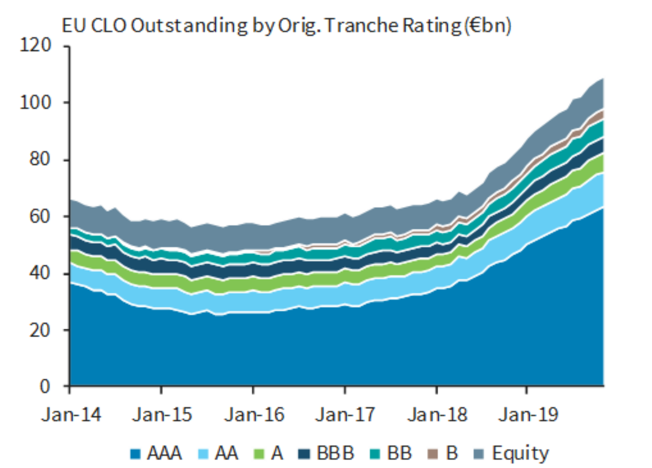
The European CLO market is much smaller in comparison, at €109bn, or roughly $120bn. While smaller, the European CLO market has grown more quickly than the US market this year, at 25% year-to-date and 88% since the start of 2016 (Figure 2). Unlike the US, though, the European CLO market did not begin to grow materially until later in 2016, when post-crisis issuance began to outpace pre-crisis deal paydowns.

FIGURE 1
The US CLO Market Has Grown More Than 17% This Year



Source: Kanerai, Intex, Barclays Research

FIGURE 2
The European CLO Market Has Grown More, at 25% Year-to-Date



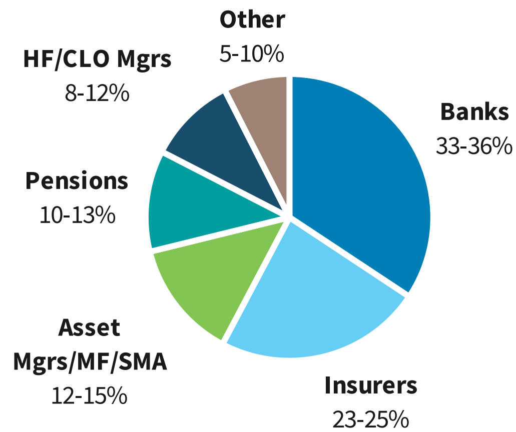
Source: Kanerai, Intex, Barclays Research

Holders of CLO Tranches Continue to Emerge

Despite the increased transparency of the global CLO holder base, it is still difficult to pinpoint exact CLO tranche exposure. Therefore, similar to our analysis for the rest of US securitized products in *Duration in Demand*, November 1, 2019, we provide rough estimates for global CLO ownership based on a variety of recent regulatory reports, industry publications, and filings (Figure 3).

FIGURE 3

Global CLO Tranche Ownership Estimated Breakdown



Source: BOE, BOJ, FED, FDIC, Lipper, HFR, NAIC, Fitch, Bloomberg, company financials, Barclays Research

Banks (33-36%): Banks across the globe continue to be the largest holders of CLO tranches, with a vast majority of their holdings concentrated in AAA tranches.

We estimate that Japanese, US, and European banks hold 32-34% of global CLOs outstanding, with another 1-2% possibly held by banking intuitions outside these regions. In combination, we estimate that banking institutions make up nearly 60% of the global CLO AAA market.

- **Japanese banks**: Despite the decline in Japanese bank participation in the global CLO market this year, we estimate that Japanese banks still hold roughly 15% of the global CLO tranches outstanding. Even after the Japanese Financial Services Agency's implementation of a risk retention solution (where investors, for example, have to prove the underlying assets were properly originated), we believe Japanese banks will continue to be a major investor in the asset class, albeit buying at a slower pace, as the opportunity set of higher yielding, highly rated global assets declines.

- **US banks**: We estimate that US-domiciled banks hold just under $100bn in CLO tranches, or roughly 12-13% of the global CLO market and 15-18% of the US CLO market. Although total US bank holdings have increased slightly y/y, they have not kept pace with the growth in the outstanding CLO market, leading to a slight decrease in US CLO market share terms relative to last year (-1 percentage point).

- **European banks**: We estimate that European banks hold roughly 5% of global CLO tranches, weighted primarily to European CLOs. We think that European banks have increased their purchasing this year, replacing some of the reduced buying from Japanese banks, as AAA CLO tranches remain attractive compared with other credit and structured products, even on a risk-weighted basis, as discussed in *European CLO AAA Relative Value Update*, October 18, 2019.

Insurers (23-25%): US and European insurance companies are the second largest buyer-type of CLO tranches. We estimate that another 1-2% is held by other regional insurers. For example, Bloomberg recently reported that Korean insurers hold just under $3bn in estimated CLO exposure.

- **US insurers**: Most of the global insurer exposure to CLOs is weighted to US insurers, specifically life insurers, holding roughly 17-18% of the global CLO market and 19-21% of the US CLO market. We estimate that US insurers have increased their market share of US CLOs by 5 percentage points y/y based on the NAIC's most recent Schedule D filings.

  We believe this was largely driven by the prevalence of CLO combo notes, where insurers are major investors, as well as the old NAIC rules that allowed notching of NAIC designations based on purchase price (see *Where Breakpoints Break Down*, March 29, 2019). Given that the rules went into effect in March 2019, before the effective date of the new rules that no longer allow a more favorable treatment for bonds purchased below par, we think the rate of future purchases could slow.

  Nonetheless, this slowdown could be offset in part by the continued prevalence of combo notes, which may continue to be issued given the NAIC 2 designation they currently receive, despite packaging equity exposure that would otherwise be mapped to a NAIC 6 designation. The ability to use external ratings for CLO combo notes could change soon, though, as the Securities Valuation Office is reconsidering its methodology for NAIC designations of principal protected notes. A move away from using rating agency ratings to using a look-through approach to create a new NAIC designation may change the attractive relative value perspective of CLO combo notes for US insurers.

  CLO tranche rating exposure for US insurers differs, but is concentrated primarily in investment grade-rated tranches (AAA through single-A). As of the end of 2018, the NAIC noted that US insurer exposure to AAA CLO tranches was 43%, with 81% exposure to BBB or higher rated tranches. There was some equity exposure as well, though we believe it to be held in combo notes.

- **European insurers**: In contrast to US insurers, European insurers incur higher capital charges holding for CLO tranches under the Solvency II regime. As a result, European insurer exposure to the global CLO market is lower at approximately 4%, but is still meaningful in terms of the European CLO market. Similar to US insurers, though, most of the underlying CLO tranche rating exposure is concentrated in IG-rated tranches.

Asset managers/mutual funds/SMAs (12-15%): We estimate that asset managers, mutual funds, and separately managed accounts (SMAs), which invest across the entire CLO ratings stack, hold roughly 12-15% of the global CLO tranches outstanding.

We think that asset managers have decreased their exposure to CLOs this year given lower rates in the US, decreasing yields for CLO tranches, pressure from investor outflows as CLOs continue to underperform, and continued uncertainty about EU Securitization Regulations, which has affected EU and US managers with UCITS vehicles alike.

UCITS exposure to CLOs was approximately €36bn at the end of 2018, and AIFs likely exceed €20bn, pushing the total that is subject to the new rules well over €50bn. We believe this may decrease next year, depending on the ability of the managers to comply with the new loan-level templates and clarification on whether the rules apply to non-EU deals. Should the EUSR apply to non-EU deals, we do not necessarily anticipate a reduction in CLO demand from the end investors but, instead, a reallocation of CLOs away from UCITS and into US-domiciled vehicles, such as US-based mutual funds or SMAs.

Pension funds (10-13%): Similarly, we believe that pension funds, which tend to focus more on IG-rated tranches, have slightly pared exposure to the CLO market this year, as lower rates have made floating rates less attractive for these investors. In addition, continued negative headlines about the asset class are likely keeping structured credit allocations from increasing materially.

Hedge funds/CLO managers (8-12%): Hedge fund and CLO manager exposure to CLOs, which is primarily focused on BB, single-B, and equity tranches, is more difficult to estimate, but from conversations with market participants, we believe these investors have overall maintained exposure to the asset class this year.

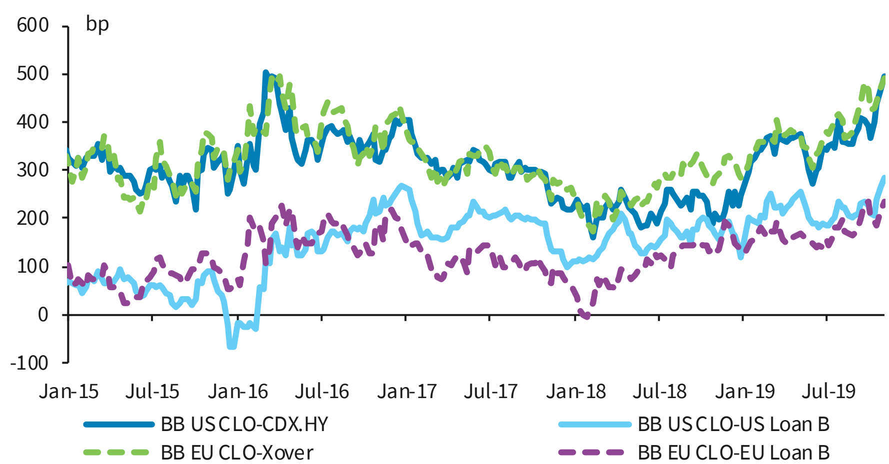
The decline in CLO mezz and equity prices this year has likely pushed returns lower for structured credit funds with CLO exposure and may have driven a slowdown or even reversal of inflows. However, funds with more locked-up capital could increase their exposure to CLOs in the near future, given the attractive value of CLO mezz and equity relative to other credit in both the US and Europe recently (Figure 4) and the growing number of positive convexity opportunities, as discussed in our *Global CLO Update*, October 31, 2019.

As the CLO equity arb has also remained challenged this year, we believe more CLO managers have raised dedicated equity retention funds, or simply retained more CLO equity on new deals relative to past years, increasing their market share of CLO equity. We expect this trend to continue.

Other/unknown (5-10%): The remaining CLO tranche holders are even more difficult to pinpoint. While some of this range could be attributed to the rough estimations reported for the other CLO holder types and may shrink in the future as regulatory agency reporting standards become even more precise, we believe some of these unknown holders may be based in regions of the world that are generally not accounted for in broader industry reports (eg, outside Japan, the US, and Europe) or do not have standardized reporting methods for CLO exposure yet.

FIGURE 4

Global CLO Mezz Continues to Widen Relative to Other Credit



Source: S&P LCD, Intex, Barclays Research. Note: CLO spreads are generic primary levels. Loan spreads 3y DM.

Analyst Certification
We, Alin Florea and Geoffrey Horton, CFA, hereby certify (1) that the views expressed in this research report accurately reflect our personal views about any or all of the subject securities or issuers referred to in this research report and (2) no part of our compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report.

Important Disclosures:
Barclays Research is produced by the Investment Bank of Barclays Bank PLC and its affiliates (collectively and each individually, "Barclays").
All authors contributing to this research report are Research Analysts unless otherwise indicated. The publication date at the top of the report reflects the local time where the report was produced and may differ from the release date provided in GMT.

Availability of Disclosures:
For current important disclosures regarding any issuers which are the subject of this research report please refer to https://publicresearch.barclays.com or alternatively send a written request to: Barclays Research Compliance, 745 Seventh Avenue, 13th Floor, New York, NY 10019 or call +1-212-526-1072.

Barclays Capital Inc. and/or one of its affiliates does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that Barclays may have a conflict of interest that could affect the objectivity of this report. Barclays Capital Inc. and/or one of its affiliates regularly trades, generally deals as principal and generally provides liquidity (as market maker or otherwise) in the debt securities that are the subject of this research report (and related derivatives thereof). Barclays trading desks may have either a long and / or short position in such securities, other financial instruments and / or derivatives, which may pose a conflict with the interests of investing customers. Where permitted and subject to appropriate information barrier restrictions, Barclays fixed income research analysts regularly interact with its trading desk personnel regarding current market conditions and prices. Barclays fixed income research analysts receive compensation based on various factors including, but not limited to, the quality of their work, the overall performance of the firm (including the profitability of the Investment Banking Department), the profitability and revenues of the Markets business and the potential interest of the firm's investing clients in research with respect to the asset class covered by the analyst. To the extent that any historical pricing information was obtained from Barclays trading desks, the firm makes no representation that it is accurate or complete. All levels, prices and spreads are historical and do not necessarily represent current market levels, prices or spreads, some or all of which may have changed since the publication of this document. Barclays Research Department produces various types of research including, but not limited to, fundamental analysis, equity-linked analysis, quantitative analysis, and trade ideas. Recommendations and trade ideas contained in one type of Barclays Research may differ from those contained in other types of Barclays Research, whether as a result of differing time horizons, methodologies, or otherwise.
In order to access Barclays Statement regarding Research Dissemination Policies and Procedures, please refer to *https://publicresearch.barcap.com/S/RD.htm*. In order to access Barclays Research Conflict Management Policy Statement, please refer to: *https://publicresearch.barcap.com/S/CM.htm*.

All pricing information is indicative only. Unless otherwise indicated, prices are sourced from Refinitiv and reflect the closing price in the relevant trading market, which may not be the last available price at the time of publication.

Types of investment recommendations produced by Barclays FICC Research:
In addition to any ratings assigned under Barclays' formal rating systems, this publication may contain investment recommendations in the form of trade ideas, thematic screens, scorecards or portfolio recommendations that have been produced by analysts in FICC Research. Any such investment recommendations produced by non-Credit Research teams shall remain open until they are subsequently amended, rebalanced or closed in a future research report. Any such investment recommendations produced by the Credit Research teams are valid at current market conditions and may not be otherwise relied upon.

Disclosure of other investment recommendations produced by Barclays FICC Research:
Barclays FICC Research may have published other investment recommendations in respect of the same securities/instruments recommended in this research report during the preceding 12 months. To view all investment recommendations published by Barclays FICC Research in the preceding 12 months please refer to *https://live.barcap.com/go/research/Recommendations*.

Legal entities involved in producing Barclays Research:
Barclays Bank PLC (Barclays, UK)
Barclays Capital Inc. (BCI, US)
Barclays Bank Ireland PLC, Frankfurt Branch (BBI, Frankfurt)
Barclays Bank Ireland PLC, Paris Branch (BBI, Paris)
Barclays Bank Ireland PLC, Milan Branch (BBI, Milan)
Barclays Securities Japan Limited (BSJL, Japan)
Barclays Bank PLC, Hong Kong branch (Barclays Bank, Hong Kong)
Barclays Capital Canada Inc. (BCCI, Canada)
Barclays Bank Mexico, S.A. (BBMX, Mexico)
Barclays Securities (India) Private Limited (BSIPL, India)
Barclays Bank PLC, India branch (Barclays Bank, India)
Barclays Bank PLC, Singapore branch (Barclays Bank, Singapore)
Barclays Bank PLC, DIFC Branch (Barclays Bank, DIFC)

Disclaimer
This publication has been produced by Barclays Research Department in the Investment Bank of Barclays Bank PLC and/or one or more of its affiliates (collectively and each individually, "Barclays"). It has been prepared for institutional investors and not for retail investors. It has been distributed by one or more Barclays affiliated legal entities listed below. It is provided to our clients for information purposes only, and Barclays makes no express or implied