



**THE SECURITISATION & STRUCTURED
FINANCE HANDBOOK
2019**

9th Edition

Choosing CLO equity

by Serhan Secmen, Batur Bicer and Ryan Brauchler, Napier Park Global Capital

SINCE THE 2008 FINANCIAL CRISIS, COLLATERALISED LOAN OBLIGATIONS (CLO) HAVE BEEN IN THE SPOTLIGHT DUE TO THEIR ROBUSTNESS TO DEFAULTS AND PRONOUNCED OUTPERFORMANCE DURING THE MARKET RECOVERY. THE DYNAMIC NATURE OF THE UNDERLYING LOAN PORTFOLIOS MANAGED BY CLO MANAGERS WAS ONE OF THE REASONS FOR THIS PERFORMANCE. THEREFORE, PICKING THE “RIGHT” MANAGERS HAS BECOME A CRUCIAL PART OF ANY INVESTMENT DECISION. FOR THE FIRST-LOSS PIECE OF THE CLO CAPITAL STRUCTURE, THE EQUITY TRANCHE, THIS IS EVEN MORE IMPORTANT DUE TO ITS DIRECT LEVERED EXPOSURE TO THE UNDERLYING LOAN PORTFOLIOS. CURRENTLY, THERE ARE ABOUT 110 MANAGERS ACTIVELY MANAGING CLOS WITH ROUGHLY US\$460BN LOANS UNDER MANAGEMENT. IN THIS ARTICLE, WE LAY OUT A FRAMEWORK TO DISSECT SOURCES OF EQUITY PERFORMANCE FOR THOSE MANAGERS. THIS ENABLES US TO IDENTIFY THE PRINCIPAL COMPONENTS THAT DRIVE PERFORMANCE. WE BELIEVE PROPERLY USING THESE COMPONENTS IS CRITICAL WHEN CHOOSING WHICH MANAGER’S EQUITY TO PURCHASE AND WHEN TO PURCHASE IT.

The remainder of the article is as follows. First, we outline our methodology for measuring equity performance. Our approach is based both on historical data and future cash flow projections derived from the managers’ past performance on key metrics. We then identify trends and outliers across managers. Second, we take a closer look at the two main components of CLO equity return: (i) weighted average spread (WAS) of the underlying loan portfolio and (ii) net asset value (NAV) of the equity tranche upon liquidation when the deal either matures or gets called. We analyse their significance to returns, their correlation with other factors as well as their stability. Third, we examine CLO arbitrage and historical loan prices and their relationship with deal performance. Our findings shed light on the challenge of timing the market. Fourth, we evaluate manager performance based on our findings in the previous sections to complete our framework for

categorising managers in the investment decision-making process. We conclude by summarising our results.

Equity performance of 2.0 CLO managers

The universe for our analysis is only actively managed post-crisis 2.0 CLOs. We saw a significant amount of changes in the CLO market after 2008 by means of documentation, deal structure, management teams, etc. Therefore, to make any kind of relevant manager evaluations for investment decisions, using only 2.0 deals is key.

Methodology

We exclude any deals with non-traditional structures (AAA-BBB tranches only, for example) in our analysis. We also remove all deals that have yet to have their first payment.

Deals that have a single-B rated tranche have higher structural leverage on the equity by construction. We treated these single-B tranches as senior equity. Integrating their cash flows with the equity normalises the deals against one another with respect to leverage.

First, we calculate the historical par gain or erosion for each deal from their first payment date to today. We omit the period from the closing date to the first payment date (i.e. the ramp up period) because that period is not repeatable in the life of the deal. We use the resulting numbers as a proxy for future expected trading gains or losses.

We then calculate each deal’s annualised expected loss by overlaying proprietary default and recovery assumptions provided by our credit analyst team. This expected loss figure is based purely on the current portfolio and does not account for any additional defaults or turnover in the portfolio.

In the next step, we run two scenarios on all the equity tranches in the universe: one with 0% annual default rate and the other with 1%. Aside from the default levels, both scenarios share the same assumptions: 20% annual

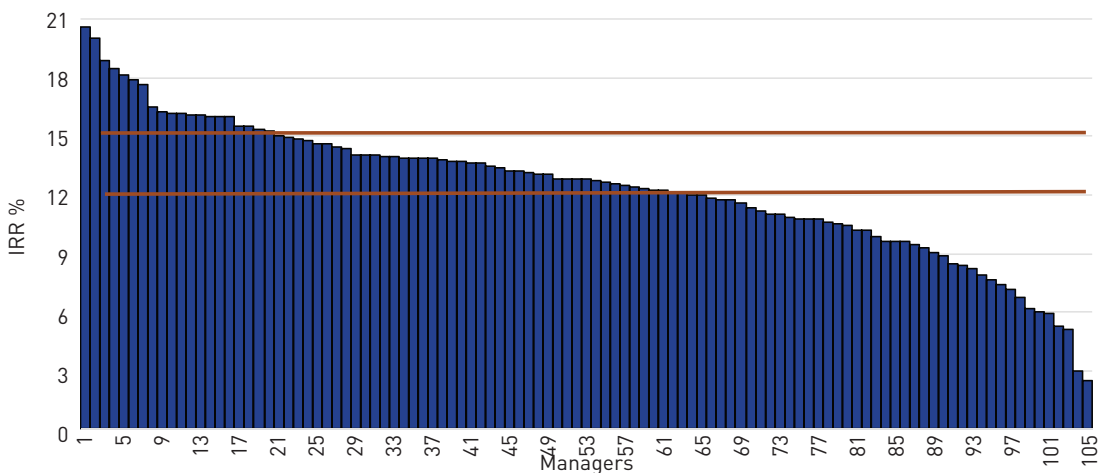
prepayment rate, 70% recovery and 12-month recovery lag on the recovered amounts. We assume all deals are called two years after the reinvestment end date with an average liquidation price of US\$99. Finally, we fine-tune our results based on our analyst team’s credit views and our own analysis of expected losses and par building. With the complete cash flow time series, we calculate inception-to-call returns for every deal.

Results

In Exhibit 1a, we sort managers based on their median performance measured by the expected inception-to-call IRR numbers calculated using our methodology. The graph shows that no manager is expected to deliver negative returns to their equity investors. However, the high dispersion of performance highlights the importance of picking the “right” managers. Given the nature of the risk associated with equity tranches, many managers failed to achieve returns that could be justified against the risk investors are taking. Although more than half of the managers can achieve an IRR of 12% or more, only 20 can deliver more than 15% return.

Spectrum of expected equity performance for CLO Managers

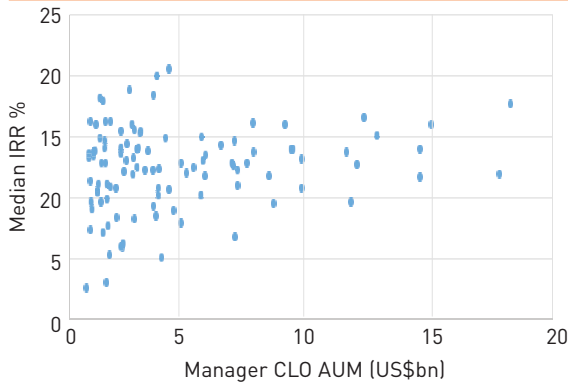
Exhibit 1a



Source: Napier Park, Intex

Equity performance vs manager size

Exhibit 1b



Source: Napier Park, Intex

Exhibit 1b shows that the size of CLO platform is not a significant driver of performance. Independent of the amount of assets under management (AUM), median manager performance is expected to be in the 10%-15% range. However, the dispersion across managers with similar AUM decreases as size increases. Factors contributing to this result include the stability of the platform and investment process, among others. We provided a more comprehensive analysis on these factors in Secmen and Bicer (2013)¹.

In Exhibit 2a, we show the deal level performance of the top 10 equity managers that we identified in Exhibit 1a. We limit our analysis to those that have at least five deals under management. The line chart shows the median IRR for each manager. The scatter plot shows the same IRR for each deal those managers manage. A few interesting observations:

- Manager 1 is the only one with greater than 20% median IRR but presents significant tail risk with a few deals significantly underperforming.
- Manager 4 has a high median IRR, but the performance of its deals is significantly barbelled. An equity investor in this manager's deals could see drastically different performance depending on the deal in which they are invested.

- Managers 9 and 10 have similar median IRRs, however, the latter delivers more stable and less dispersed performance to equity investors across their deals.

In Exhibit 2b, we show the deal level performance of the top 10 managers by AUM in CLOs. Although the majority of deals are clustered around the median performance of their managers, there are few outliers that significantly deviated from that. Even for the deals that are close to the median, the IRR spectrum of performance is still +/- 5%-7%, which is significant.

As our results suggest, it is important to focus on deal level metrics and performance to get a better understanding of any manager's performance. Manager level information, although useful, may fail to paint the full picture.

Drivers of performance

The ultimate performance of a CLO equity tranche is a function of two primary components of its future cash flows: (i) quarterly interest payments paid by the excess spread the deal generates from its underlying loan assets



Serhan Secmen

Batur Bicer

Ryan Brauchler

Serhan Secmen, Portfolio Manager

tel: +1 212 235 0729

email: serhan.secmen@napierparkglobal.com

Batur Bicer, Managing Director

tel: +1 212 235 0720

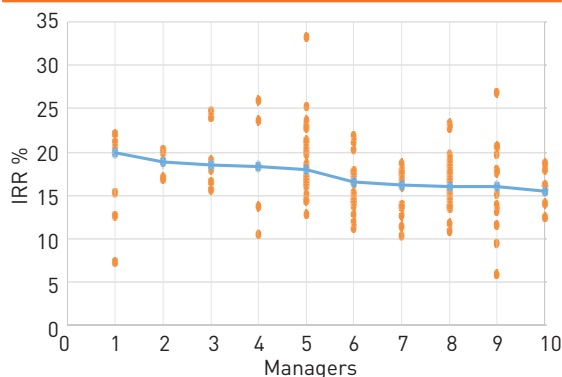
email: batur.bicer@napierparkglobal.com

Ryan Brauchler, Vice President

tel: +1 212 235 0938

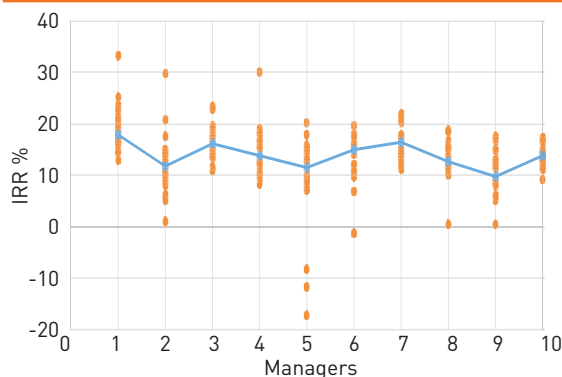
email: ryan.brauchler@napierparkglobal.com

Performance of top managers Exhibit 2a



Source: Napier Park, Intex

Performance of largest managers Exhibit 2b



Source: Napier Park, Intex

after paying various costs, expenses and debt interest and (ii) final principal payment to be received when the deal terminates, paid by the excess value left in the deal after paying principal balances of the debt tranches with the proceeds from liquidating the loan portfolio.

Interest

In Exhibit 3, we plot the relationship between underlying portfolio spreads and CLO equity returns for the deals in our universe. We use the trailing 12-month average of the weighted average spread (WAS) of each deal as a proxy for portfolio spread. We used the inception-to-date equity IRR for each deal to determine equity return. The graph shows that there is a positive correlation between portfolio spread and equity performance. However, the dispersion of performance is high for a given level of portfolio spread. Higher spread does not always lead to higher returns.

Higher spread deals usually price with wider liability spreads. Debt investors would like to get compensated for the additional risk they are taking when investing into a higher spread portfolio. Therefore, the spread pickup, which is the key component that drives excess spread to the equity, would be partially mitigated by higher liability cost. Conversely, lower spread deals might outperform due to better credit performance driven by lower principal losses upon defaults.

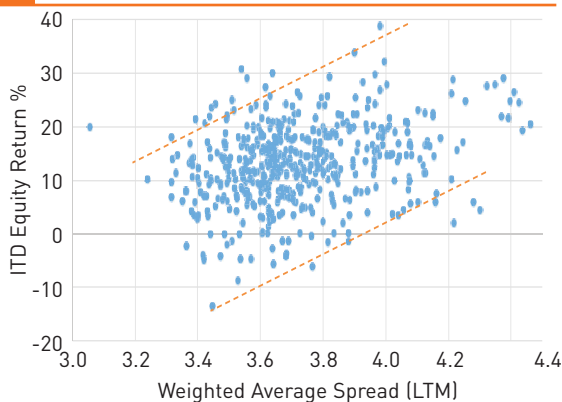
In Exhibit 4, we compare two CLO deals with different spread

characteristics. The first deal has a higher spread portfolio with a weighted average spread of 3.75% above three-month Libor, and also has a relatively high liability cost of 1.51%. The second deal offers a safer portfolio with a 3.25% spread and 1.42% liability cost. Exhibit 4 shows the IRR performance of each deal's equity tranche under different constant annual default rates assuming a 70% recovery for the defaulted loans. For a given level of default severity, the higher spread portfolio outperforms the lower spread one. However, with the implicit assumption of lower spread corresponding to safer portfolio, we might expect the second deal to realise a lower default rate. The graph shows that the breakeven default differential is roughly 1.5%. In other words, the lower spread deal would outperform if its annualised default rate was 1.5% lower than the other deal. Hence, investors should check both sides of the coin when picking the "right" deals and managers, as a higher spread does not always mean better performance.

In reality, the arbitrage, i.e. the basis between the WAS of the portfolio and weighted average cost of liabilities is not constant. The former changes constantly as managers trade the portfolio or as loan prepayments and defaults occur. The latter can be altered as well if the deal gets refinanced or reset. Therefore, investors should monitor the ongoing arbitrage rather than what it was at the deal's inception. In fact, Exhibit 5a shows that there is no correlation between

Equity performance vs portfolio spread

Exhibit 3



Source: Napier Park, Intex

deal inception arbitrage levels and equity returns. Moreover, historical data show that deals priced in wider and more volatile market environments outperformed compared to those done during tighter markets. Exhibit 5b shows the median 2.0 equity returns per quarter against Leveraged Loan Index (LLI) prices. Despite the fact that liability costs are higher during volatile periods, higher loan spreads and lower dollar price loans more than offset those costs to lead to outperformance in the long run.

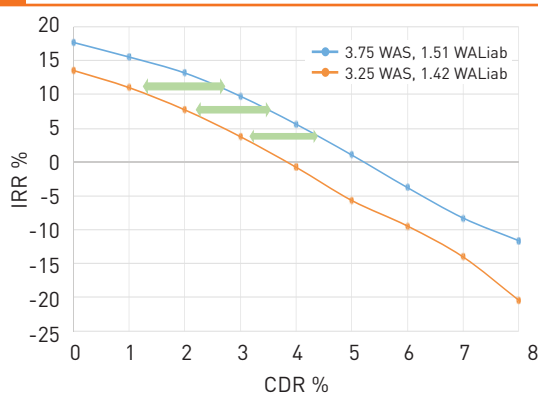
Principal

CLO deals are long-term vehicles with an average life of at least five to seven years. Managers actively trade the underlying loan portfolios, especially during the reinvestment period. Therefore, it is not easy to estimate the ultimate principal payment (called net asset value or NAV) that the equity tranche will receive upon termination. Trading gains and losses and the credit performance of the portfolio will determine the final value.

We use the period of high volatility that we experienced from late 2015 to early 2016 as a showcase for the significance of NAV on deal performance. During this period, alongside with broader markets, loans experienced significant price drops, which depressed CLO valuations. We look at the NAV of each equity tranche from 2014 vintage deals in March 2016. This

Default sensitivity of deals with different spreads

Exhibit 4



Source: Napier Park, Intex

allows us to observe the spectrum of mark-to-market NAVs of all those deals at a point in time. Assuming that these deals' NAVs were similar to one another at the time of issuance, we can see the impact of market disruption on equity valuations. In Exhibit 6, we show that there were managers who were able to preserve value while some others substantially eroded. These figures are mark-to-market and therefore important to establish a view on the stability of the platform. Many deals recovered their NAV values once the loan market bounced back starting in the second quarter of 2016. However, some could not go to pre-selloff NAV levels due to crystallised losses from defaults and/or trading losses. In general, we see that managers who maintained higher NAV during the depths of the oil and gas crisis ended up with higher NAVs in mid-2017 after the market recovered.

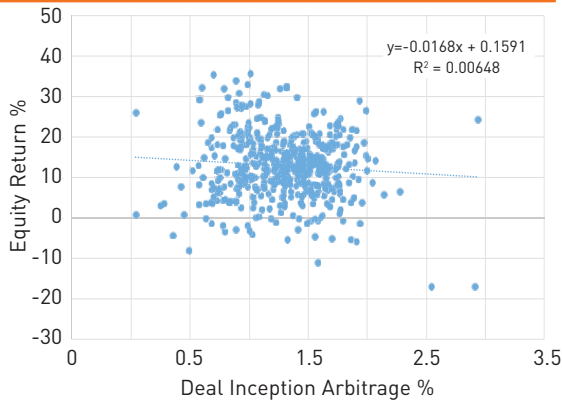
Evaluating performance

Maximising sharpe ratio

Using the NAV valuations in March 2016 as a proxy for stability of performance and plotting them against the yield-to-call IRR figures for each manager, we categorise all managers into various quadrants in Exhibit 7. The data show that there are some managers delivering high returns

Equity performance vs inception arbitrage

Exhibit 5a

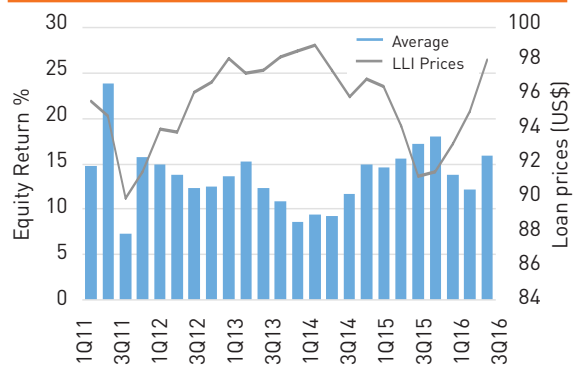


Source: Napier Park, Intex

to their investors with the tradeoff of running a volatile portfolio. Others are more conservative and are expected to generate relatively lower returns but offer a more stable profile. Managers with high median NAVs and IRRs have been the outperformers. On the other hand, many managers performed poorly on both.

Average equity returns by vintage quarter

Exhibit 5b



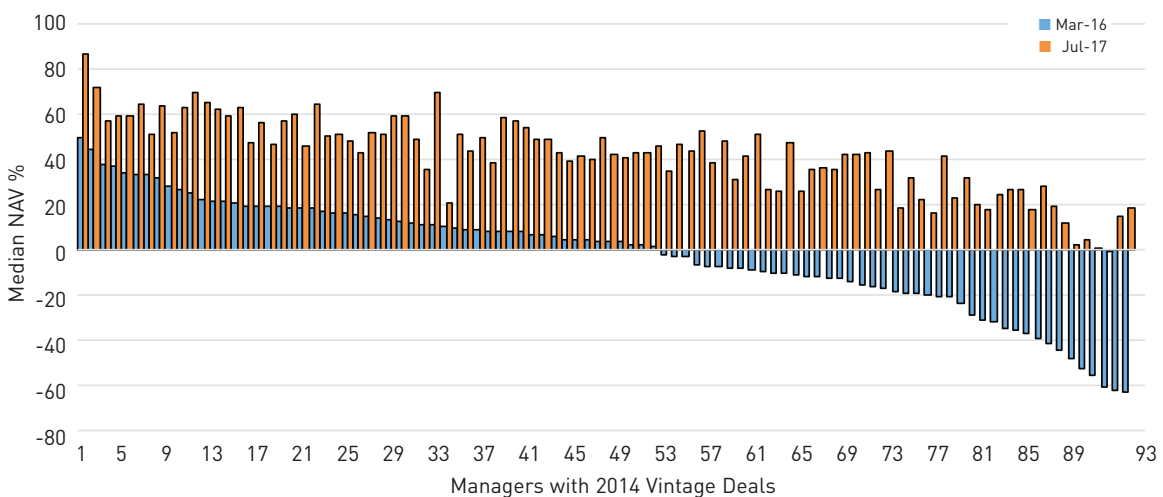
Source: Napier Park, Intex

Significance of WAS migration

As we pointed out multiple times throughout this article, CLOs are dynamic portfolios and managers actively trade collateral based on both their micro and macro environment views. Therefore, it is important to monitor the historical trends and changes in the deals to identify

Equity NAVs during volatile markets

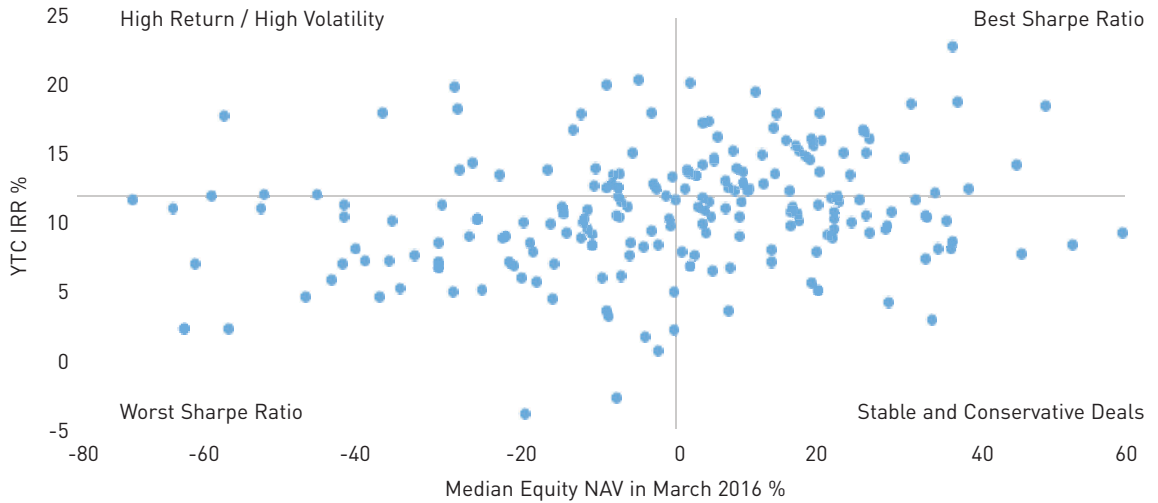
Exhibit 6



Source: Napier Park, Intex

Scorecard for CLO equity

Exhibit 7



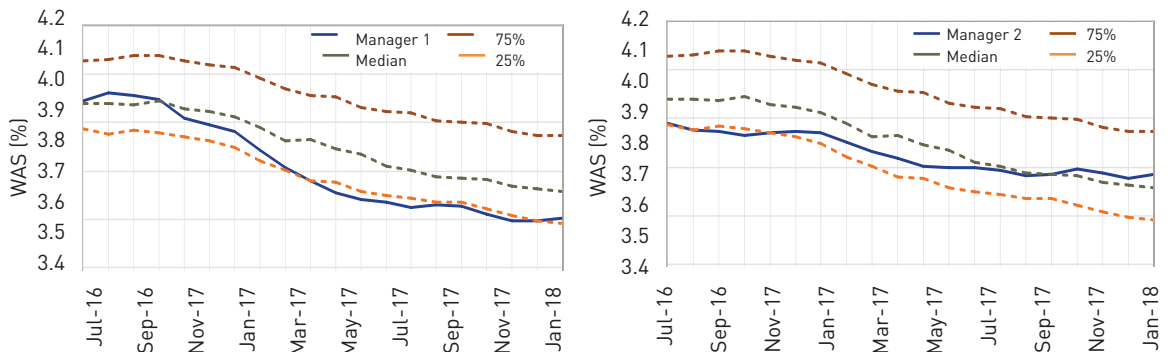
Source: Napier Park, Intex

fundamental shifts in the managers' investment thesis. In Exhibit 8, we show the WAS migration for two different managers since July 2016. The loan market has been in risk-on mode since then with significant tightening across the board. This rally reflected in the CLO portfolio spreads

where median WAS tightened to almost 3.5% currently from roughly 3.9% in July 2016. We depict two different manager approaches during this period. Manager 1, which had a median spread portfolio, chose to be conservative and migrated to a tighter portfolio. On the other hand,

Migration of WAS for two different manager profiles

Exhibit 8



Source: Napier Park, Intex

Manager 2, which was already at the tighter end of the spread spectrum in July 2016, chose to pick up spread, relatively speaking. We believe it is important to understand the motives and thought process behind these kinds of regime shifts to be able to make the “right” call on any manager.

Par building (or avoiding its erosion)

The key to preserve and increase NAV is simple: avoid defaults and limit principal losses. However, especially during benign market periods, mitigating default risk is not enough to differentiate performance. Managers need to build par, or at least avoid its erosion, during low-default periods of the credit cycle. This can be achieved through active trading or portfolio management. While managing the portfolio, two things are important: (i) being able to build par under different spread/volatility regimes and (ii) limiting deterioration of the portfolio quality.

In Exhibit 9a, we show the par building performance of CLO managers in the last 12 months versus the same metric for the period from the first payment date to 12 months ago. The graph categorises managers by their success in par building in these two periods. Managers who achieved greater than the median results in both periods are outperformers. We find

the future performance of those managers more predictable than others. For the ones who underperformed during both periods or only in one, investors need to investigate more to identify the reasons behind those results.

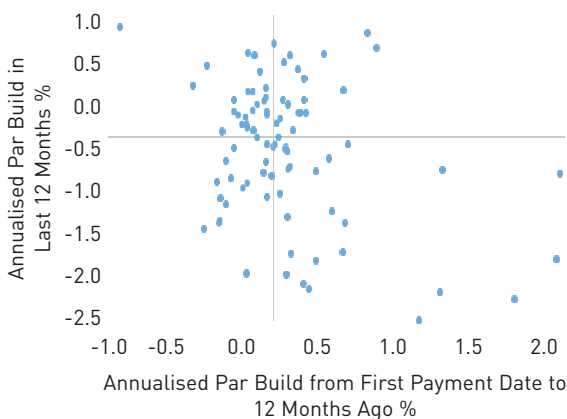
In Exhibit 9b, we show the par building performance of each manager since the first payment date of their deals versus the change in weighted average rating factor (WARF) during the same time. The latter is broadly accepted as a risk measure to gauge the credit quality of a portfolio. We see that many managers built par at the expense of portfolio quality. There are few who eroded par but in return converged towards a safer portfolio. The interesting ones are those who ended up losing par but also deteriorated their portfolio quality. This last group needs to be studied more closely to identify the reason for this underperformance.

Conclusion

CLO deals are actively managed loan portfolios. The equity tranche is the first-loss tranche of the capital stack and has levered exposure to loan spreads as well as direct exposure to defaults. Therefore, investors should be vigilant when they analyse managers and their deals to find the “right” one. The amount and volatility of future expected cash

Repeatability of par build

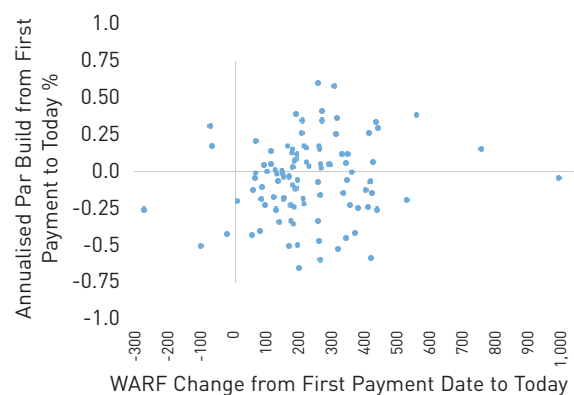
Exhibit 9a



Source: Napier Park, Intex

Par building vs portfolio quality

Exhibit 9b



Source: Napier Park, Intex

flows, mark-to-market volatility of the tranche, target IRRs, etc, should all play an important role in the investment decision. In this article, we identified some principal components that would shed light on manager performance and aid in the manager selection process. We analysed these components and presented the key factors which drive them. There is no one-size-fits-all concept when analysing CLO equity, but we believe it is important to have a framework to avoid false conclusions based on either incorrect analysis or too much noise in the data.

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Notes:

1. Secmen, S. and B. Bicer (2013). How to Value CLO Managers: Tell Me Who Your Manager Is, I'll Tell You How Your CLO Will Do. The Journal of Structured Finance October 2013, 19 (3) 49-56.

Contact us:

Napier Park Global Capital

280 Park Avenue, 3rd Floor

New York, NY 10017, US

tel: +1 212 235 0700

web: www.napierparkglobal.com