Determinants of returns on collateralised loan obligations

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Structured credits fell into disrepute during the financial crisis, often without justification. The poor image of subprime mortgages, which are a small subset of structured credits, distorted people’s view of the fundamental idea behind a structured credit and its economic benefits.

This study examines collateralised loan obligations (CLOs), which are structured credits backed by corporate loans, and offers an explanation as to why they have a high mark-up over classic corporate bonds.
Contents

1 Motivation and research question 4

2 Basic information – the idea of a structured credit and the market 5

3 Examination of the European CLO premium 6

4 Is default risk the reason for the CLO premium? 7

5 How costs specific to structured credits influence the CLO premium 9

6 Significance of the findings for investment in CLOs 13

7 Conclusion and outlook 14
1 Motivation and research question

Structured credits have been providing the link between the capital markets and credit markets since the 1980s, but they fell into disrepute during the financial crisis. This was often without justification, because the long-term default rates on most of them are low. The poor image of subprime mortgages, which are a small subset of structured credits, distorted people’s view of the fundamental idea behind a structured credit and its economic benefits.

Modern economies are dependent on the credit cycle. Without a functioning cycle driven by the supply of capital and demand for capital, investments in expensive goods or services are often not made. This restricts economic growth and prosperity. But credit can only have a positive impact on prosperity if it can be used effectively and safely. Structured credits play an important role in this regard due to the configuration of the credit risk and the way that it is split.

In this context, collateralised loan obligations (CLOs) — structured credits backed by corporate loans — deserve special mention. They are ostensibly comparable with corporate bonds because they are both a form of company finance. However, CLOs trade with a high mark-up over corporate bonds. So far, the literature has not broken down this spread into its components or provided a detailed explanation for it.

The Union Investment study on which this summary is based offers an explanation for the first time. Following a brief introduction to the fundamentals of these instruments, the analysis compares the returns achieved on CLOs with those on corporate bonds as a measure of actual default costs. It then examines other factors, namely liquidity costs and the cost of equity. Finally, it discusses the significance of the findings for investment in CLOs.

The key points of the study are summarised below. Union Investment has made the full version of the study available at www.die­risikomanager.de.

It is useful to supplement the aforementioned perspectives with an analysis of the market view (mark to market). On behalf of Union Investment, researchers at Goethe University Frankfurt therefore analysed possible influences on fluctuations in the market prices of CLOs and corporate bonds. Their findings have been summarised in a separate paper.

2 Basic information – the idea of a structured credit and the market

At first glance, structured credits appear to be a niche product for specialists. However, their contribution to the smooth functioning of the capital markets should not be underestimated. Companies, banks and investors can all benefit from them.

The idea of a structured credit is as follows: A number of receivables are structured and then converted into tradable securities that are divided into tranches and placed in the capital markets. This process allows companies to sell their customer receivables, refinance themselves in the capital markets, and use the proceeds for capital expenditure. Banks use structured credits for refinancing, reduction of capital requirements, credit risk mitigation and portfolio management.

The structured credits are removed from the books of the banks that granted the loans and transferred to a special-purpose vehicle (SPV). There they form a pool that is generally available to back the structured credit. To finance the acquisition of the loans, the SPV issues bonds that, in turn, are split into tranches and rated individually.

Collateralised loan obligations

Collateralised loan obligations (CLOs) are a subset of asset-backed securities. A CLO contains a pool of 100 to 400 senior secured corporate loans. As a rule, each of these loans is between €200 million and €2 billion in size. An individual CLO contains parts of these loans, each of which has a volume of between €1 million and €10 million.

There is always transparency about the precise composition of the portfolio, the borrowers and the structured credits. This includes information about, for example, the maturity and nature of a loan, the sector and registered office of the company taking out the loan, the amount of the coupon payment, the planned repayment schedule, and the rating and recovery rate estimate of the rating agency.

The primary market for European structured credits has been expanding more or less continuously since 2010, reaching a volume of around €100 billion in 2018. In recent years, however, these new issues have been insufficient to compensate for the redemptions of outstanding structured credits. As a result, the market volume of European structured credits shrank from €2,400 billion in 2009 to €1,200 billion in 2018.

The European CLO market has a volume of €107 billion. In Germany, new issues have been exceeding redemptions again since 2016, so the market here is growing.

This analysis focuses on European CLOs. However, the findings are probably comparable with the much larger US market, which has a volume of US$ 637 billion, because of the similarities between the markets and based on the default data available from the rating agencies.
3 Examination of the European CLO premium

European CLOs have been offering a substantial spread mark-up over corporate bonds since 2001.

Before the financial crisis, the spread mark-up of BBB-rated paper averaged 110 basis points. Since 2015, the average has been 230 basis points. The premium is even greater on BB-rated paper, exceeding more than 300 basis points both before and after the financial crisis. CLO mark-ups over corporate bonds tend to increase during periods of crisis and decrease during bull phases.

The study calculates the spread between the ICE BofAML BBB Euro Corporate index (ER40), which is widely used for corporate bonds, and the mean for the primary and secondary market spread for BBB-rated CLOs. This mix reflects a typical investor portfolio.

Figure 3.1

The European CLO premium: significant spread mark-up of CLOs over corporate bonds

Sources: Bloomberg, J.P. Morgan, Union Investment.
4 Is default risk the reason for the CLO premium?

The study included an empirical investigation of whether it has actually been possible in the past to achieve the illustrative mark-ups. To this end, it answers the following question: What was the return – measured using the realised historical internal rates of return (IRRs) – on a CLO portfolio in the period March 2001 to July 2019, and what was the return on a portfolio of corporate bonds in the same rating category?

The study assumes that an investor buys the portfolio and holds it to maturity. This makes it possible to calculate how loan defaults in CLOs affect their return. The analysis universe contains a total of 295 CLO tranches that, at the time of issue, had a rating of BBB (or BBB+ or BBB–). For corporate bonds, the study uses the ICE BofAML Global Non-Sovereign index (G0BN). It looks at a total of 723 bonds that have been issued in euros since 2001 and that had a rating of BBB at the time of issue.

A distinctive feature of CLOs is that, unlike typical corporate bonds, they have a floating interest rate. Their coupon is based on the current market interest rate and is therefore variable. To enable a comparison between fixed-rate corporate bonds and floating-rate CLOs, the payments realised on corporate bonds are viewed as if the investor had entered into a parallel interest-rate swap in which the payments realised on a fixed-rate basis are swapped for floating-rate payments. By using this method, it is possible to separate out the effect of the interest rate on the return.

Default rates and default costs

BBB-rated CLOs rarely default. During the period under review, there was one single default with total loss of capital (issue in 2002) and thus a negative return and two defaults with a capital loss of less than 5 per cent. The average default costs of all the BBB-rated CLOs was therefore 0.06 per cent.

In the investment universe of the corporate bonds covered by the study, two issuers defaulted along with their eight bonds. In each case, the loss of capital was in the range of 70 to 80 per cent. The average default costs of all the BBB-rated bonds was therefore roughly 0.52 per cent.

This shows that loan defaults reduce the returns achieved on CLOs only minimally, and this was also the case during the financial crisis. It is important to remember in this context that there is a clear ranking due to the waterfall structure of CLOs. In all structures in which the BBB tranche was repaid without loss, none of the tranches in our
analysis universe that had a higher rating than the BBB paper (AAA, AA or A-rated CLO tranches) ever defaulted or suffered a loss. This was not the case for the corporate bonds in the study: The proportion of the IRRs explained by defaults was larger, above all due to the higher loss rates.

The difference between the average returns on CLOs and corporate bonds is smaller than the aforementioned spread. This is because no CLOs were issued between 2008 and 2012. However, the corporate bonds issued in this period had very high expected returns because the returns had risen sharply and the market interest rate (Euribor) was still higher than had been expected at the time.

This study examines higher-quality structured credit tranches and bonds (investment-grade segment). However, the findings can be replicated for the lower-quality non-investment-grade segment. In this segment, the impact of defaults on the difference between the expected and realised returns is less negligible than in the investment-grade segment. Nevertheless, default risk only plays a small part in returns, even in the case of BB-rated CLOs.
5 How costs specific to structured credits influence the CLO premium

Positive internal rates of return (IRRs) – particularly caused by high mark-ups and extremely low defaults – show that the CLO premium cannot be attributed to objective loss expectations. However, investing in CLOs is not a matter to be taken lightly. The structure of the paper and the trade practices in the market are far more complex than with corporate bonds.

Although CLOs offer transparency, the complexity of the structured credits has an influence on the liquidity costs. Moreover, the regulatory hurdles to investing in CLOs have risen significantly since the financial crisis, in both qualitative and quantitative terms.

- Qualitative: The regulator (EU) now sets out precisely formulated requirements for CLO investors with regard to their (trading) experience and (market) knowledge as well as for the systems in use.

- Quantitative: The structured credit market is now split between paper subject to low capital requirements and paper subject to high capital requirements. Furthermore, CLOs have to be backed by more capital than corporate bonds.

The level and influence of liquidity costs and the cost of equity for investing in CLOs and corporate bonds are therefore examined below.

Liquidity costs

Any trading of securities incurs liquidity costs. However, an analysis by Citibank focusing on the US CLO market shows that the trading frequency of CLOs, measured in relation to the outstanding volume, is relatively low. In 2018, the turnover of CLOs was 13 per cent in the investment-grade segment and around 23 per cent in the non-investment-grade segment. This is very low compared with corporate bonds, whose turnover in 2018 was 99 per cent in the investment-grade segment and 280 per cent in the non-investment-grade segment.

These considerable differences are attributable to the great complexity and the granularity of the issues, which mean that CLOs are not really suitable for frequent trading. An average holding period of three years is therefore assumed for the purposes of the following analysis. Normalised bid/offer spreads are used to calculate the liquidity costs.

This market data is available for corporate bonds. For CLOs, however, there is no freely available data nor any scientific studies. Use is therefore made of proprietary data that was produced on the basis of banks’ and brokers’ quotations.
Cost of equity for CLOs

Most CLOs are bought by banks, insurers and asset managers. To simplify matters, however, this study focuses on banks when it comes to calculating the paper’s cost of equity. The scope is still wide, even with this focus on banks: Different banks have to cater to different return requirements in their investing activities. Nevertheless, an internal return on equity requirement of 6 per cent and a holding period of three years are examined here as a starting point. The findings for other combinations of return requirements and holding periods can be found in the full version of the study.

Breaking down the spread: the influence of liquidity costs and the cost of equity

The two charts in figure 5.1 show which part of the spreads is attributable to liquidity costs and which to the cost of equity, and what is the remaining spread. Over time, the spread mark-up of BBB-rated CLOs over BBB-rated corporate bonds was usually in a range of 2 to 3 percentage points. Given the absolute
level of the CLO spreads, the liquidity costs are almost negligible. Although the cost of equity is more significant, there is still latitude for high excess returns.

Alternatively, if the return on equity requirement is 9 per cent, the return on BBB-rated corporate bonds in the study’s investment universe is insufficient to cover the cost of equity for long periods. BBB-rated CLOs are also less attractive in these conditions. However, the remaining spread after deduction of the costs examined here is still at least 0.95 percentage points. Given the high trading costs, a one-year instead of a three-year holding period is not ideal for CLOs or corporate bonds, especially with the higher cost of equity of 9 per cent. Nonetheless, CLOs again offer an excess return after deduction of costs.

CLOs have higher liquidity costs than bonds, and these costs fluctuate significantly over time. The average monthly cost fluctuates between 0.23 and 2.07 per cent. Nevertheless, there is always still a CLO premium.
The chart above depicts the spreads at specific points in time and as an average, rather than over time. It shows the CLO premium after deduction of liquidity costs and the cost of equity in July 2019 and the average for the period January 2015 to July 2019. It is also clear from this chart that the costs for CLOs are higher than for corporate bonds. However, the spread more than makes up for these costs.
6 Significance of the findings for investment in CLOs

At first sight, CLO costs appear almost prohibitively high. But this changes when the costs are compared with the spread.

During stress phases, structured credits have higher liquidity costs than corporate bonds. Outside periods of stress, however, their liquidity costs are on a par with – or in fact lower than – those of corporate bonds. It is therefore a good idea to hold onto CLOs during stress phases, and they should be traded only for unavoidable or fundamental reasons.

This correlates with the findings of the IRR analysis, in which the low default risk identified suggests that investors should hold onto structured credits during stress phases. It is better to make position changes for tactical or strategic reasons during low-stress bull phases.
7 Conclusion and outlook

For some time now, CLOs have offered a superior return to corporate bonds. It was even possible to achieve these returns during the financial crisis.

Because subprime structured credits performed poorly at that time, CLOs were tarred with the same brush. In fact, however, CLOs survived the crisis almost unscathed.

Since the financial crisis, tighter regulation and rating agencies’ greater experience have resulted in CLOs being even more conservatively structured than before. They can therefore be added to lower-risk portfolios, yet still have a higher spread over corporate bonds than in the past.

CLOs, particularly those with a BBB rating, have seen virtually no defaults in recent years. Consequently, the default risk is only a very small part of the reason why CLOs offer a superior return to corporate bonds. Although liquidity costs and capital requirements go a long way to explaining the premium, they are not the sole reason for it.

The remaining spread has to have other causes. The complexity of this structured credit instrument certainly plays a role, but the greater volatility of CLOs might also be a factor.

To examine this more closely, Goethe University Frankfurt carried out an investigation on behalf of Union Investment to analyse the influences on the returns of CLOs and corporate bonds. The findings show that the performance of CLOs, unlike that of corporate bonds, is heavily influenced by systemic risk. It is therefore possible to conclude that part of the previously unexplained high premium represents compensation for the increase in volatility during stress phases. Union Investment believes that the remaining portion of the premium is attributable to the higher costs, which arise due to the greater level of complexity.3

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