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The Rebirth of the Collateralized Loan Obligations
-A case study of the dynamics in the European Collateralized Loan Obligation
market

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ABSTRACT

Collateralized Loan Obligations (CLOs) have gone through being a main source of leveraged finance funding in the beginning of the 21st century to completely diminish in 2009. Now together with a changing market, the CLO market is on the rise in Europe. The aim of this study is to investigate the main issues in the European CLO market and how the product will evolve in the future addressing those barriers. Moreover, this study will be one of few examining the driving factors in the European CLO market. Research in this field argue that a modified European CLO model is in progress in the market with already three vehicles priced this year. This paper concludes that the trend in these pricings seems to be featured by shorter reinvestment periods and shorter non-call periods, in favour of the equity tranche investors. In addition, the demand in the European leveraged finance market shows indications of reaching a wider investor base combining a rising CLO market with refinancing through the high-yield bond market and amend-and-extend activity.

The life of the Collateralized Loan Obligation (CLO) market is young and stretches back to the beginning of the 21st century but has yet come to play a significant role in the leveraged finance market and as well, experienced a volatile life cycle (Jobst, 2002).

The need for CLOs originates from banks, prior to the economic crisis, seeking ways to avoid exposure to their balance sheet of syndication loans and rather sell those positions to institutional investors through a set-up of special purpose vehicle (SPV) (Kohler, et al., 1998).

The expansion of more actively managed arbitrage-driven securitization asset classes is argued to be one of the reasons for the economic collapse in 2008 (Sober

Look, 2012). One causes for the bubble to burst were the severe mispricing of the CLOs e.g. AAA-tranches could be priced as low as Libor +23bp which enabled the CLO to leverage as high as 15x and hence could receive inaccurately ratings. As the financial crisis commenced, the CLO sector experienced a significant downgrading in 2009 and 2010, which have eliminated any issuance since then (Deutsche Bank, 2012a). Despite the uncertainty that influenced the market, CLOs were the sole instrument to be able to retain a low default rate across its capital structure, compared to the broader spectrum of CDOs.

Post crisis, the CLO market has shown promising resurgence in the US, while the European market has, until now, suffered from low diversified supply of institutional loans (Deutsche Bank, 2012a). Despite this, in the first quarter of 2013, Europe has seen its first CLO being price. The structure of these vehicles gives indications on how the European CLO 2.0 model will look like. Research touching upon this field is well covered in the US whereas in Europe there is a gap examining this industry.

This paper will address the issues regarding how the CLO 2.0 model will evolve in the market given changing dynamics such as; regulations, ratings and the asset sourcing available. In order to investigate this, a research of the underlying factors for the current CLO market will be performed; such as covering the European leveraged finance market, the past European CLO market and the US CLO market. Two research questions will be studied.

Firstly, how will the CLO 2.0 model evolve in accordance with the issues/changes in the market? To address this I will analyse the main drivers for the structuring; regulatory changes and revised rating criteria as well as introducing the US CLO market. Subsequently, I will examine a data set of three vehicles priced in precrisis and three priced today to determine what changes are observable in the structuring of the new model. The structure of the European CLO 2.0 model is tending to have the same features as the US developed model, with shorter reinvestment period and non-call period, which is in favour of the equity investors. Also, essential for Europe is how the CLO managers deal with the regulations (Article 122a) that has been in the market since January 2011 – which have led to a broader equity concentration in the capital structure. Two

other features seen in the new model is more accurate pricing, at Euribor + 135 bps for AAA tranches, and a hybrid structure of bonds and loans.

Secondly, how are the CLO source meant to adapt to the emerging trends in the European leveraged finance market? This question is more speculative and will be answered by looking at current dynamics in the leveraged finance market such as; the near term maturity wall combined with a shrinking CLO market and European CLO market linking to the development in the European leveraged loan market. In recent years, due to the upcoming maturity wall, Europe has seen more of refinancings through the bond market and as well as Amend-and-Extend (A&E or loan modification) activity. In other words, as the CLO market is increasing from now, it will be somewhat offset, or rather substituted, with issuance in the high yield (HY) market and expectations in the private equity base.

The subsequent sections will be examined throughout the paper; in Section I a pure definition of a Collateralized Loan Obligation and its components are presented. In the first part of section II, the change in the structuring factors¹ is described and in the second part the case study of a data-set for priced vehicles is performed. In the first part of section III, research coverage of the underlying market environment for CLOs is presented. In Section IV an analysis of the research questions will be addressed. Section V presents the key findings.

I. CLO – Definition and Rationale

Definition

A Collateral Loan Obligation (CLO) is a structured finance instrument that, through a set-up of a Special Purchase Vehicle (SPV), securitizes a diversified pool of loan assets into various tranches with different risk-reward profiles. The vehicle enables equity investors to access leveraged returns on assets through non-recourse financing and simultaneously offer debt investors the possibility to access a diversified pool of credit risk in a single investment that corresponds to

¹ Regulation, ratings, US CLO model

their risk-reward appetite (Jobst, 2002). See Figure 1 for an exemplified capital structure.

Figure I
Exemplified CLO capital structure

Assets	Liabilities
Total Assets - €400m	Total Debt -€360m
<i>Asset Type</i>	<i>Tranche – Rating</i>
Leveraged Loans	Class A – AAA/Aaa
ABS	€280m
Corporate Loans	Class B – AA/Aa2
HY Bonds	€40m
Emerging Markets	Class C – A/A1
Project finance debt	€30m
	Class D – BBB/Baa3
	€10m
	Class E – Not rated
	Equity – €40m

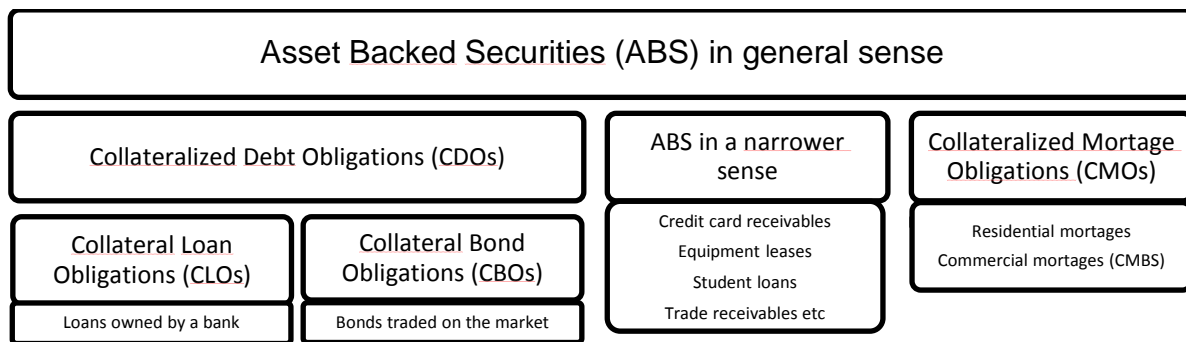
More technically, the vehicle issues asset-backed securities (liabilities) that are backed by the collateral (assets) and *tranche*d into rated and unrated (generally treated as equity) notes. The CLO sells the rated notes and simultaneously use the proceeds to purchase the portfolio from the sponsoring bank. The different classes (tranches) are associated with different interest rates and estimated weighted average lives, and different ratings, to appeal a diversified investor base (Kohler, et al., 1998). The rating of each class is determined by its position in the priority of payments. Interest and principal generated by the assets are generally paid sequentially to the classes of notes.

Distinguishing

A CLO, which in its pure form, is a debt security collateralized by commercial loans is to be distinguished to the similar transactions of Collateralized Bond Obligations (CBOs), which are in its nature collateralized by corporate bonds, and of Collateralized Mortgage Obligations (CMOs), which is secured by the underlying asset of mortgage loans (Kohler, et al., 1998). Even though those transactions are theoretically distinguished, it's more common in practice to see deals being a mix of different asset types, e.g. bonds, secured and unsecured commercial loans. CLOs and CBOs are sometimes referred to under the same umbrella more generally known as Collateralized Debt Obligations (CDOs) in

order to cover all different kind of hybrid deals. Even more general, those deals can be covered by the term Asset Backed Securities which is the nature of the transactions, see Figure II below (Jobst, 2002).

Figure II
Simple overlook of the Asset Backed Securities family



In a bank CLO, the transaction is sponsored as a cash flow deal where the repayment and ratings of the tranches are dependent on the cash flow of the underlying assets. Some CLOs are self-liquidating i.e. provides for loan payments to be passed through to investors as principal and interest payments due. Other CLOs reinvest loan payments and purchase additional loans from the sponsoring bank or other sources. Post the initial reinvestment period the CLO enters an amortization period where proceeds are used to pay down the principals of the CLO tranches, i.e. the CLO cannot reinvest further. In this study, the latter is the most relevant. In addition, a non-call period is attached to the structure i.e. the period when equity investors are not allowed to sell their position.

Rationale

By structuring a CLO deal, banks are able to sell off part of their asset portfolio *in*-directly into the capital markets, which will offer the institution to achieve financial objectives, e.g. reduction of the regulatory capital requirements, off-balance sheet accounting treatment, access to a wider investor base, and efficient funding for lending and increased liquidity (Kohler, et al., 1998).

The benefit from a market point of view is and increased diversified supply which can reach different types of demands and investors.

II. Research of structuring factors and Case study

II.I Structuring factors

In this section I will examine the two main changes current in the market; regulatory issues and rating criteria. Also, I will introduce the environment present in the US CLO market.

A. Regulation

Since the financial downturn in 2007/2008, the CLO activity has resurged in the US market whereas in Europe, the deal flow has been eliminated by the sovereign debt crisis and regulatory matters (Power, 2013).

In the structuring of a CLO transaction legal compliance is essential. This has evolved to be one of the main barriers in the post crisis for new issuance. Also, the regulatory issues are highly important in the rating considerations of a vehicle and the rating agencies generally require legal consent addressing these concerns (Kohler, et al., 1998).

In an article, recently published by *Financial News* (Power, 2013), it's the European Banking Authority's Regulation 122a who takes the blame for preventing the market activity, also called the "skin in the game" rule. The rule has its background in the "passing the package" activity fronting the credit crisis by institutions selling off leveraged loans.

The Article 122a of the EU Capital Requirements Directive requires European credit institutions, including most EU banks that invest in securitization vehicles, including US CLOs, to adhere to new requirements in order to avoid prohibitively high regulatory capital charges. For those affected, must provide that the original lenders, originators and sponsors of any CLO in which it proposes to invest will retain a material net economic interest of at least 5% in the securitized assets (Milbank, 2012).

On the other hand, a partner at one City law firm expressed the following (Power, 2013); "...The managers take only a very small amount in fees before investors get paid. Therefore many in the market believe there is already an alignment of interests and that the amount of capital needed [under the 'skin in the game' rule] is excessive."

The response by Nicholas Voisey (Power, 2013), director at Loan Market Association, was: “We have been working with regulators on how to achieve some flexibility around the implementation of the rules so that the underlying aims of the retention requirements can be met. We are working towards achieving a solution, highlighting the important role managed CLOs play in providing credit to the sub-investment grade part of the market.”

Jeremy Ghose, chief executive and managing partner of 3i Debt Management², concluded the article by stating: “We will see the reopening of the CLO market this year, [although] it is difficult to say how deep, or how quickly it will develop.”

As the market has seen three vehicles priced in 2013 with legal compliance, this issue seem to be manageable and may not be a barrier in the upcoming future.

B. Ratings

The rating agencies role in this market is essential when structuring a CLO, as the primary nature of the CLO is to convert unrated commercial loans into highly rated debt securities to attract institutional investors (Kohler, et al., 1998).

The procedure is for the agencies to evaluate the proposed structure, assess the expected default and loss performance of the loan portfolio, review the credit standing of third-party credit enhancers, hedge providers, portfolio managers and other transaction parties, and evaluate the various legal and bankruptcy risks posed by the transaction. (Kohler, et al., 1998)

One of the major trends in the changing CLO environment is the rating institutions’ criteria, which has been amended significantly since 2007. Initially, the more general sector of the CDOs were giving ratings of AAA by one or more of the three rating agencies (S&P, Moody’s, Fitch) essentially marking them as “safe” investments, which have shown to be severe mispricings. The agencies have then been blamed for being responsible for \$542 billion of the nearly trillion dollars in losses suffered by financial institutions since 2007.

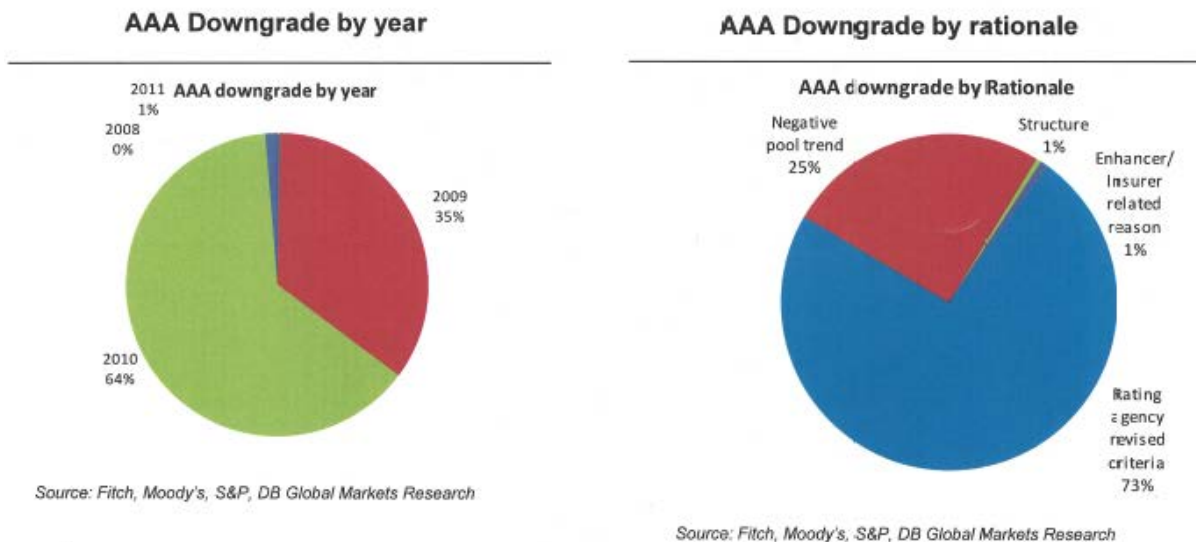
In 2009 and 2010, when the agencies had revised their CLO ratings criteria, it contributed to a wholesale sector re-rating. More specifically, 70% of the

² 3i Debt Management is interested in launching its own CLO fund

outstanding leveraged loan CLOs were downgraded during 2009 as well as 99% of all AAA downgrading appeared in 2009 and 2010 (Deutsche Bank, 2012a), see Figure III below. As CLO performance improved, 2011 witnessed many upgrades due to revised rating criteria and positive pool trends.

Figure III

AAA Downgrade by year and rationale

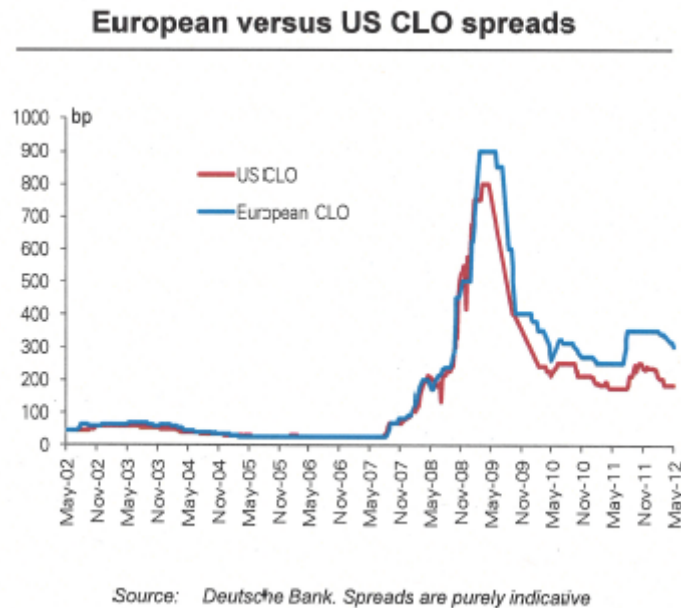


As a result of the change in rating criteria tranches are expected to be more conservatively priced, which have been seen in new issued CLOs, e.g. a AAA tranche is priced around Euribor + 150 bps. This increased pricing could also be a reflection of investors being more conservative towards the rating agencies, i.e. investors are more risk averse towards ratings which will increase the pricing.

C. US CLO market and US CLO 2.0

Compared to Europe, the US CLO activity resurged early in the post crisis mainly due to that CLO managers have been able to accumulate a diversified portfolio in order to set up a capital structure to yield enough return on equity. In addition, secondary trading level of AAA-rated US CLO paper have been generally lower than in Europe (Thomson Reuters, 2012). Looking at the graph below (Figure IV), the above is confirmed, also, it could be argued that European CLO spreads are lagging the US.

Figure IV



Priced deals in the US in the years of 2011 and 2012 have become precedence for the European CLO 2.0 model. In general, US CLO 2.0 transactions feature higher levels of subordination, tighter collateral eligibility requirements, and shorter reinvestment and non-call periods (Mondaq, 2013). The duration for reinvestment period in precrisis CLO was around seven to ten years compared to a five year reinvestment period in the 2.0 model (Milbank, 2012).

II.II Case study

This section emphasizes the main differences in a CLO structuring. For simplicity, I will present one case consisting of two deals by the same manager (one issued in 2006 and one in 2013). Two other similar cases can be found in the appendix. The analysis will take all cases into account.

A. CLO 2006/2007

In table 1, the vehicle *Dryden XIV – Euro CLO 2006* by Pramerica is presented to represent a typical deal priced in the precrisis.

The general features are a reinvestment period between 6-7 years, a non-call period of 4 years and an initial invested amount of around €400-1,000m. Also, the capital structure profile is concentrated on 65-70% of Class A Notes and equity is

kept to 7-10%. The interest spread is down at Euribor + 21bps for Class A Notes and climbs up to Euribor + 495bps on Class F³ Notes.

Table I – CLOs in precrisis

Term Sheet Dryden XIV – Euro CLO 2006

Tranche	Ratings Initial	Structure %	Interest rate	Transaction profile	
Class A Notes	Aaa/AAA	65%	E + 0.23%	Amount	€463m
Class B Notes	Aa2/AA	8%	E + 0.40%	Closing date	Aug 2006
Class C Notes	A2/A	7%	E + 0.70%	Reinvestment period	Sep 2012
Class D Notes	Baa2/BBB	4%	E + 1.50%	Non-call period	Sep 2010
Class E Notes	Ba3/BB-	6%	E + 4.10%	Manager	Pramerica
Subordinated Notes	NR ⁴	10%	Excess interest	Arranger	Bear Stearns/ ABN Amro

B. CLO 2013

To date, there have been three vehicles priced in the market of a total volume of €934m. In table 2, the *Dryden XXVII Euro CLO 2013* term sheet is demonstrated. The nature of post crisis-transactions is a reinvestment period of 3 years, a non-call period of 2 years and an initial invested amount of around €300m.

The structure profile differs considerably among the postcrisis transactions. Class A Notes represents a range from 54-60% and equity concentration is around 13-20%. The interest spread is at Euribor + 130bps for AAA tranches and climbs up to Euribor + 600bps on B tranches.

All three transactions includes an optional repricing, which allows the manager the option to reduce interest on the notes post the non-call period, thus providing a hedge towards future spread/yield compression in the collateral pool.

Since the European leveraged loan market is still sore and cannot provide sufficient diversified portfolio for collateral, Pramerica has chosen to enter the bond market and include fixed-rate liabilities which address the initial issue to match fixed-rate assets with floating-rate liabilities.

³ B-tranches

⁴ Not rated

To be in compliance with the regulation of the Article 122a, Pramerica and Cairn⁵ have chosen different approaches. On one hand, Pramerica has addressed the directive by retaining a 5% vertical slice of the capital structure. On the other hand, Cairn has used a third-party investor, such as a US pension fund, to provide the 5% requirement.

Table 2 – CLO in 2013

Term Sheet Dryden XXVII Euro CLO 2013					
Tranche	Ratings	Structure		Transaction profile	
	Initial	%	Interest rate		
Class A Notes	AAA	34%	E + 1.35%	Amount	€300m
Class B Notes	AA	7%	E + 1.90%	Closing date	May 2013
Class C Notes	A	4%	3.93%	Reinvestment period	May 2016
Class D Notes	BBB	4%	E + 4.00%	Non-call period	May 2015
Class E Notes	BB	6%	E + 4.75%	Manager	Pramerica
Class F Notes	B	-	-	Arranger	Barclays
Subordinated Notes	NR ⁶	17%	Excess interest		

III. Research of the underlying market environment

In this section, I will perform a research and analyse the macro environment underlying the CLO activity presumptions such as; the maturity wall in combination with CLOs reaching the end of their reinvestment period which will rise the demand for more source of funding, the European CLO market with linkage to the leveraged loan market. Also, I will present a short overview for the recovery in Europe.

A. Maturity wall and the end of reinvestment phase

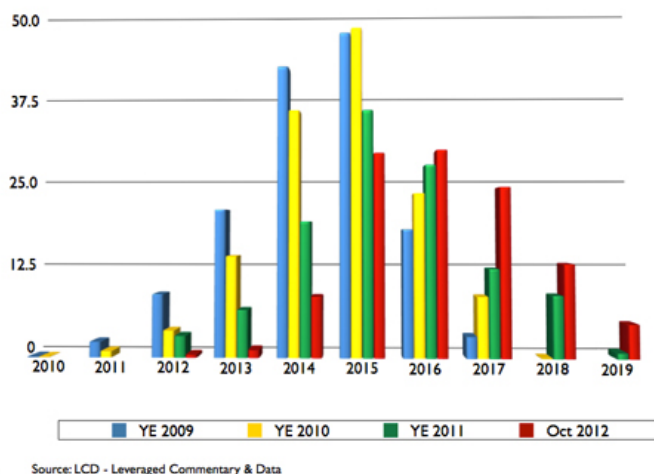
During the global financial crisis corporations were leveraging their balance sheet with short term funding arrangements in order to avoid defaults. This activity has brought the issue of developing a significant maturity wall coming up in the years between 2013-2019. In the recent years, the wall has been pushed out through the use of various sources, which is illustrated in Figure V below (Forbes, 2012).

⁵ Can be find in Appendix

⁶ Not rated

Figure V

Historical Maturity Schedule by Par Outstanding



Source: LCD - Leveraged Commentary & Data

Even though, the refinancing wall faced by the European leveraged finance market remains sizeable, of some 40% of the outstanding market expected to mature in this period (KPMG, 2011). In combination, 80% of outstanding CLO deals will see the end of their reinvestment period in 2013 (Deutsche Bank, 2012b).

Consequently, companies are looking for options to manage their upcoming refinancings, and with a historically shrinking CLO market, new sources of financing are expected to develop in the market (Deutsche Bank, 2012a).

In May 2012, European leveraged loan CLOs comprised ca. 15% of the total leveraged loan market outstanding, which makes it a significant source of market consolidation. Scheduled underlying loan maturities peak in the 2015-2016 period, although some refinancing activities are expected before maturity, i.e. the demand for functioning CLO market is increasing (Deutsche Bank, 2012b). The option is to substitute the market with CLOs passing their reinvestment criteria, loan modification (amend-and-extends) as well as other options such as changing the asset sourcing such as the high-yield (HY) bond market and/or private equity takeovers.

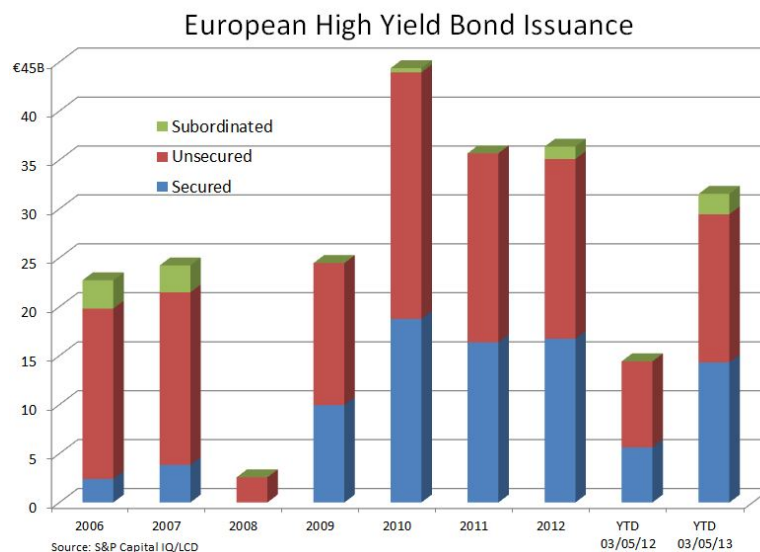
If the CLO market would not reopen, as discussed by the market in late 2012 (Deutsche Bank, 2012b), the role of CLOs will be subject to their ability to fulfil the reinvestment criteria. Those criteria are applied after the reinvestment

period and are meant to set restrictions on a CLO manager to reinvest specific proceeds from the collateral pool. More specifically, there are different criteria that apply either throughout the life of the vehicle or solely post reinvestment period. Those that apply during the life cycle are collateral quality tests, portfolio profile tests and coverage tests, where those are relatively easy to quirk. After the reinvestment period, the tests applied are much harder to amend (Deutsche Bank, 2012a).

The A&E activity has shown colour as 27 deals were in the market during H1 2012, affected the leveraged loans maturing in 2014 has reduced by €8bn to €11bn in six months solely (a fall of 41%).

Regarding the option of entering the bond market, the first five months of 2013, Europe has seen the busiest period in history for HY-bond issuance, mostly issuance in the nature of refinancing. In Figure VI below, it is shown that to date (5th of May) is more than twice than in the same period of 2012 (Forbes, 2013).

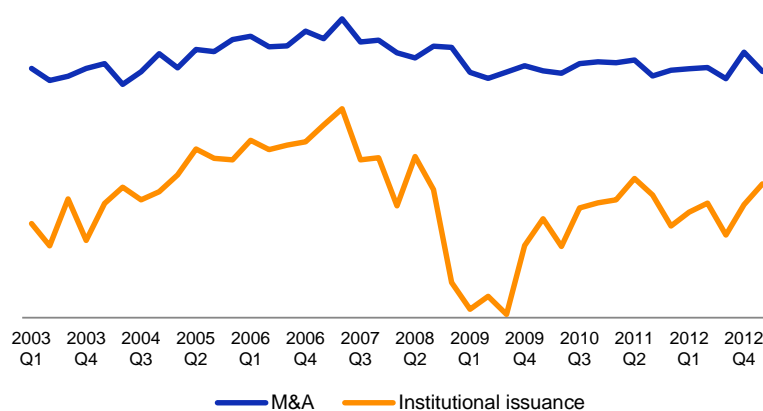
Figure VI



The question whether the private investor base will come to play in the funding is only speculation. Looking for correlation between M&A activity in Europe from 2003 to 2012, and similar for institutional issuance, it's positive at 0.7, see Figure VII below, which could give indication that those markets are correlated and it could be expected that some sort of M&A and / or LBO activity will commence in the upcoming period.

Figure VII

M&A activity vs Institutional issuance



Source: DB Global Market Research

The issue whether there will be a sufficient CLO activity (or to what extent vehicles can pass the reinvestment criteria) in Europe to cover this need for refinancings is pure speculation at this time. With a hot bond market momentum, corporations seek funding in the high-yield market – which already has been evident through 2013. Also, the A&E activity was flourishing during 2012. Adaptions like these improve the maturity profile of the leveraged loan market (Deutsche Bank, 2012b).

B. European CLO market

The European CLO market flourished in 2006 by new entrants' issuance driving the market. In the post crisis there has been no issuance and since 2007 the activity has solely consisted of legacy deals predominantly retained. Given the long-term nature of financing in CLO structures, the majority of the original European deals issued are still outstanding, but 80% of those are reaching the end of their reinvestment period in the end of 2013 (Deutsche Bank, 2012a).

In the article in *Financial News* (Power, 2013), Jeremy Ghose argues that there is a funding gap for European business due to the collapse of the CLO market, where business finds it hard to find funding since banks avoid issuing loans they cannot syndicate.

He argue: "There is a vacuum that will need to be filled not only by new CLOs but from other institutional capital. The European model is broken and we are in the middle of the storm at the moment."

In the same article, Martin Sharkey, senior associate at law firm Clifford Chance, discussed that without new investors to buy the debt, banks will be reluctant to refinance it. Sharkey said: “The real economy needs CLOs to invest in corporate debt.”

Even though, Sharkey believes the foundation is already in place for a significant revival. He said: “One thing holding back CLO activity has been the economics of deals. The underlying loans were not raising enough returns for investors. We are now seeing that gap narrow.”

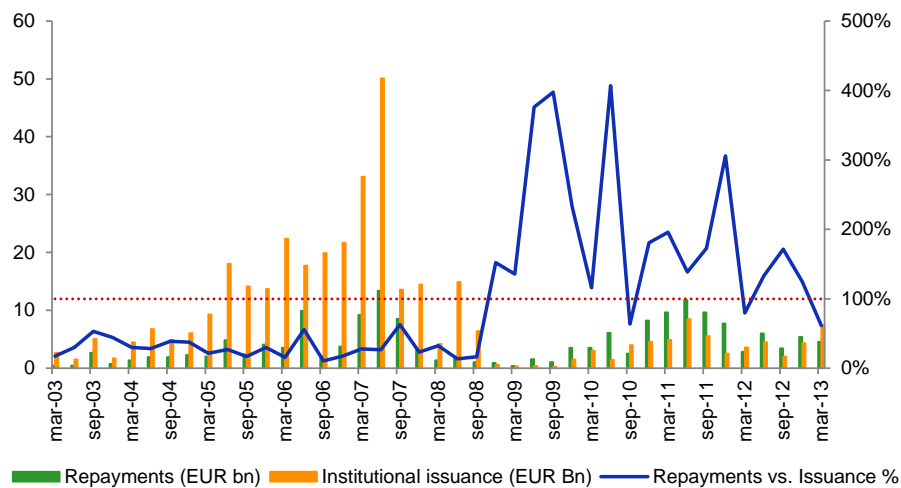
He continues: “Following the credit crunch, people began to see securitisations as toxic products so anyone investing in them demanded very high returns. With CLOs having performed well throughout the crisis, spreads have now narrowed and investors are confident in the product.” (Power, 2013)

Following a significant growing trend of CLO issuance in the US market over the latest 12 months, the activity in Europe is taking baby steps to follow the trend (Deutsche Bank, 2013). In the first quarter of 2013, we could see momentum gathering in the European CLO market with three arbitrage vehicles being priced, Cairn Capital €300m, Pramerica €300m and Apollo with €335m (Deutsche Bank, 2013). Managers enter the market carefully, insisting on changes are present, more specifically, the CLO product is adapting to new conditions in terms of asset sourcing, rating criteria, regulations etc., in order to determine a European CLO 2.0 deal.

The key issue to successfully price a new vehicle in today’s market is subject to that the market can offer sufficiently diverse loan collateral quickly, which is limited today. There is little confidence in that the European leveraged loan market will meet the required supply for having an efficiently working CLO market within the nearest future. Even though, this problem has not prevented the US market from printing CLOs (Deutsche Bank, 2013).

The supply on the leverage loan market can be tracked by the S&P European Leveraged Loan Index (‘ELLI’) which shows the repayments of leveraged loans compared with institutional issuances, see Figure VIII. Years when institutional issuance exceed repayments indicates that demand is higher than the supply and reversed is true for when issuance is below repayments.

Figure VIII
ELLI showing leverage loan repayments vs. institutional issuance (€bn)

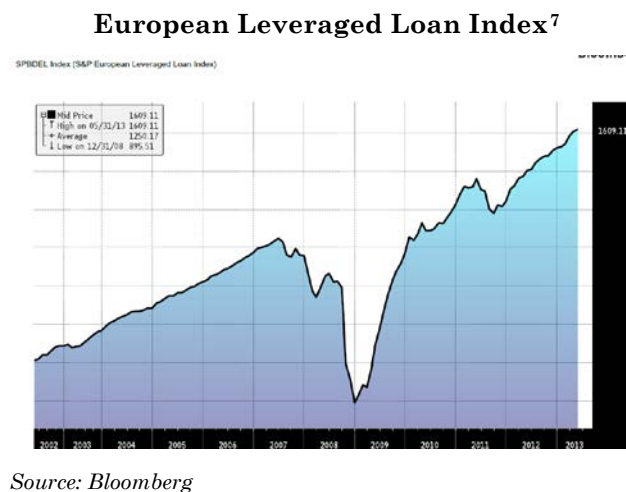
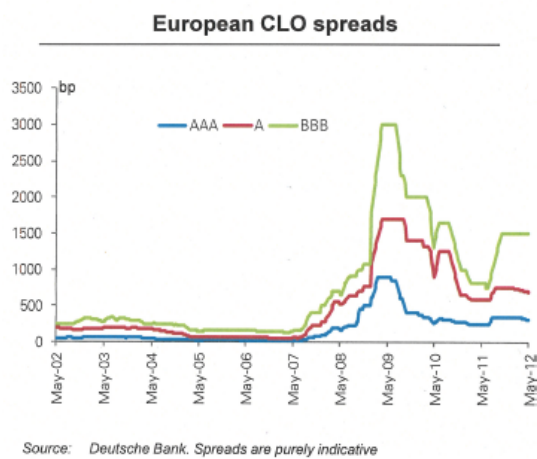


Source: DB Global Market Research

Illustrated in the graph above, since Q1 2003 to Q3 2008 the supply in the leverage loan market was driving the demand, essentially during 2006 and 2008 the CLO market bloomed as the issuances were significantly higher than repayments. In 2009 there was almost no new issuance and in the current environment where repayments have outpaced new-loan supply for 16 of 19 quarters it might be a challenging environment for the European CLO market to resurge.

Looking at the European CLO spreads for the tranches they look negatively correlated with the ELLI which makes sense, as the index decreases the spreads (risk profile) for those tranches increases. This is patterns is especially evident during the crisis years, see Figure IX below.

Figure IX



The dynamics in the current European CLO market is the shrinking outstanding amount as majority of all outstanding vehicles reaching the end of their reinvestment period. The main issue is that the market is in need of efficient funding and the CLO has historically played a significant role in the leveraged finance market previous to the crisis. To the date, the market is gathering momentum but as there is lack of diversified asset sources in the market CLOs may find it difficult to successfully pool a diversified enough portfolio.

C. Europe recovery, GDP, CPI, unemployment

In a recent study (Standard & Poor's, 2013) the base case scenario (with 66% probability) is a flat real GDP growth in 2013 in Europe with some recovery in the later part of the year. Forecasted growth remains conservative by 0.8% and 1% for the Eurozone in 2012 and 2013 respectively since April 2012.

Inflation pressures expected to remain subdued despite massive monetary stimulus, whereas the unemployment is expected to peak at record 11.8% in 2013.

In the downside case (with a probability of 33%) there is negative growth in 2013 which would be triggered by unexpected US contraction and further slowdown in China.

⁷ Bloomberg

Given the decent high probability for the base case scenario in Europe, the macro environment accompanied by the maturity wall development will create a surge for corporate funding which could be a driver for the CLO market. Even though, there are still uncertainties in market which could make investors' appetite for leverage funding averse.

IV. Comparison

A. 2007 vs 2013

Key findings in the changed CLO structure can be summarized by structure, asset sourcing and regulations; this is summarized in Table 3 below.

Firstly, by including secured and unsecured bonds in the structure it will ease the pressure on leveraged loan evolution and also justify the issue of greater fixed rate tranches across senior and mezzanine classes like Pramerica did in *Dryden XXVII Euro CLO 2013*. Combined with shorter reinvestment periods of 3 years and shorter non-call periods of 2 year, European CLO 2.0 seems to offer comfort to investors. This favourable feature for equity holder is shown by increasing equity stake in the new CLO structures, at around 20% compared to previously 10%.

In addition, the CLO structure has change to become pricier than previously, as shown in the table below, an AAA-tranche is at Euribor + 140 bps which could be compared to Euribor + 23bps before the crisis, this confirms the change in ratings criteria and a conservative pricing. Also, this reflects an increased risk aversion among investors towards the rating agencies recommendations.

Secondly, as mention, the greater proportion of high-yield bonds will substitute the leveraged loan market, as well as this market may resurge in a couple of years, it does though reduce the overall recovery rates, which could possibly affect the ratings negatively if not subordinating the bonds in order to achieve the required ratings. Shown in Table 3, this diversification matter is reflected in the amount invested in the CLO. For a precrisis CLO the size could be at €1bn, whereas today the size is around €300m, indicating that other sources of funding is available.

One reflection of this hybrid structure is the addition of fixed rate instrument on the asset side which will on one hand be a hedge to the liability fixed rate side but on the other hand the market value of equity could be exposed to risk if mismatched floating and fixed rates.

Thirdly, due to the changing regulations, European CLO transaction has to be in compliance with holding 5% risk retention, which allows for two ways of handling this issue. Both of them have been seen in the market already; Pramerica which keeps a vertical slice of its capital structure and Cairn which includes a third party investor to commit holding 5% piece of the transaction. Since this regulation came in practice in January 2011 it was not a requirement in precrisis structures.

In addition, another benefit for equity investors is the shortened non-call period which has been significantly shortened and is around 2 years for the new transactions. Also, there's an option to the subordinated note holders to reduce the margin / coupon on rated notes on a payment date after the non-call period. When rated note holders do not consent to the change, they will be replaced with new investors by being paid par (and accrue and unpaid interest).

Table 3
Simplified comparison

Feature	Typical precrisis CLO	Cairn CLO III 2013	Dryden XXVII Euro CLO 2013
Class A Notes %	~70%	60%	65%
Equity %	~10%	20%	17%
Coupon – interest rate	AAA E + 20-30bps area BBB E + 125-150bps area	AAA E + 140bps BBB E + 425bps	AAA E + 135bps BBB E + 475bps
Amount invested €m	400 – 1,000	300	300
Reinvestment period	5-6 years	3 years	3 years
Non-call period	5 years	2 years	2 years
Risk retention	NA – as rules came into being from January 2011	Equity tranche placed with US pension fund	Pramerica to retain vertical slice. If the manager changes, Pramerica may sell their holding whence the transaction would cease to be compliant

B. European CLO market and the 2.0 model

To return to the first research question investigating how the European CLO 2.0 model will evolve, I can confirm the shape of the European CLO market is still in progress and has just structured a skeleton for the upcoming market.

The feature of the European CLO 2.0 product seen in the market in 2013 have shown similar structuring as the US model in terms of favouring the equity investors with shorter reinvestment and non-call periods. Also, seen in the structure, it adapts to the dynamics in the market such as more conservative pricings due to changed ratings criteria.

Lack of available loan collateral to meet diversity and concentration requirements has translated into hybrid structure in European CLO 2.0 transactions. High-yield secured as well as unsecured bonds and loans may be increasingly allowed to a greater extent than in precrisis deals.

Finally, the risk-retention regulation (Article 122a) has been met in the new deals, either by an anchor investor for the equity tranche who will commit to holding an unhedged position until the deal is wound up, or the manager holding a vertical slice of the transaction.

C. CLO market positioning

In the second research question on how the CLO source are meant to adapt to the emerging trends in the European leveraged finance market, I have observed that corporations are seeking for other sources of financing such as through A&E-activity and HY bond market.

Even though the trend of funding diversity, managers in the market believes in an increasing CLO market in the upcoming year, which is proven to be working by at least three vehicles price to date and more is in the pipeline.

The private investor base has not shown any indication on activity in the latest year but looking at the correlation between M&A activity and institutional issuance it's positively correlated. Hence, by the CLO market kicking off this year we could may expect the private investors to follow. If this is the case, then even more sources of financing will be available in the market and hence, could be offsetting the significance of a working CLO market.

V. Conclusion and Implications

Historically, the Collateralized Loan Obligation (CLO) market has been a significant source of funding in the leveraged finance market, which diminished completely since the crisis.

To date, the lack of activity in leveraged loan market, the requirements in regulation (which also have affected the compliance for rating criteria), and absence of investors, have been key issues for the potential CLO managers. The conditions for the European CLO market to rebirth is evolving in a direction to overcome the hurdles that been preventing issuance of new vehicles since 2008. As those concerns have shown to be manageable, as evident by three priced vehicles in this year, the European CLO 2.0 product is in motion and features are alike to the US model as well as it has adapt to changed market dynamics.

As the European leveraged finance market is approaching the maturity wall, even though it is pushed further continuously, the need for an efficient CLO market could be evident since historically CLO as represent a significant market share of the market funding.

With strong momentum in the bond market and hybrid capital structures, with loans and bonds, in recent deals indicates that CLO funding could be accompanied with other funding activities, such as refinancings and potentially M&A activity if the recovery in Europe commence.

As a final word on the future development, I believe whereas the economics are in play (maturity wall) for an increased CLO market the development of substitutes (the HY Bonds etc) will put strong incentives on tackling the structure problems evident in the CLOs.

Therefore I would suggest/be interested to see further research on the following topics; is the expanding HY bond market fitted to overtake the CLO market share? How will the market consolidation evolve for leveraged finance market in Europe and what factors is pushing this development?

APPENDIX

2006

Term Sheet GSC European CDO IV 2007

Tranche	Ratings Initial	Structure %	Interest rate	Transaction profile	
Class A Notes	AAA/Aaa	68%	E + 0.21/31%	Amount	min. €400m
Class B Notes	AA/Aa2	6%	E + 0.38%	Closing date	May 2007
Class C Notes	A/A2	9%	E + 0.60%	Reinvestment period	Apr 2013
Class D Notes	BBB-/Baa3	5%	E + 1.40%	Non-call period	Apr 2011
Class E Notes	BB-/Ba3	4%	E + 3.40%	Manager	GSC Group
Subordinated Notes	NR	10%	Excess interest	Arranger	Lehman Brothers

Term Sheet Avoca CLO VII 2007

Tranche	Ratings Initial	Structure %	Interest rate	Transaction profile	
Class A Notes	AAA/AAA	69%	E + 0.21/28%	Amount	€712m
Class B Notes	Aa2/AA	7%	E + 0.37%	Closing date	May 2007
Class C Notes	A2/A	7%	4.76% / E + 0.58%	Reinvestment period	May 2014
Class D Notes	Baa2/BBB	4%	5.43% / E + 1.25%	Non-call period	May 2011
Class E Notes	Ba3/BB-	4%	7.58% / E + 3.40%	Manager	Avoca Capital
Class F Notes	B/B	2%	E + 4.95%	Arranger	Deutsche Bank
Subordinated Notes	NR	7%	Excess interest		

2013**Term Sheet Cairn III CLO 2013**

Tranche	Ratings	Structure	Transaction profile		
	Initial	%	Interest rate		
Class A Notes	AAA	60%	E + 1.40%	Amount	€300m
Class B Notes	AA	9%	E + 2.30%	Closing date	Apr 2013
Class C Notes	A	7%	E + 3.25%	Reinvestment period	Apr 2016
Class D Notes	BBB	4%	E + 4.25%	Non-call period	Apr 2015
Class E Notes	BB	-	-	Manager	Cairn Capital
Class F Notes	B	-	-	Arranger	Credit Suisse
Subordinated Notes	NR	20%	Excess interest		

Term Sheet ALME Loan Funding 2013-1 CLO

Tranche	Ratings	Structure	Transaction profile		
	Initial	%	Interest rate		
Class A Notes	AAA	58%	E + 1.30%	Amount	€334m
Class B Notes	AA	8%	E + 1.85%	Closing date	May 2013
Class C Notes	A	8%	E + 2.85%	Reinvestment period	May 2016
Class D Notes	BBB	5%	E + 3.90%	Non-call period	May 2015
Class E Notes	BB	4%	E + 4.75%	Manager	Apollo
Class F Notes	B	4%	E + 6.00%	Arranger	Citigroup
Subordinated Notes	NR	13%	Excess interest		

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