Agency problems in structured finance – a closer look at European CLOs

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Introduction

The current turmoil in the credit markets, which originated with problems involving securitisation of US sub-prime mortgages but which quickly spread to the global financial system, has called into question the desirability of securitisation and the viability of the “originate-and-distribute model” of banking. Since securitisation and the widespread use of off-balance-sheet vehicles were related to the spreading crisis, market observers quickly suspected that the securitisation process was fundamentally flawed and that there were adverse incentives for participants along the various links of the chain. For example, originators and transaction arrangers who did not retain a portion of the securitisation transaction on their balance sheets may have had less interest in screening borrowers or in monitoring the quality of the securitised loans. This suggests that although the crisis originated in the US subprime segment, imprudent behaviour may also have occurred in other segments and asset classes used in securitisation or structured finance transactions, such as leveraged loans, which experienced a boom in recent years similar to that on the subprime market.

One potential problem in leveraged loan securitisations involves the management of the special purpose vehicles that are set up to carry out securitisation and structured finance transactions. The most important type of vehicles in the leveraged loan market are Collateralised Loan Obligations (CLOs), which are a variant of Collateralized Debt Obligations (CDOs) and which invest almost exclusively in leveraged loans. The manager of a CLO purchases and manages a portfolio of around 100-200 leveraged loans and finances these purchases by issuing tranchéd securities, i.e., securities with different risk/reward profiles, against the loan pool. CLO managers make a profit by exploiting the excess spread between the interest proceeds of the loan pool and the interest to be paid on the issued securities. Because CLOs are often actively managed and the managers appear to have a considerable impact on performance (see S&P 2002b, Fitch, 2006), one concern is that these transaction managers may not have the incentive to act in the best interest of all the investors. This article analyses the potential incentive, or agency, problems facing CLO managers and the mechanisms that have been put in place to mitigate these problems. CLOs are also an interesting case to study because of the important role they have played in the private equity boom as buyers of leveraged loans. As with mortgages and other fixed income assets, the boom in leveraged loans led to very low risk premia. However, since the beginning of the current turmoil, leveraged loan issuance has virtually ground to a halt, and there has been a massive repricing of risk. One of the questions that has arisen

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(1) CDOs are vehicles that invest in a wide range of fixed income assets, such as mortgage-backed securities, asset-backed securities, corporate bonds or loans. When they are specialized in investing in a certain type of assets, they are sometimes labelled according to the asset type. Examples are Collateralised Bond Obligations (CBOs) or Asset-backed Securities CDOs (ABS CDOs).

(2) Agency problems may also face other participants in the loan securitisation process such as originators, arrangers, trustees or rating agencies. However, the agency problem facing managers in CLOs appears to be the main concern because the tasks of the other participants are relatively more standardized and more easily verifiable by the counterpart and hence less susceptible to agency problems.

(3) For example, a CLO manager must choose between going through a work-out of a troubled loan and selling it. The manager of a CDO backed by other assets does not generally face this choice.
is whether the boom was associated with excessive risk taking by market participants, and if so, which factors may have contributed to such behaviour. As CLOs were important drivers of the demand for leveraged loans, it is quite natural to ask whether the presence of these vehicles may have had an adverse effect on the market.

The article proceeds as follows. The first section examines the growth in leveraged loan markets and CLOs and the general role of the CLO manager. Section 2 identifies potential agency problems arising in the management of CLOs. Section 3 uses pre-sale reports from European CLO transactions to examine their structure and the mechanisms designed to reduce the agency problems. The last section concludes.

1. Growth of CLOs and the role of the CLO manager

Like in the US, the European leveraged loan market has grown considerably in recent years. This growth was largely fuelled by the LBO boom (Chart 1, left-hand panel). At the same time, institutional investors have gained in importance in the leveraged loan market. It is worth noting that banks’ demand for leveraged loans declined slightly from 2005 on, while institutional investors bought the extra supply (Chart 1, right-hand panel). As part of institutional demand, CLO managers are important players in the leveraged loan market. According to S&P, they accounted for 61% of institutional demand for leveraged loans in the first three quarters of 2007 (S&P, 2007).

The boom in the leveraged loan market lasted until summer 2007 and provided CLOs with very favourable market conditions. CLO managers were able to issue securities at low cost and at the same time benefited from ample supply of leveraged loans and historically low default rates. The repricing of risk since last summer has virtually halted issuance of leveraged loans and, hence, new CLO transactions. However, a large number of CLOs issued in recent years are still active in the market and have to face the changed market conditions.

Chart 2 depicts the role of CLO managers as intermediaries in the market and the main tasks that they must perform. After investors have agreed to buy tranches of a proposed structure, the CLO manager must source collateral for the initial portfolio (the ramp-up period). Once the manager has assembled the portfolio, the CLO becomes effective and enters the reinvestment period, which lasts between five and seven years. During this period, the manager must re-invest proceeds from maturing loans and loan prepayments. The manager can also trade a certain volume of loans at his own discretion. The activities undertaken during the reinvestment period have a strong bearing on the performance of a CLO. At the end of the reinvestment period, the manager is usually restricted to

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CHART 1 EUROPEAN LEVERAGED LOAN ISSUANCE
(billions of euro)

BY INVESTOR TYPE

<table>
<thead>
<tr>
<th>Year</th>
<th>LBO Financing</th>
<th>Non-LBO Financing</th>
<th>Banks</th>
<th>Institutional Investors</th>
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<td>120</td>
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</table>

Source: S&P, own calculations.
replacing impaired and prepaid loans and with loans of a higher quality and shorter maturity. Since there is little scope for increasing returns after the reinvestment period, a manager usually calls in the CLO by redeeming proceeds to investors at or shortly after the end of this period (the legal lifetime of a CLO is around fifteen years).

Given the managers’ degrees of freedom in constructing the loan portfolio and in trading loans, it is not surprising that the manager matters for the performance of a CLO. This is also evidenced by the reported fact that the identity of the manager is the most important variable for investors when deciding on an investment in a given CLO (S&P, 2002b). Credit rating agencies regularly rate CLO managers, evaluating them not only with respect to their performance, but also with respect to their overall skills in running a CLO.

2. Agency problems in CLO management

Considering the degree of discretion that CLO managers exercise, the question of their incentives naturally arises. It is well known that incentive conflicts and agency problems play an important role in the management of modern corporations and banks – but do they also apply to the case of CLO management? It is instructive to first recall the nature of agency problems in corporations and banks before discussing their role in CLO management.

2.1 The fundamentals of the agency problem

A fundamental source of agency problems in firms and banks is the separation of ownership and control. The owners of capital do not usually run the businesses they finance or the banks to which they trust their money themselves but leave it up to agents (managers) to maximise the return on their investment. This gives rise to conflicts of interest and diverging objectives between the agent and the capital owners (investors). Ultimately, the incentives of the managers and possible conflicts of interest depend on the precise nature of the (financial) contracts that govern the relationship between managers and the owners, as well as on the firm’s financial structure. The types of contracts that underlie the financial structure in modern corporations are equity and debt. Equity contracts assign residual profits to the equity holders, who are thus residual claimants, and also give them the formal control over the firm’s assets. Debt contracts specify fixed payments to the debt holders and assign only contingent control rights, which are typically triggered upon default on the fixed payments. Since managers are responsible for control in modern corporations, there is a triangular agency relationship between the manager and the two types of investors – those with residual claims (equity holders) and those with fixed claims (debt holders). As described by Jensen and Meckling (1976), both equity and debt financing generate specific agency problems. The problems associated with equity are managerial slack, while the agency problems associated with debt financing represent risk shifting (asset substitution):
Managerial slack. A manager will only have weak incentives to exert effort and to increase the value of a business if he does not fully reap the profits he generates but only receives a share of them. This problem usually occurs in the presence of equity investors, as they are residual claimants and “cash in” on (most of) the profits. For example, a manager may devote less effort to screening the risk of a loan or to monitoring loans, as the benefits of such efforts will accrue mostly to equity holders.

Risk shifting (asset substitution). Due to their different financial claims, equity holders and debt holders have a different view with respect to risk taking. This can be illustrated by considering an increase in the volatility of a business, which is equivalent to a simultaneous increase of the upside- and downside risk. Equity holders benefit from such an increase, as they cash in fully on the higher profits associated with the higher upside risk, but do not incur the additional losses from realizations of the greater downside risk when the firm’s revenues are so low that claims of debt holders cannot be met. By contrast, due to the fixed nature of their claims, debt holders do not gain from the increase in the upside risk but may recover even less due to the realizations of downside risk when the firm’s revenues do not fully cover their fixed claims. Hence, equity holders prefer strategies involving a higher degree of risk than is generally desirable. Managers, too, may benefit from the “extra” upside more than they suffer from the “extra” downside and hence might pursue excessively risky strategies. Note that the magnitude of the risk shifting problem depends on the likelihood of default. When the firm or bank is well capitalised and default remote, the risk shifting problem is of less concern, whereas it becomes more important when the likelihood of default is high.

Thus, managerial slack denotes the case where a manager fails to maximise the value of a firm or portfolio, while risk shifting denotes the case where the manager accepts an inefficiently high level of risk in his efforts to maximise the value of a firm or portfolio. Both problems may occur simultaneously.

2.2 Agency problems in CLO management

What role does risk shifting and managerial slack play in CLO management? At first sight, CLOs resemble firms in many respects: they are run by managers who act on behalf of the investors; and the investors have debt- and equity-like financial claims in the CLO. The CLO equity tranche holders are residual claimants, and they bear the first losses associated with any defaults in the underlying portfolio. The senior tranche holders enjoy priority in payments. These tranches will only suffer losses once the defaults in the underlying portfolio have become high enough to completely exhaust the value of the equity tranche. However, two idiosyncrasies of CLOs are worth discussing.

Firstly, while the senior tranche investors have similar claims as debt holders have in banks and firms (e.g., they usually have the right to vote on the course of action when the CLO experiences an “event of default”, which usually occurs after defaults in the underlying loan portfolio have reached a certain level), the characteristics of the equity tranche differ. The CLO equity tranche holders are residual claimants of the excess spread of the CLO and hence participate in the upside risk as do equity holders of a firm; however, unlike equity holders of banks/firms, they do not have the formal right to make ongoing decisions. Nevertheless, the equity tranche holders of a CLO may order the manager to sell the collateral and redeem all tranche holders (“to call in a CLO”) after a predetermined period (the “non-call period”), provided no covenant tests have been breached. The equity tranche holders may want to call in the CLO in order to lock in realised profits or to exit an expensive CLO structure (S&P, 2008).

While it is straightforward to see that bank/firm managers’ incentives are aligned with the equity holders’ interests since the former exert control as agents of the latter, it is a priori not entirely clear whose interest CLO managers should serve in normal times. As will be explained below, the remuneration scheme, possible ownership of the equity tranche and reputational concerns can all have a strong impact on managers’ incentives to serve the different investor groups.

A second factor that potentially differentiates CLOs from banks/firms is that the scope for risk shifting in CLOs may be more subject to debate. Risk-shifting incentives tend to increase in the level of leverage, as equity holders have more to gain from increasing risk when debt holders take a higher proportion of the downside risk. CLOs have a relatively high leverage (around ten), which implies that
risk-shifting incentives can be important. This makes CLOs more akin to banks than to firms. However, banks are regulated, while CLOs are only constrained by third parties such as credit rating agencies ("delegated regulation"). Assuming that delegated regulation is less effective than direct regulation, risk shifting might then play a larger role in CLOs than in banks. With respect to regulatory discipline, CLOs thus resemble firms, which are also not directly regulated. However, firms usually have limited incentives to shift risk due to low leverage, despite the fact that they have a large upside of increasing risk (e.g. investment in radical innovations which may earn high profits). For the CLO manager the upside of increasing risk (e.g. increasing excess spread) is likely to be limited due to the fixed-income nature of the collateral, but CLO managers may also use other ways to “shift risk” by e.g. diverting payments from senior tranche holders to equity tranche holders, as explained below. In the end, risk-shifting incentives seem to matter in CLO management, but their degree relative to firms is somewhat open to debate.

Overall, it can be concluded that the two broad types of agency problems, namely managerial slack and excessive risk shifting, still apply in the case of CLOs. This is because the triangular relationship between managers, investors with equity-like claims and investors with debt-like claims is still intact.

2.3 Signs of agency problems in CLOs

The dimensions in which CLO managers enjoy discretion can be broadly grouped into two categories: a) loan sourcing and trading and b) treatment of impaired loans.\(^{(1)}\) In the following, the specific strategies within each category are highlighted.

2.3.1 Loan sourcing and trading

The main activity of a CLO manager is to buy collateral. Several adverse strategies related to loan sourcing and trading may be used, the most prominent being:

- **Concentrating risk.** The CLO manager may seek to build up a portfolio with high risk concentration, such as selecting loans with high default correlation. A highly risk-concentrated portfolio either performs very well or very badly. This strategy works in favour of equity tranche holders, as they benefit fully if things turn out well but take only a portion of the portfolio losses if things go wrong (and hence to the detriment of senior tranche holders). In a diversified portfolio, by contrast, equity tranche holders still bear the same proportion of portfolio losses linked to any idiosyncratic defaults. This strategy is purely risk shifting.

- **Buying (selling) loans below (above) par.** A CLO manager may want to buy loans below par to redistribute the unused proceeds to equity holders or to pay out realised gains from selling a loan above par to equity holders rather than trapping the proceeds inside the portfolio to increase over-collateralisation for senior tranche holders. Since the ratio of the portfolio par value to liabilities outstanding is an important benchmark of portfolio quality, such a strategy might be used to extract surplus for equity tranche holders while preserving benchmark tests with respect to the portfolio par value. Such a strategy increases the credit risk of the portfolio since a price below par value reflects higher default risk. This strategy represents risk shifting, as equity tranche holders gain at the expense of senior tranche holders.

- **Buying subordinated or lower rated loans.** A CLO manager might also seek to invest in subordinated or lower rated loans to earn higher yields. A potential concern is that, while increasing the ability of the CLO manager to meet the regular interest payments on tranches, it also raises the credit risk of the portfolio. Such a strategy represents risk shifting, since the manager can realise higher returns for equity holders when economic conditions do not deteriorate.

- **“Buying the market” and insufficient credit analysis.** The CLO manager might exert little effort to screen loans and to conduct a proper credit analysis but simply buy whatever is available ("buying the market"). For instance, a CLO manager might simply rely on public information to evaluate loans instead of private information obtained through meetings with the borrower. The adverse effects of such a strategy tends to be higher in the case of loans of smaller, less intensively monitored borrowers, where the degree of uncertainty regarding creditworthiness is greater (see S&P, 2002a). This strategy is harmful for both senior tranche and equity tranche investors, as the higher risk of such inferior loans is not compensated by higher expected returns. This is managerial slack.

2.3.2 Treatment of impaired loans

CLO managers must also make decisions with respect to impaired loans. Principally, managers have different options as to how to deal with impaired loans. They may sell them in the secondary market, but they may also hold on to them and go through a workout process in the event

\(^{(1)}\) The focus here is on cash flow CLOs and not on synthetic CLOs. The former invest in leveraged loans, while the latter gain exposures to leveraged loans by investing in credit default swaps (CDS) and other synthetic instruments. The agency problems identified in cash flow CLOs do not necessarily carry over to the case of synthetic CLOs. For instance, the ramp up is not an issue in synthetic CLOs, as the manager can instantly buy (CDS) and is not restricted to loan issuances.
of default. Going through a workout, however, requires a certain set of capabilities. An issue for managers, then, is their willingness in the first place to acquire such skills. Managers may specialise in a buy-and-sell strategy, relying on a functioning secondary market for loans throughout the credit cycle or on a buy-and-hold strategy, with eventual workouts of impaired loans. Specifically, the manager faces the following two decision problems:

- **Trade-off selling vs. workout.** The decision of whether to go through a workout or to sell loans involves a trade-off for investors: selling an impaired loan reduces the par value of the portfolio and the available proceeds, but lowers the credit risk of the portfolio. By holding an impaired loan in the portfolio, the manager retains the credit risk in the portfolio, but there is a chance that the loan might improve. This trade-off might be addressed differently by equity and senior tranche investors and therefore bears potential for conflict between the investor groups and, hence, risk shifting.

- **Investment in workout capabilities.** An indirect effect arises from the initial investment decision of the CLO manager in workout capabilities. CLO managers with dedicated workout capabilities are more likely to realise the economic value of an impaired loan (even when the secondary leveraged loan market is dislocated), while CLO managers without workout capabilities would be more likely to realise an inefficiently low recovery rate on their own and, hence, would be more willing to sell an impaired loan in the secondary market even at a very low price. Consequently, a viable strategy for CLO managers might be to gamble on low default rates and to save on workout capabilities. In the event of high default rates, the manager lacks the appropriate skills and will most likely get a low price from selling an impaired loan or going through a workout himself. This strategy resembles both risk shifting and managerial slack. It represents managerial slack, as it allows the CLO manager to reduce costs. Depending on whether this strategy hurts senior tranche holders more than equity tranche holders in times of stress, it may also represent risk shifting.

### 3. Mitigating factors for agency problems in CLO Management

CLO managers are not completely free to pursue their own goals, but are subject to constraints of various types. Such constraints have emerged as reactions by market participants to possible abuses. The constraints can be broadly grouped into three categories: portfolio constraints, behavioural constraints and reputational constraints.

#### 3.1 Portfolio Constraints

Portfolio constraints limit the manager’s ability to structure the portfolio in an adverse manner and are of two types: constraints on portfolio composition and constraints on overall portfolio risk. The former determine “buckets”, or limits, for permissible asset types, while the latter define global limits on certain risk parameters of the portfolio. The main function of portfolio constraints is to limit risk shifting by managers, but they also serve as a “quality check” for managers’ trading decisions and hence also have a dampening effect on managerial slack.

##### 3.1.1 Constraints on portfolio composition

Bucket tests classify assets according to their general risk profile and put limits on their inclusion of certain assets in CLOs. Loans in general may be classified along several dimensions of risk. Most importantly, the risk profile of a loan depends on its level of subordination and the credit-worthiness of the borrower. However, there are also contractual elements which affect a loan’s risk. Examples are loans that lack certain covenants (“covenant-lite” loans), and which result in less scope for intervention by lenders once the borrower’s performance begins to deteriorate, or payment-in-kind loans (PIKs), which enable the borrower to defer payments to the lender and to effectively prolong the lending arrangement. The bucket tests of CLOs usually capture a broad range of such risks. Table 1 illustrates typical buckets relating to the subordination level of the loan. Senior loans rank highest in the level of subordination and are predominantly secured, e.g. they grant the lender access to the borrower’s assets in case of non-payment. The bucket tests set a lower limit on the share of senior loans in the portfolio, since these are the least risky loans. Second lien loans rank behind senior loans and are usually secured as well. Mezzanine loans and high yield bonds rank third and fourth in the order of seniority, respectively, and are typically unsecured. (1)

Because the recovery rate decreases in the level of subordination, these loans and bonds are riskier than senior loans. (2) For this reason, bucket tests set upper limits on the inclusion of second lien loans, mezzanine loans and high yield bonds in the CLO.

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(1) There is no single definition of second lien and mezzanine loans and the terms differ in the US and Europe. In Europe, second lien loans are usually secured, while mezzanine is unsecured debt (Fitch, 2006).

(2) The assumed recovery rates are higher for second lien than for mezzanine loans in Europe (Fitch, 2006). However, there is little reliable information on “true” recovery rates of European leveraged loans due to differences across jurisdictions within Europe and individual loan characteristics. High yield bonds exhibit the lowest recovery rate due to their lowest subordination.
CLOs differ in their specifications of buckets. Table 2 provides data on the appearance of certain buckets for riskier loans over time. The data show that CLOs have increasingly included buckets for second-lien loans and high-yield bonds, while the use of mezzanine buckets has also remained high.

Interpretation of these data is, however, not completely straightforward. To conclude that the scope for risk taking has increased since CLO managers have been given more discretion to choose from risky loan types would be premature, since CLO managers must still invest primarily in senior secured loans.\(^{(1)}\)

There remain some doubts on the effectiveness of bucket tests for two reasons. First, the proliferation of second-lien and high-yield bond buckets suggests that the bucket specifications may have responded to the evolution of loan markets and the emergence of certain loan types. Second-lien loans became very popular in the LBO boom, as they offered borrowers a cheaper means of finance than senior secured loans, and they were attractive for lenders because they were supposedly less risky than mezzanine loans. Hence, the increase in the use of second-lien buckets might simply reflect the availability of these loans in the market. There is also evidence that CLO managers were increasingly seeking to include high-yield bonds in CLOs, as they were having difficulty in sourcing enough leveraged loans to ramp up an entire portfolio. Again, this points to a potentially market driven specification of buckets.

These developments suggest that bucket tests may not be limiting the portfolio risk of CLOs; rather, they may be reflecting the emergence of riskier asset types in the market. For example, there is evidence that the aggressive and “loan-heavy” structure of private equity deals has likely shifted up the risk profile of subordinated loans, including second-lien loans, with negative consequences for the recovery rate and default probabilities of the loans. Hence, it is conceivable that the proliferation of second-lien buckets has actually provided greater leeway for managers to source risky loans.

A second reason to call into question the effectiveness of buckets for limiting risk is that buckets may not capture all types of risk. For example, there are no buckets for covenant-lite loans, since these loans qualify as senior secured loans. However, the lack of covenants reduces the scope for lender intervention when the firm’s performance deteriorates, suggesting that recovery rates following default will be lower than for loans with covenants. There is evidence that market participants may have overestimated the recovery rates of cov-lite loans and are now revising them (see, for instance, Fitch, 2008b).

### 3.1.2 Constraints on overall portfolio risk

The constraints on overall portfolio risk are likely the most important constraints on managers. Table 3 highlights the tests that are aimed at limiting the risk of the portfolio.

Coverage tests play a fundamental role in the trancheing of the securities issued by the CLO, as these tests govern the size of the “cushion” for senior tranche holders’ claims. The coverage tests are individually tailored to each CLO to take into account that CLO’s portfolio characteristics.

Over-collateralisation (O/C) tests define a lower threshold for the ratio of par value of total assets to the value of the senior tranche and thereby ensure that a portion of the portfolio can default without putting the senior tranche at risk. Interest coverage (I/C) tests require the portfolio to generate a sufficient level of interest payments to guarantee that the interest payments to senior tranche holders are protected.

\(\text{(1) The average share of senior secured loans in CLO portfolios has remained stable at around } 83\text{ p.c. over the last few years.}\)
The collateral quality tests provide thresholds on certain key measures of credit risk, including average asset maturity, spread, and rating. Finally, in order to calculate the precise risk profile of a portfolio and to justify the rating (and to calculate the coverage tests), rating agencies use methods of portfolio default analysis.

It should be noted that the effectiveness of such portfolio tests depends crucially on the reliability of estimates of the underlying risks. Rating agencies may not always be able to estimate the true risk of certain loans, which may give managers scope to increase portfolio risk if they believe that the agencies have underestimated the true risk. In particular, concerns have arisen with respect to the recovery rates of loans of different levels of subordination.

3.2 Behavioural constraints

CLO managers are also constrained in their actions through requirements to act in a certain manner or by financial incentives. More specifically, there are guidelines in place which govern the flows of proceeds to the different tranche holders. In addition, the remuneration scheme has a strong bearing on the manager’s incentives with respect to the different tranche holders. As will become clear below, the “waterfall”, which determines the priority of payments to the different tranche holders, seeks to eliminate risk shifting, while the remuneration scheme affects both risk-shifting incentives and managerial slack.

3.2.1 Constraints imposed by the waterfall

The waterfall is an important structural provision to ensure that the senior tranche holders’ claims enjoy priority over equity tranche holders’ claims. A waterfall usually follows several principles in order to ensure the desired ordering of claims.

A first set of principles centres on the separate treatment of interest and principal proceeds. Interest proceeds represent interim profits and are usually paid out regularly, which means that they cannot be used to buy additional collateral and to compensate for an eventual loss of principal. Therefore, CLOs actually have two waterfalls – one for interest proceeds and one for principal proceeds – where interest proceeds are only distributed when the principal is sufficiently protected. This also requires clear separation of interest and principal proceeds. A manager may be tempted to mask principal proceeds as interest proceeds by purchasing loans below par and redistributing the difference between par and the loan price as interest proceeds (see section 2.3.1). Hence, the CLO documentation specifies that unused proceeds should not be paid out but used to purchase additional collateral to increase the over-collateralisation of the tranches. The rating agencies impose such guidelines to clearly distinguish between interest and principal

<table>
<thead>
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<th>TABLE 3 OVERALL PORTFOLIO TESTS</th>
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<tr>
<td>Other portfolio tests are derived from this data</td>
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</table>
proceeds and to prevent harm to senior tranche holders through purchase of weaker loans.\(^{(1)}\)

A second set of principles governs the pay-down method of the tranches. With respect to principal payments, the pay-down method can be either sequential or pro-rata (or may combine both sequential and pro-rata elements). The sequential method stipulates that proceeds are paid down first to the most senior tranche holders (effective over-collateralisation increases) while the pro-rata method stipulates the simultaneous pay down of the senior and equity tranche (effective over-collateralisation remains constant). Table 4 presents a numerical example which highlights the differences of the pay-down methods.

Note that the over-collateralisation ratio also determines the default rate that a portfolio can sustain without harming the senior tranche. In this example, the sustainable default rate (given by the ratio of equity tranche/total assets) is 20 p.c. for the original portfolio and in the pro-rata pay-down scenario and 22.2 p.c. in the sequential pay-down scenario. The tranches are paid down either at the discretion of the manager (or equity tranche holders) to lock in profits at a given date (after the end of the reinvestment period) or when covenants are breached. In the pro-rata case, the value of the portfolio will be sufficiently high to satisfy the claims of the investors and hence the choice of the pay-down method is of minor importance (unless there are unexpected negative events during the period in which the tranches are redeemed). In the case of breached covenants, the situation is different. A breach of covenant tests means that the claims of the senior investors are at risk. In this case the pay-down method matters, as only the sequential pay-down method will be effective in remedying the violation of the covenants and bringing the risk to senior tranche holders back to the permitted limit. For this reason, rating agencies require all European CLOs to use the sequential pay-down method when covenants have been breached.

### 3.2.2 Constraints imposed by the remuneration scheme

The remuneration scheme determines the financial incentives for a CLO manager and therefore potentially has a strong bearing on managerial slack and risk-shifting incentives. In order to limit managerial slack, a remuneration scheme must be performance-sensitive – that is, it must reward the manager sufficiently for efforts to increase return to the investors. Risk-shifting incentives depend on the degree to which the manager’s incentives are aligned with those of the equity tranche holders. Table 5 provides an illustrative calculation of manager remuneration, using a typical compensation scheme seen in most CLOs.\(^{(2)}\)

The senior and subordinated management fees are embedded in the interest proceeds waterfall. The senior management fee ranks above interest payments on the senior tranche and therefore resembles a fixed annual fee. The subordinated management fee ranks below senior tranche payments but above equity tranche payments and is therefore linked to the performance of the senior tranche. The incentive fee is paid out at maturity (or when the CLO is called in) when the return to equity tranche holders exceeds a certain threshold. This fee is therefore linked to the performance of the equity tranche.

The performance-sensitive components (subordinated management fee and incentive fee) represent the largest part of the total fee. The incentive fee can make up a significant share of the total. It is worth noting that the CLO manager can also earn substantially higher fees when he/she achieves a return above the 12 p.c. internal rate of return (IRR) hurdle. In the example above, the manager earns incentive fees of 7.3 (16.6) million euro if he achieves 18 p.c. (24 p.c.) IRR. This represents a 41 p.c. (92 p.c.) increase in total fees compared to the benchmark of 12 p.c. IRR.

The high proportion of performance-based components (subordinated and incentive fees) should provide sufficient incentives to the managers to exert effort to maintain the quality of the portfolio, unless bad portfolio quality can go undetected for several years during which the manager receives the subordinated management fee. CLO managers are rewarded for increasing returns to equity tranche holders, but the subordinated management fee remains the largest fee component unless the CLO delivers very

| TABLE 4 COMPARISON OF PAY-DOWN METHODS ASSUMING A 10 EURO ASSET SALE (euro, unless otherwise stated) |
|-----------------------------------------------|----------------|----------------|
|                                              | Original portfolio | Sequential pay-down | Pro-rata pay-down |
| Assets                                       | 100             | 90              | 90               |
| Senior tranche                               | 80              | 70              | 72               |
| Equity tranche                               | 20              | 20              | 18               |
| Over-collateralization (percentages)          | 125 (100/80)    | 129 (90/70)     | 125 (90/72)      |

\(^{(1)}\) For instance, S&P requires the difference between par and purchase price of a loan not to be distributed but “trapped” in the portfolio to increase over-collateralisation (S&P, 2002a). Then, the incentives to buy discounted loans and loans at par are roughly equal.

\(^{(2)}\) In a recent study, S&P analysed the performance of fifty-three CLOs that were originated between 1999 and 2004 and have been called in (S&P, 2008). The internal rates of return across the whole sample had a mean of 15 p.c. and ranged from -30.4 p.c. to 41.1 p.c. However, the IRR range was only 5.51 p.c. to 35 p.c. for CLOs originated between 2000 and 2004.
high returns, in which case the incentive fee can become the largest component (24 p.c. in this example). It can thus be said that the remuneration scheme generally provides balanced incentives to the managers. In other words, it reduces managerial slack but at the same time does not appear to provide “excessive” incentives to shift risk.

Whether managers have a stake in the equity tranche of the CLO further determines their incentives. It is debatable whether managers should hold the equity tranche or whether it is sufficient to align incentives via the fee structure. Standard market practice does not require CLO managers to hold a stake in the equity tranche. S&P, for instance, argues that the (partial) ownership of equity tranches is only one of the incentive-aligning mechanisms besides the remuneration scheme and reputation (see the following section for a discussion of reputational constraints). Hence, S&P does not require the manager to hold the equity tranche (S&P, 2002c). Nevertheless, available information suggests that it is common practice for at least some CLO managers to systematically buy a portion of the equity tranche: For instance, Alcentra holds a portion of the equity of most of its CLOs, totalling USD 80 million (which amounts to less than 10 p.c. of equity tranches); Mizuho holds on average 10 p.c. of the equity of its CLOs; and Prudential M&G holds no less than 10 p.c. of the equity of its CLOs. (1) Harbourmaster invests in the equity tranche of all of its CLOs as well (Fitch, 2007a). The degree to which holding the equity tranche tilts the incentives of managers towards equity tranche holders depends on the size of the manager’s equity tranche holding relative to the other fee components of the manager’s remuneration.

3.3 Reputational Constraints

Concerns about reputation may also serve as a powerful incentive device for managers to act in the best interest of investors. Reputation matters for players who act repeatedly in the market and who are concerned about their standing with the parties they are dealing with. Assuming that managers must establish a good reputation with senior tranche and equity tranche investors, reputational constraints may be effective with respect to both risk shifting and managerial slack.

Reputation can be seen as a form of intangible capital that is costly to accumulate. Newcomers with the intent to stay in the market for a long time have an incentive to invest in reputational capital to facilitate business in the future, while established players with reputational capital have incentives to act prudently so that the reputational capital does not depreciate. It is therefore interesting to analyse the structure of the CLO manager market and to attempt to assess whether reputational concerns matter (see Chart 3).

The market data show that the boom of leveraged loan and CLO issuance, which lasted until summer 2007, has led to a heterogeneous CLO manager market. Although most of the CLO managers have a long track record and many CLOs under management, there are also a number of smaller and younger players with only one or two CLOs under management and little market experience. (2) The former have managed to establish a certain level of

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(2) It is conceivable that the market newcomers had relevant experience through recruitment of experienced staff. However, the evidence points to the fact that the staff of many of the newcomer CLO managers (such as the US managers) had very little experience in the European leveraged loan market.
that CLO managers differ with respect to their willingness and capacity to conduct workouts.\(^2\)

Second, younger managers in particular may have had incentives to take excessive risk. The reason is that they may have sought to realise high returns in order to quickly establish a favourable reputation with investors. The performance of a new manager with respect to equity tranche holders quickly becomes visible as projected or realised interim returns; however, the performance with respect to senior tranche holders is less visible, as it only represents a binary signal (whether or not there was a breach of a test) and will likely only be fully revealed in adverse market conditions. This asymmetry may have provided incentives to new managers to “gamble” and take excessive risk.

**Conclusion**

The aim of this article has been to highlight some agency problems that arise in structured finance transactions, in light of recent concerns regarding the incentives of the

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\(^1\) See Rajan (1994) for a model where reputational concerns lead banks to pursue inefficient credit policies.

\(^2\) One could argue that CLO managers could invest in workout capabilities by hiring adequate staff when necessary. However, the hiring of staff is time-consuming and costly. It is therefore questionable whether a CLO manager could react in time to a crisis or deteriorating environment.
various players throughout the chain of the originate-and-distribute model of banking. The particular focus has been on CLOs of leveraged loans, which are an interesting case in point due to their managed structures and the importance of CLOs in the recent private equity boom as willing buyers of leveraged loans.

The article has demonstrated that agency problems do matter in CLO management, and it has highlighted the different dimensions in which these problems may occur. It has also described the various constraints that have emerged in the market to limit potentially adverse manager actions. These constraints address the major issues of the agency conflict and, generally speaking, should be expected to be fairly effective. However, there are still some gaps which may allow managers to engage in certain adverse strategies.

First, the overall reliability of certain portfolio tests has not yet been fully tested in tough market conditions. Specifically, there have been concerns about the reliability of estimates of the risk associated with certain loan types and of loan bucket specifications. These tests may have allowed some scope for excessive risk taking, and the problems may only surface once defaults begin to increase significantly.

Second, reputational constraints are not waterproof: they may not have been fully effective because of the extremely favourable market conditions in the years preceding the credit turmoil of 2007/2008, and they may also not have provided managers with sufficient incentives to invest in workout capacities. Furthermore, new managers may have had incentives to push risk taking to the limits of what was formally allowed.

Ultimately, the market and events will judge whether CLOs have been structured and managed in a prudent manner. Market conditions characterised by rising default rates and below par loan prices in the secondary leveraged loan market may well provide such a litmus test for CLO managers.

This analysis of the problems facing the managers of certain special purpose vehicles represents only one step in the analysis of agency problems and conflicts of interest along the securitisation chain. Market observers are concerned that such problems and conflicts also play an important role for other participants in the chain, such as arrangers or servicers. This article has shown that the affected parties most often recognize potential conflicts of interest themselves and seek to establish measures to alleviate such conflicts. Yet, recent experience suggests that at least in some cases, the measures adopted by the market are not completely successful. A potentially fruitful avenue for assessment of other relevant agency problems and conflicts of interest along the securitisation chain would be to have each participant disclose the conflicts of interest that affect them and the measures they have taken to address these conflicts. This self assessment could be useful for improving market discipline and the functioning of securitisation markets.
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