

**Structured Finance** **Research**

## European Leveraged Loans Face Funding Hiatus As CLO Vehicles' Support Wanes

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### Table Of Contents

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CLO Vehicles Fueled Leveraged Loan Expansion In The Past Decade

Leveraged Loan Maturities Peak In 2015, Just As All Existing CLO Support Wanes

What's Restricting CLO Refinancing?

What Could Fill Leveraged Finance Refinancing Needs?

Appendix 1: Overview Of European Leveraged Loan Market

Appendix 2: Arbitrage And Demand Were The Main Growth Drivers For The European CLO Market

Appendix 3: European CLOs Have Continued Their Upswing To Kick-Start 2011

Appendix 4: Industry And Country Concentrations In European CLOs  
Related Criteria And Research

# European Leveraged Loans Face Funding Hiatus As CLO Vehicles' Support Wanes

Collateralized loan obligation (CLO) transactions have been the primary source of new funding for European leveraged loans over the past decade. But as many of these loans are set to mature in the near future, will the CLO market be around to offer support in refinancing them? The evidence suggests that it won't, so in the absence of alternative funding, many corporate borrowers are left facing a potential funding gap. Over the period 2011 to 2015, €69 billion of European CLOs by par amount will have ended their reinvestment periods, while over the same period, up to €61 billion of European leveraged loans held within CLO portfolios will need to be refinanced.

The broadening of the institutional investor market over the past decade has been the fuel behind Europe's leveraged finance growth, in Standard & Poor's Ratings Services' opinion. Among such investors, structured finance vehicles such as CLOs—which invest primarily in loans made to speculative-grade companies—have been a material source of investor funding supporting this rapid rise, providing up to 63% of overall institutional loan funding in 2007.

Consequently, the significance of the CLO investor in today's leveraged loan market has recently led market participants to focus their attention on the maturity profile of loans underlying European CLO transactions. In particular, there is growing concern as to whether CLOs will be able to support the European leveraged loan market at a time when a significant number of maturing loans will require refinancing in the near future.

The concern is a valid one, in our view. Our data suggest that in the next few years, leveraged loans underlying CLOs could face a funding shortfall as existing European CLOs start to end their reinvestment periods, causing their reinvestment rates to contract sharply. Over the course of 2015, for example, about €23.3 billion of leveraged loans held by CLOs will require refinancing—but at a time when a significant number of existing CLOs have ended their reinvestment periods, effectively limiting the ability of such vehicles from refinancing maturing loans.

To assess the extent of this potential funding shortfall, we reviewed the collateral portfolios of 205 European cash flow CLOs at the end of each year between 2008 and 2010. We observe that during these three years the weighted-average maturity profile of loans underlying European CLOs increased, indicating to some extent that leveraged loan borrowers have been refinancing their loans. Looking ahead, however, our data suggest that the vast majority of European CLO transactions are likely to fall away from the leveraged finance market at the very time the wave of maturing loans crests. And with the prospect of little-to-moderate new CLO creation and a general paucity of loan and capital market credit in Europe, this could leave many borrowers short in the coming years, possibly leading to a second spike up in leveraged loan defaults in Europe.

### **Sidebar 1: Leveraged Loan Market Faces Funding Shortfall**

- CLOs have been a material source of investor funding in European leveraged finance in recent years.
- A significant number of the underlying loans in CLO transactions are scheduled to mature in the near future, and are likely to require refinancing. (This potential shortfall would be lower to the extent that a number of CLOs are still able to reinvest unscheduled principal proceeds after their reinvestment periods have ended, as well as certain sale proceeds during the same period. Also, a limited number of CLO managers may receive consent to extend a CLO's reinvestment period.)
- We believe that the vast majority of European CLOs are likely to fall away as the number of maturing loans peaks.
- As such, there is growing concern as to whether CLOs are able to support maturing leveraged loans in the coming years.
- Our review covers 205 Standard & Poor's-rated European cash flow CLOs. Our analysis of CLO reinvestment potential is based on the reinvestment periods of CLOs (as defined by their documentation) and the scheduled amortization of the underlying loans in CLO portfolios. We do not take into account the potential for loans to prepay in whole or in part, and subsequently do not account for the possibility of future reinvestments by CLO managers. Our analysis also excludes the sale of loans during the reinvestment period by CLO managers, and any existing principal cash proceeds held by CLOs.

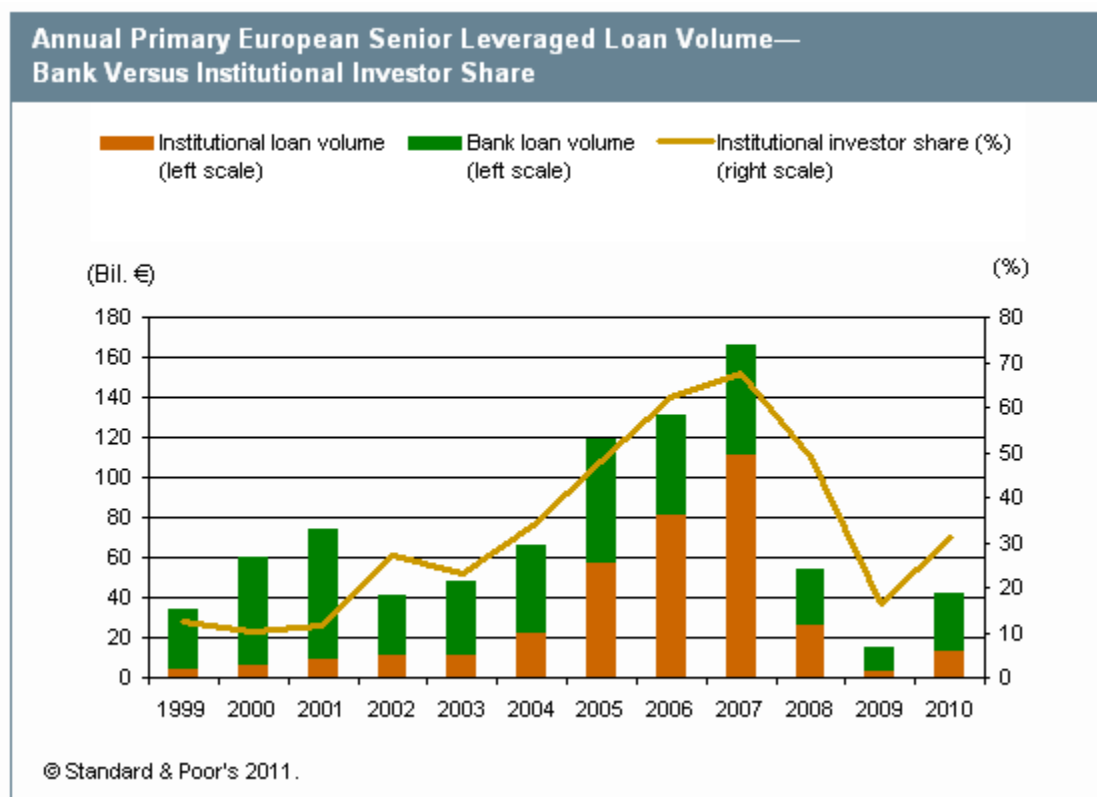
## **CLO Vehicles Fueled Leveraged Loan Expansion In The Past Decade**

The development of the European leveraged finance market over the past 10 years has reflected the rapid rise to prominence of large private equity firms and their subsequent retrenchment, given their heavy reliance on the availability of debt financing to support their business models. As illustrated in chart 1, the annual issuance of senior loans in the leveraged finance market quadrupled to €166 billion in 2007, from €41 billion in 2002. To put that in context, the consolidated gross debt of Sweden today is about €151 billion, according to the European Commission.

From our perspective, private equity investors were the main catalyst for this growth, as they identified the opportunity to create attractive returns by buying ever-larger companies and structuring them as leveraged buyouts (LBOs). In fact, according to Standard & Poor's Leveraged Commentary & Data (LCD), on average 86% of primary leveraged loan activity in Europe between 2005 and 2007—when activity was at its peak—was private equity-sponsored. Of course, the success of the LBO business model also depended on the provision of sufficient, cost-effective debt financing. Back in 2003–2007, the banking community, together with the growth of alternative investors, had sufficient liquidity and appetite to facilitate the significant growth that the leveraged loan market experienced at that time.

As shown in chart 1, the growth of the institutional loan market was a major factor supporting the rapid growth of LBO activity in Europe. Institutional investors provided only about 10% of leveraged loan financing in 2001, but over the next six years their share of primary loan market activity grew to 67% by the time the market peaked in 2007. CLO vehicles have been the most important type of institutional investor over the past decade, providing up to 63% of overall institutional loan funding in 2007 (see chart 1).

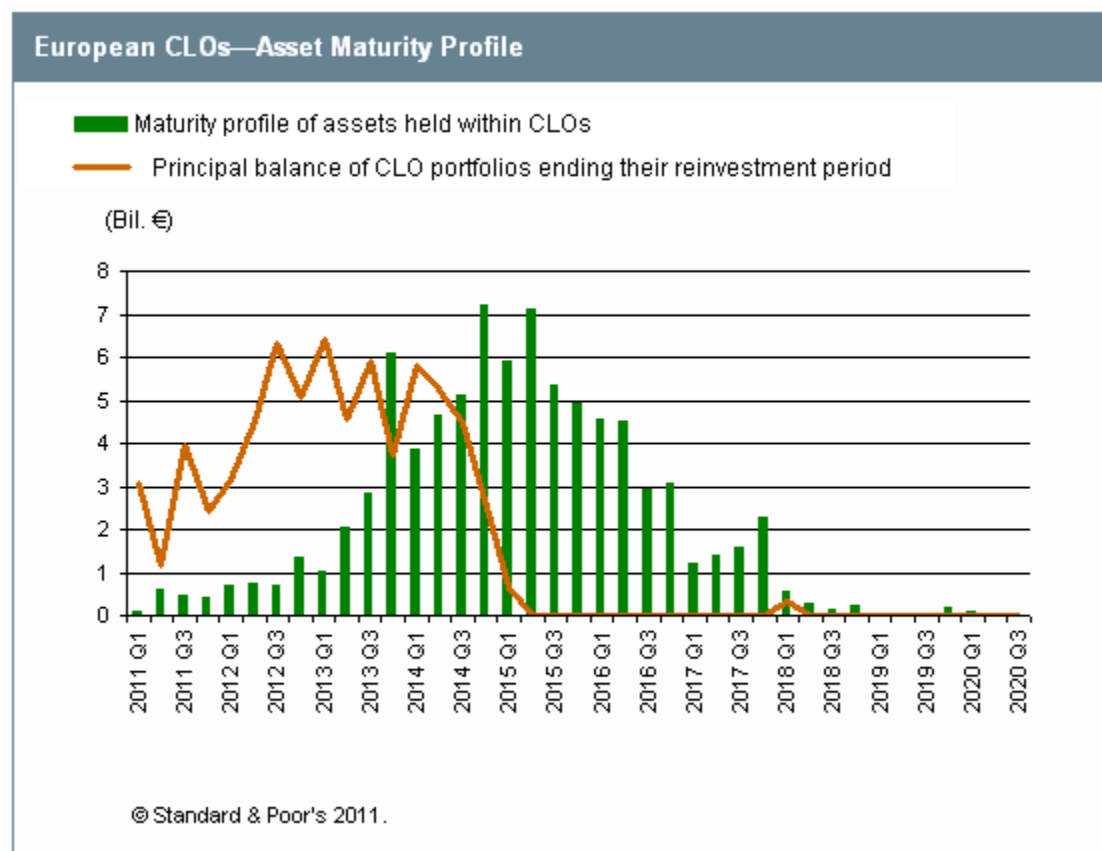
Chart 1



## Leveraged Loan Maturities Peak In 2015, Just As All Existing CLO Support Wanes

As chart 2 indicates, in 2014 and 2015 there is a concentration of leveraged loans maturing at a time when a significant batch of existing CLOs are—according to their governing documents—unlikely to be able to offer fresh finance. We expect the potential concerns surrounding refinancing are likely to be further exacerbated by other pressures in the CLO market (which we discuss below) and by the general refinancing difficulties currently existing in the global capital markets.

Chart 2



Leveraged loans generally, and those underlying CLOs specifically, routinely require refinancing. The average tenor of a leveraged loan is about 6–7 years, meaning that many of the leveraged loans advanced in peak years of 2006 and 2007 have started to mature. Our data indicates that borrowers have had some success in refinancing their loans as the weighted-average maturity of loans in CLO pools we rate has risen over the past three years. Looking forward, though, the picture isn't quite so hopeful.

In Appendix 4, we give a deeper breakdown of which industries and countries could experience the biggest funding pressures.

## What's Restricting CLO Refinancing?

So why is CLO participation in the refinancing of leveraged loans likely to be limited over the next few years? Primarily, as chart 3 shows, this is due to CLO reinvestment periods ending, which is likely to limit CLOs from reinvesting in leveraged loans, in our opinion.

Added to this, we believe that several technical reasons may also inhibit the CLO market's participation:

- First, many CLOs governing documents restrict reinvestment following a downgrade of the CLO's notes;
- Second, other restrictive reinvestment guidelines that limit CLOs from reinvesting in leveraged loans; and
- Third, many subordinated CLO noteholders have the option to redeem their notes under certain conditions,

which could—if those circumstances arise—hasten the end of the CLO even before its reinvestment period ends.

Lastly, we have witnessed a fall-off in new CLO creation in recent years, meaning that we would have to see a steep rise in new CLO issuance in Europe in order to plug the potential gap left by the restrictions on existing CLOs (see "What Could Fill Leveraged Finance Refinancing Needs?" below).

### **Existing CLOs' reinvestment periods are ending**

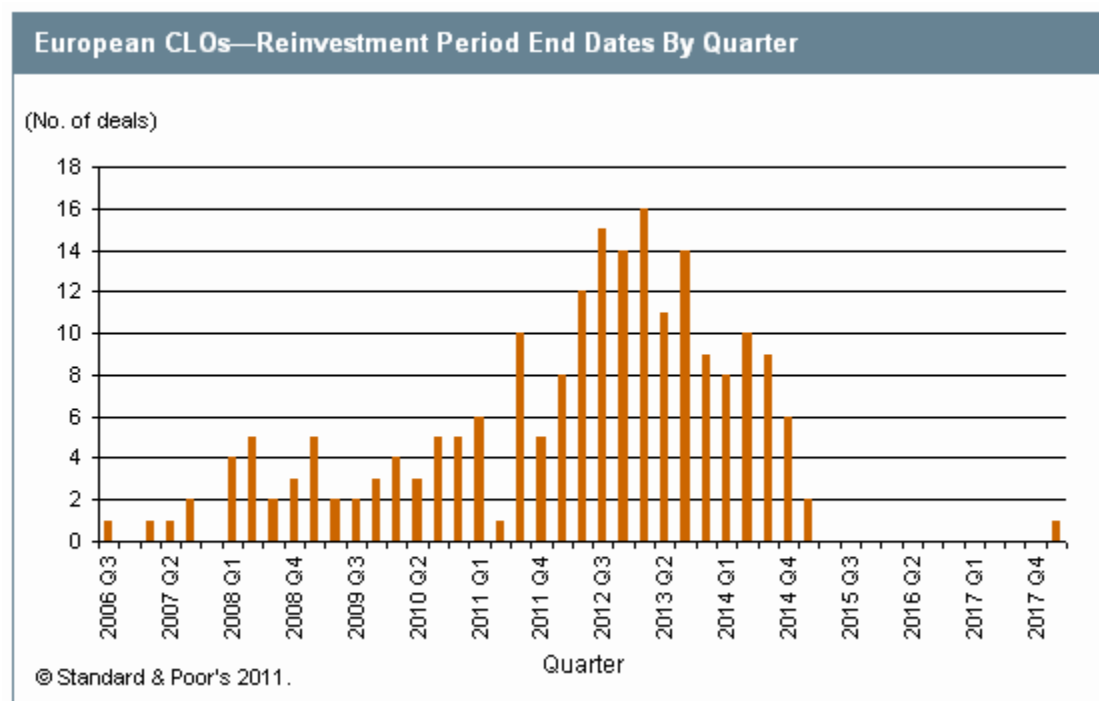
During the reinvestment period, CLO managers can refinance existing loans in the CLO's portfolio or trade new loans for existing ones, typically subject to pre-agreed guidelines. Once this period ends, however, this practice usually stops and the portfolio remains almost static until the CLO's notes mature (see sidebar 2 below for further details).

Our study shows that a majority of existing European CLOs will exit their reinvestment periods between 2012 and 2014. By the end of 2014, a significant number of outstanding CLOs will have exited their reinvestment periods, which is likely to mean a sharp decline in CLO reinvestment rates in leveraged loans.

Considering all CLOs that were within their reinvestment periods at the beginning of this year, in 2011 alone, 15% of existing European CLOs by par amount (as of the end of 2010) will enter their amortization periods. This is followed by an additional 27.5% of CLOs that are set to mature throughout 2012. By the end of 2013, existing CLOs still within their reinvestment cycle will have dropped by 72.6%, with a further 29.7% of CLOs exiting reinvestment over the course of that year. 98.6% of existing CLOs covered by our dataset will have entered amortization phase by the end of 2014.

In terms of count, 22 CLOs will exit their reinvestment periods by the end of this year. Over the course of 2012, the number of CLOs ending their reinvestment periods will more than double, with 49 European CLOs entering amortization. The highest number of CLOs ending their reinvestment periods—50 European CLOs that we rate—will exit reinvestment in 2013 (see chart 3).

Chart 3



### CLO reinvestment guidelines may also constrain existing CLOs from providing refinancing assistance to leveraged loan borrowers

We believe certain reinvestment guidelines may also potentially limit a CLO's capacity to provide necessary leveraged loan refinancing.

In certain situations, CLOs may reinvest proceeds only on a limited basis during the reinvestment period. In sidebar 2, we provide examples of the sort of reinvestment guidelines with which CLOs would generally need to comply to continue reinvesting in leveraged loans. Typically, if the CLO breaches one of the guidelines, this would generally end—or at a minimum curtail—the reinvestment period until the CLO is back in compliance. As of the end of April 2011, 17% of the European CLOs covered by our dataset (which represents 35 CLOs covered by our dataset, four of which are failing their senior overcollateralization [OC] tests and 31 failing junior OC tests) are currently failing at least one coverage test, indicating that CLOs ending their reinvestment periods is not the only factor that could limit a CLO from providing refinancing assistance to the leveraged loan investor base.

## Sidebar 2: Reinvestment In Practice—The Three Stages Of A Typical CLO

Typically, a managed CLO's timeline to maturity would flow through three distinct phases: The ramp-up period, the reinvestment period, and the amortization period (i.e., after the reinvestment period).

**The ramp-up period.** Unlike the majority of traditional structured finance products, CLO new issuance is typically not fully "ramped" on the closing date of the transaction. Historically, 60%–70% of the CLO portfolio would have been identified and purchased, with the remaining portion being purchased after the transaction closes according to investment guidelines. Once the portfolio is 100% "ramped up," it is "effective." It is generally at the effective date where the CLO's reinvestment period begins.

**During the reinvestment period.** Among other factors, the CLO offers a protracted reinvestment period, which aims to ensure a material source of financing, mainly to European corporate borrowers who generally carry speculative-grade ratings. During this specified period, CLO managers can sell and reinvest assets in an effort to improve the portfolio's credit quality. For example, the proceeds received from the scheduled repayment of a loan—whether in full or in part—can be redeployed in another loan by the CLO manager, so long as specified guidelines are met. In this way, the CLO remains reinvested.

Most European cash flow CLO documents provide specified guidelines (typically referred to as the "reinvestment criteria" in transaction documents) that allow CLO managers to make changes to their portfolios during the CLO's reinvestment period. For example, a CLO manager would typically be allowed to reinvest provided that:

- No event of default is occurring,
- Investment guidelines are satisfied or not made worse,
- Weighted-average coupon/weighted-average spread tests are maintained or improved,
- The weighted-average life test is maintained or improved,
- The weighted-average recovery rate tests are maintained or improved,
- Standard & Poor's CDO Monitor Test is maintained or improved,
- Other NRSRO (Nationally Recognized Statistical Rating Organization) tests are not breached, and
- The par balance of the CLO is no lower than before the reinvestment was made.

A CLO manager would typically have the following types of proceeds at hand with which to reinvest:

- Scheduled principal redemptions (repayments),
- Recoveries received from the sale of defaulted assets,
- Unscheduled principal redemptions (prepayments),
- Credit-improved sales,
- Credit-impaired sales,
- Discretionary sales/purchases, and
- Circumstances where interest is characterized as principal (for example, following the failure of a typical reinvestment OC test).

In certain situations, CLOs may reinvest proceeds only on a limited basis during the reinvestment period. For instance, if the CLO breaches one or more of its OC tests, this would generally result in a de facto end of the reinvestment period until the tests are back in compliance. In this instance, a CLO manager would generally use any scheduled principal repayments received from the underlying loans to redeem its liabilities in their order of priority. However, transaction documents would still typically allow CLOs to reinvest unscheduled principal proceeds so long as they meet covenant restrictions, even when OC tests are in breach.

**Amortization period—after the reinvestment period.** Following the end of the reinvestment period, in general scheduled principal proceeds received by the CLO from its underlying investments would be used to redeem its liabilities in order of priority. In some cases, however, CLOs may still reinvest unscheduled principal proceeds, provided that reinvestment guidelines continue to be satisfied (for example, where the maturity date of the new loan being purchased is no greater than the maturity of the loan that prepaid, or the maturity of the new loan does not exceed the maturity of the CLO's liabilities).



### **Reinvestment restrictions following a downgrade**

A further deterrent that may prevent reinvestment, regardless of where the CLO sits in its timeline. Some transaction documents prevent CLOs from reinvesting any type of principal proceeds if the ratings on the notes issued by the vehicle have been negatively affected by rating actions. For instance, if the ratings on the senior notes of a CLO falls by more than one notch and the rating on the junior notes by several notches, then in general a CLO manager would be prevented from reinvesting in additional loans and may only be able to engage in the sale of defaulted and credit-impaired or credit-improved loans as the CLO manager deems appropriate. This also applies even if the CLO is compliant with all coverage tests and all other reinvestment guidelines.

### **Redemption at the option of subordinated CLO noteholders**

A significant number of CLO documents include provisions where the issuer of a CLO may call the transaction if requested by subordinated noteholders (typically, the equity noteholders). This would result in all proceeds held by the CLO being applied to redeem all outstanding classes of notes, often in accordance with the CLO's priorities of payments. The option to call a CLO transaction by subordinated noteholders is typically subject to the transaction satisfying specified requirements, as detailed in sidebar 3.

#### **Sidebar 3: Optional Redemption Of A CLO**

Generally, the issuer may call a CLO transaction on behalf of the subordinated noteholders only after a specified period has ended, typically represented as the "non-call period" in CLO transaction documents. Based on the universe of CLOs in our study, the non-call period generally ranges from 3–5 years, starting from the closing date of the CLO. Subordinated noteholders are not able to exercise their option to call for redemption during this time.

Following the end of the non-call period, subordinated noteholders may exercise their option for redemption of all classes of notes at any time thereafter provided that certain generic guidelines are met:

- A majority of subordinate noteholders must have requested the redemption. CLO guidelines typically state that a predefined percentage of subordinated noteholders by the current principal amount of the liability would be required in order to request redemption of all classes of notes. In most instances, majority noteholder consent would be required to satisfy this quorum—for instance, a request in writing of two-thirds of the aggregate principal amount of the class subordinate notes then outstanding would be required to redeem all classes of notes.
- The proceeds realized following liquidation of the underlying loans held by the CLO (together with any remaining proceeds held in the CLO's accounts) must be sufficient to fully repay all noteholders, including accrued interest, in accordance with the CLO's priorities of payments.

In our view, subordinate noteholders exercising their option to call CLO transactions would result in CLOs exiting the institutional market sooner than expected, potentially further exacerbating refinancing risk for leveraged loan borrowers. We believe that CLO redemption could therefore result in a sharp contraction of the institutional investor base (as opposed to CLOs naturally amortizing toward maturity), which could significantly limit the choices available for funding the leveraged finance market.

Results from our study show that, so far, 129 out of the 205 existing CLOs covered by our study have ended their non-call periods.

62 existing CLOs ended their non-call periods during 2010. A further 56 CLOs, which represent 27% of the CLOs

in our study, will end their non-call periods by the end of this year—bringing the total to 185 CLOs (or 90% of the dataset) having the ability to exercise redemption.

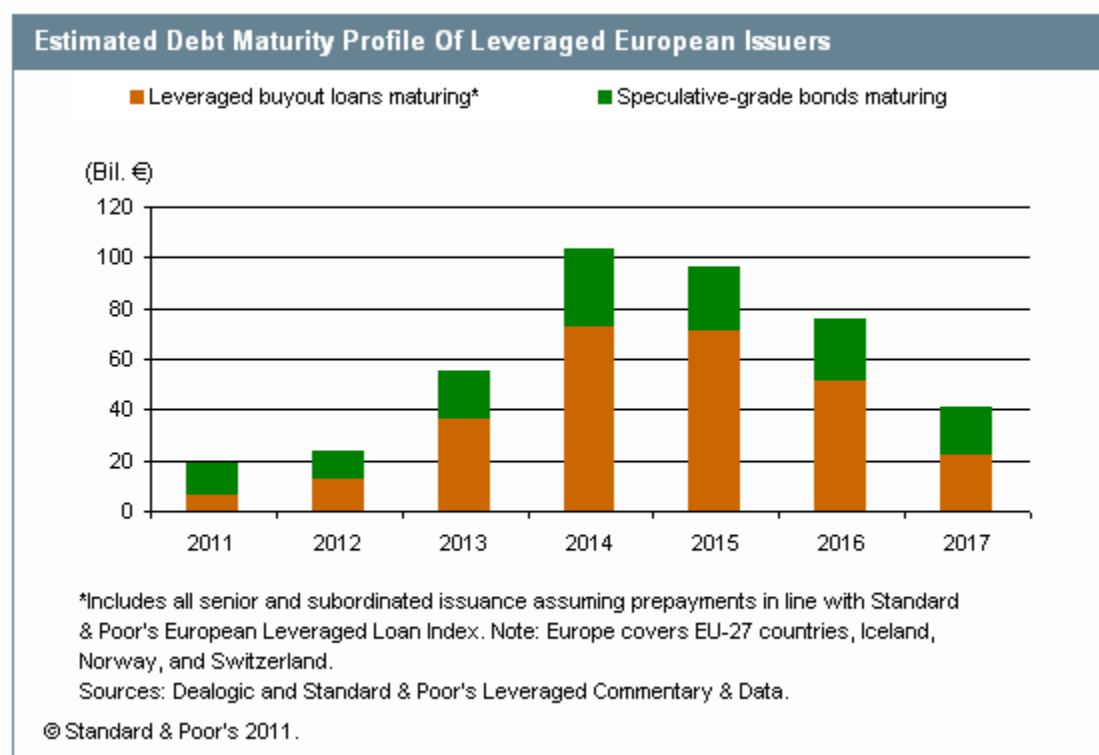
While we do not view optional redemption as an immediate or even a direct risk to the leveraged loan community, we believe that this potential scenario is an important factor for market participants to bear in mind over the longer term.

## What Could Fill Leveraged Finance Refinancing Needs?

It is instructive to try to estimate the size of any potential financing gap by reviewing the maturity profile of existing leveraged loan issuers.

By our calculations, the volume of leveraged loans maturing in Europe from 2011–2017 totals approximately €250 billion. To arrive at this figure, we used maturity leveraged loan data from Dealogic as of December 2010, so excluding new 2011 primary loan volume, and assumed prepayments in line with those for our European Leveraged Loan Index as of June 2011. As shown in chart 4, we anticipate that the peak for loan maturities will be about €67 billion in each year, in the absence of earlier refinancing.

**Chart 4**



From a leveraged finance perspective, a legacy of the recent recession is a fundamentally different funding environment, namely a significant reduction in the availability of debt finance for leveraged loan issuers. This will, in our view, present challenges for more vulnerable, typically smaller, leveraged loan issuers that will need to refinance over the next two to four years.

Nonetheless, at least until a few weeks ago, the funding picture had been quite supportive for borrowers, judging by Q2 2011's €16 billion primary leveraged loan volume (the highest level since Q3 2008 according to S&P Leveraged Commentary and Data [LCD]). This largely reflected 2006-2008 vintage loan issuers taking advantage of a temporary increase in investor liquidity to refinance. The importance of the high-yield market cannot be overstated in this context. Specifically, at least 30% of new European high-yield issuance during the first half of 2011, or almost €9 billion, has been raised to refinance leveraged loans. This has helped to de-risk the banks and provided CLO investors with funds to reinvest. This renewed investor appetite for loans has facilitated an increase in loan refinancing activity, particularly where the institutional component can be increased while the pro rata bank element is reduced. The refinancing by Kabel Deutschland in June 2011 is a good example where a bond issue and a new seven-year institutional term loan essentially refinanced the revolver, PIK loan, and much of the existing Term Loan A.

On the other hand, we believe that European banks are exhibiting caution in their appetite for lending to highly leveraged enterprises, and, wherever possible, continue to prioritize managing down their exposure to 2006–2008 vintage LBOs, particularly for those with weaker credit characteristics. Rising capital charges, high wholesale funding costs, and capital scarcity are expected to continue weighing on European banks' willingness to commit leveraged corporate loans to their balance sheets. In this context, it is notable how dependent arrangers are on institutional liquidity rather than other banks to sell down their loan exposures. Until the recent market setback, arrangers were even starting to provide delayed settlement facilities to institutional investors in anticipation of investors reinvesting future prepayments.

We expect European CLO issuance to remain muted for some time, which means that CLO technology is unlikely to generate any meaningful funding for new leveraged buyout transactions going forward. In our view, two main drivers support this conclusion.

First, CLO economics in Europe are still not attractive enough to provide the arbitrage necessary for new CLO transactions, given high CLO note margins relative to the margins on loan collateral (we note in detail in "Appendix 2: Arbitrage And Demand Were The Main Growth Drivers For The European CLO Market" that the majority of CLO issuance in Europe was driven by arbitrage).

Second, we believe that CLOs face the significant head-winds of risk retention rules as outlined in Article 122a of the European Union Capital Requirements Directive. Since CLOs are viewed as major lenders to the European leveraged finance market, the "skin in the game" directive is likely to mean a significant reduction in CLO creation in the future, severely limiting the debt funding options for potential leveraged loan issuers in Europe.

## **Appendix 1: Overview Of European Leveraged Loan Market**

### **Standard & Poor's perspective on corporate credit quality**

Under our base case, we anticipate that economic growth will remain positive in Europe through 2011 and into 2012. However, it is likely to be subdued with significant variations between countries while the downside risks caused by the escalating eurozone sovereign crisis are increasing.

In relation to the north-south divide, we would expect Northern European countries—led by Germany, with a highly competitive industrial base and relatively sound public finances—to experience the strongest growth, supported by strong exports (see table 1). At the tail, we believe that peripheral countries, weighed down by

austerity programs designed to stabilize budget deficits, as well as relatively high inflation that further undermines the weak competitive position of industry, at best are likely to experience minimal, but still positive, growth in real terms. We anticipate that other countries, such as France and the U.K., will be in the middle lane.

Inevitably, corporate performance will largely depend on the macroeconomic environment, and the sector and location of key clients. However, in our view it is important to note that most companies in Europe are more operationally leveraged after the recession, by virtue of the timely and stringent cost-saving measures enacted during 2009. By the same token, they typically do not have the same degree of flexibility to improve liquidity and implement further cost-saving measures if a further unexpected downturn were to materialize in the near to medium term.

**Table 1**

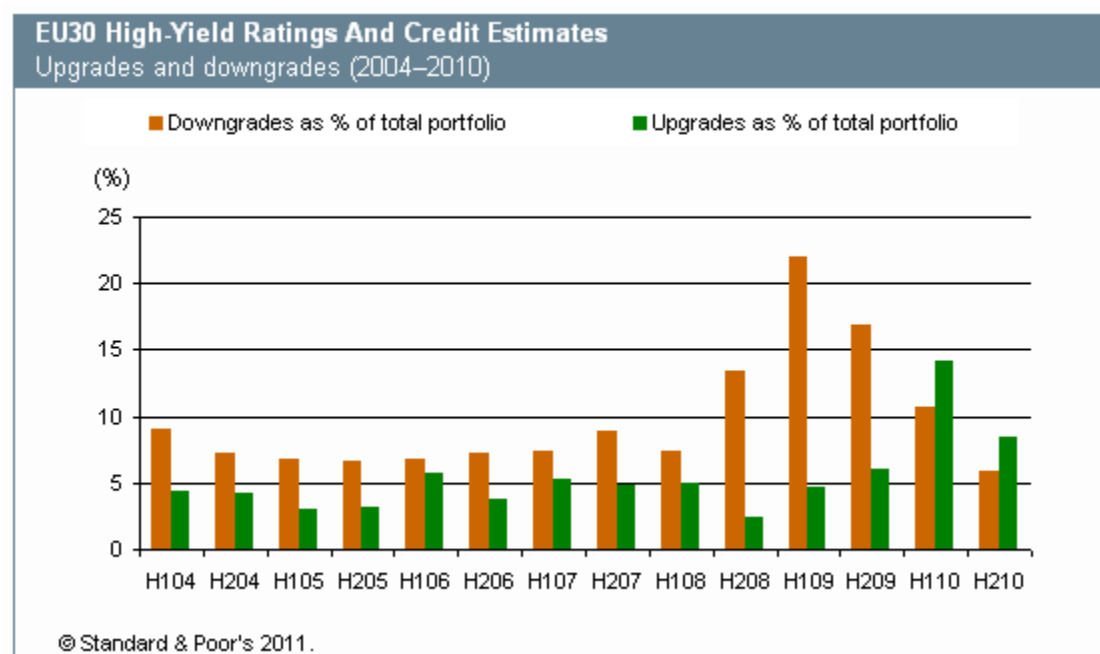
Main European Economic Indicators By Country						
	Germany	France	Italy	Spain	U.K.	Eurozone
<b>Real GDP (% change)</b>						
2009	(4.70)	(2.50)	(5.10)	(3.70)	(5.00)	(4.00)
2010	3.50	1.50	1.20	(0.10)	1.30	1.70
2011f	3.50	2.00	0.90	0.80	1.50	1.90
2012f	2.50	1.90	1.00	1.50	2.20	1.80
<b>CPI inflation (%)</b>						
2009	0.40	0.10	0.80	(0.20)	2.20	0.30
2010	1.10	1.70	1.60	2.00	3.30	1.60
2011f	2.10	2.30	2.50	3.30	4.00	2.30
2012f	2.00	2.00	2.20	1.50	2.90	2.00
<b>Unemployment rate (%)</b>						
2009	8.20	9.10	7.80	18.00	7.70	9.50
2010	7.70	9.30	8.40	20.10	7.80	10.00
2011f	7.00	9.00	8.70	21.00	7.70	9.80
2012f	6.50	8.50	8.20	20.00	7.50	9.50

f--Standard & Poor's forecast. CPI—Consumer Price Index. Source: Standard & Poor's, Aug. 3, 2011.

### Effects on Standard & Poor's corporate ratings and outlooks

The strengthening in the economic environment in 2010 and an improvement in our general business outlook was reflected in both a marked fall in the absolute number of rating changes across corporate entities, and a switch where upgrades outpaced downgrades for Western European speculative-grade corporates in first- and second-half (H1 and H2) 2010. This has continued through the first half of 2011.

Chart 5



Similarly, we have seen a substantial improvement in the distribution of outlooks we assign for most industrial sectors in Western Europe. As of July 2011, sectors where more rated companies are on positive outlook (or CreditWatch status) than negative included paper and forest products, health care, retail, capital goods, consumer products, and chemicals. On balance, we still have a somewhat negative view for industrial sectors, judging by the outlook distribution for transportation, hotels and gaming, property, and real estate. The drivers at a high level reflect the ongoing strength of demand emanating from Asia (chemicals, capital goods, high-tech), and better-than-expected financial performance in certain sectors given their rating levels (including consumer-facing). However, headwinds persist for sectors most exposed to higher commodity prices with little pricing power (transportation), or those exposed to public expenditure cuts, as well as companies dependent on real estate and construction activity (building materials).

### The default rate is back below the long-term average—for now

The default rate for speculative-grade companies has fallen sharply (combining both public ratings and private credit estimates). The 12-month trailing default rate fell to 3.8% at the end of December 2010, from 13.6% at the end of December 2009. This equates to 28 companies defaulting on a total €18.1 billion of outstanding debt. The 12-month trailing default rate is back below its longer-term average of 4.0% for the first time since third-quarter (Q3) 2008. (For more information, see "Western Europe's Speculative-Grade Default Rate Falls Back Below Its Long-Term Average—For Now," published May 3, 2011.)

The default rate appears to be running at similar levels in H1 2011, and has benefited from the temporary improvement in debt market liquidity in recent months, the low level of interest rates, and the bulk of loan maturities for speculative-grade companies not falling due until 2014–2015.

However, we would warn against complacency, as the credit quality of the bulk of our private credit estimates remains relatively weak, in our view. Of the total credit estimate data set, 45.5% remained at 'b-' or below at the

end of 2010, compared with 32.2% at the end of December 2009. In particular, we note:

- Many highly leveraged companies, including a high percentage that have been restructured during 2009–2010, continue to have weak balance sheets, despite some recent improvement in operational performance.
- We anticipate that certain balance-sheet-constrained LBOs' ability to recover will be limited by their lack of liquidity either to invest in growth capital expenditure sufficiently, or to support higher working-capital requirements that may be needed to grow the business, including funding higher inventory levels.
- Although the bulk of maturities for the 2006–2008 vintage LBOs does not peak until 2014–2015, we remain concerned about lenders' willingness to amend covenants as they tighten in 2012–2013: In our view, there are doubts over their willingness (for banks) and ability (for CLOs) to refinance many of these companies as the maturity horizon approaches.

As a consequence, we are of the view that defaults could start to pick up again from Q1 2012, due to the challenges of refinancing many of the 2006–2008 vintage LBOs. Our current base-case estimation foresees the default rate at the end of 2011 at 3.8%, returning to a higher range of 5.5%–7.5% by the end of 2012. (For a fuller explanation, see "Default Rate For European Speculative-Grade Companies Set To Climb In 2012 As Balance Sheet Issues Resurface," published May 3, 2011).

## **Appendix 2: Arbitrage And Demand Were The Main Growth Drivers For The European CLO Market**

### **Growth from 2001–2007**

A hallmark of the 2001–2007 period was the growth of the European CLO market. Traditional arbitrage CLO structures dominated much of the European CLO landscape throughout this period, where increases in issuance volumes year-on-year were complemented with larger CLO structures. We note that the average rated issuance amount of a European cash flow CLO closing in 2004 was €360.84 million (the minimum amount being €262.75 million and the maximum €631.5 million), compared with €479.66 million in 2007 (minimum €267 million, maximum €1.3 billion). In terms of count, we rated 17 cash flow CLOs in 2004 (three of which have now redeemed); this compares with 23 transactions in 2005 (two of which have redeemed), 64 in 2006 (two now redeemed), and a peak of 71 European cash flow CLOs closing in 2007.

Chart 6

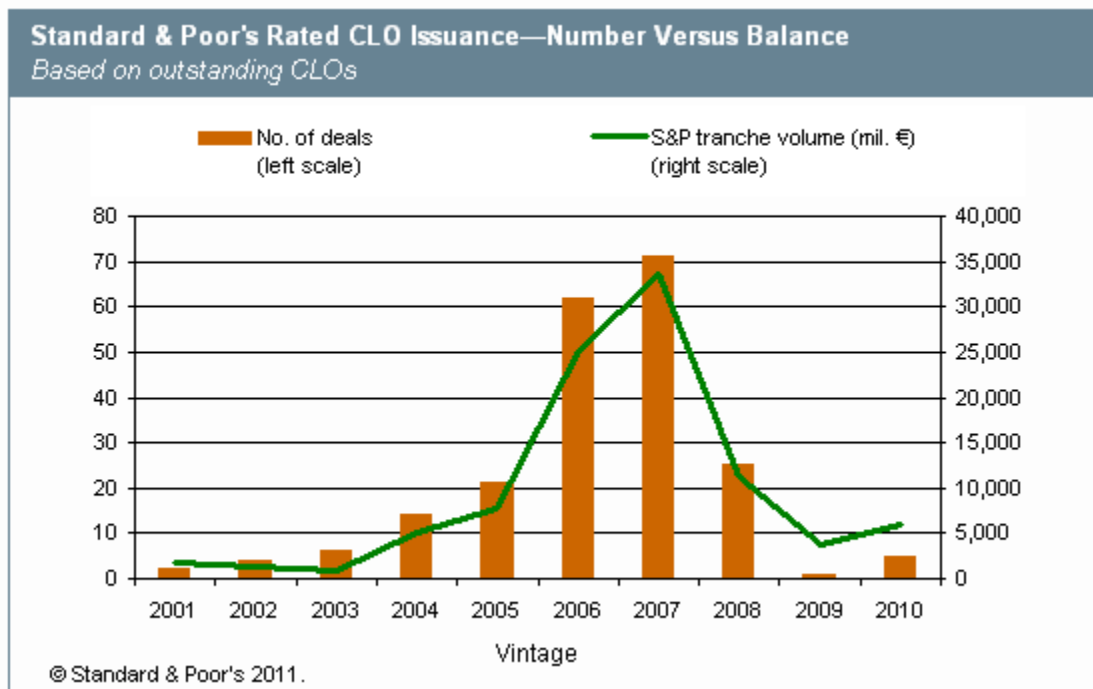
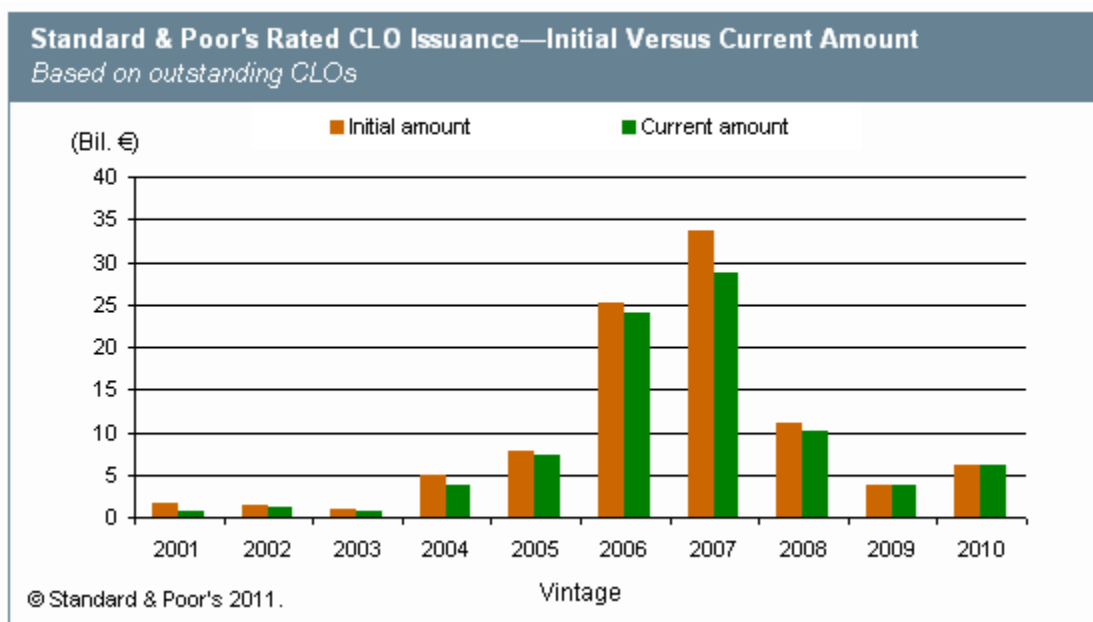


Chart 7



### So why the rally?

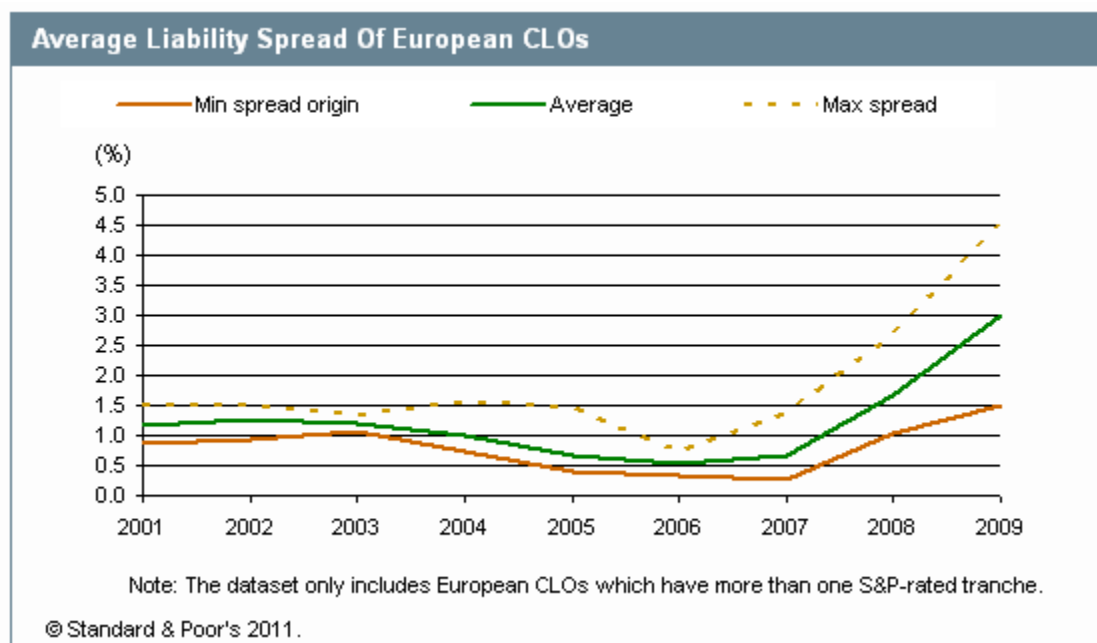
Key to understanding the unprecedented growth of the European CLO market is understanding the motivations behind CLO creation.

Generally, an originator's motivation behind structuring and issuing CLOs falls into four broad categories:

- **Arbitrage:** One of the key drivers in the CLO markets' rapid growth, in our view. The varying risk-reward profile of a CLO offers attractive returns to noteholders in the CLO's capital structure, relative to other debt instruments with similar risk profiles. To illustrate, let us consider the viewpoint of a CLO equity noteholder. Structural features such as tranching allow an arbitrage CLO model to fund—and gain exposure to—leveraged loans. The costs of funding the CLO—predominantly driven by the stated spread on the most senior class(es) in the CLO's capital structure—are typically lower than the yield generated from the loans held in the CLO. As a direct consequence, the asset-liability differential (or arbitrage) that materializes will offer relatively attractive returns to an equity CLO investor.
- **Capital relief/Regulatory capital:** Financial institutions are typically the originators of such transactions. As we explain below in the context of 2008 European CLO origination, selling assets to a CLO reduces the amount of regulatory capital required for market participants, which in turn puts less strain on their balance sheets.
- **Risk management:** Financial companies that frequently provide loans to different businesses may wish to reduce their exposure to such businesses, and so transfer the exposure to other investors through a CLO.
- **Funding:** Some institutions may originate loans and then securitize them in a CLO, to free up their balance sheets and obtain funds again.

Although a non-exhaustive list, we believe the above factors have been central to the growth of the European CLO market. Coupled with this, we also believe that investor demand for CLO paper over the market's evolution remained consistently strong. A broadening investor base not only helped aid the growth in underlying loan issuance volumes and overall market liquidity, but in turn also resulted in improved CLO economics, with CLO spreads tightening across the CLO capital structure. A review of the European cash flow CLOs that form our European CLO Performance Index shows that the average cost of funding a cash flow CLO fell on average by 47 basis points (bps), to 53 bps by 2006 from 100 bps in 2004. We consider this a key factor supporting the conclusion that CLO demand remained resilient for some time.

**Chart 8**





As we have noted in previous publications, traditional arbitrage CLO issuance stagnated dramatically in 2007, with "financing" or "structure-to-repo" transactions setting the scene for CLO issuance in 2008 (see "European CLOs 2008 Review—Declining Corporate Credit Quality Raises Questions About Future CLO Performance," published March 20, 2009). The motivation behind these transactions, in our view, was that CLOs continued to be an attractive form of funding for financial institutions and market participants in managing their risks throughout the global financial turmoil. Nevertheless, the reduced confidence and risk-appetite of investors resulted in a dramatic rise in liability pricing for European CLOs (see chart 8 above). In 2008, we rated 33 such transactions (of which eight CLOs have redeemed) totaling €26.8 billion, a significantly lower number than in 2007 (71 transactions). The average rated issuance volume of an individual 2008 European cash flow CLO was €398.8 million.

The trends witnessed in 2008 continued throughout 2009, where issuance volumes of European cash flow CLOs declined further. Total rated issuance in 2009 was €3.046 billion, spread over two European cash flow CLOs (of which one CLO has already redeemed).

In 2010, we rated five European cash flow CLOs, bringing the total rated issuance to just over €3.96 billion. In our view, the incentive behind these transactions was primarily for balance-sheet funding as market participants continued to find ways to cope with the distressed financial environment.

Although the motivation behind CLO issuance has shifted over the years in line with the economic environment (i.e., from traditional arbitrage to balance-sheet funding), to date our research shows that the overall performance of European CLOs we rate—regardless of vintage or motivation—is currently showing improved performance trends in several key areas, as described below.

### **Appendix 3: European CLOs Have Continued Their Upswing To Kick-Start 2011**

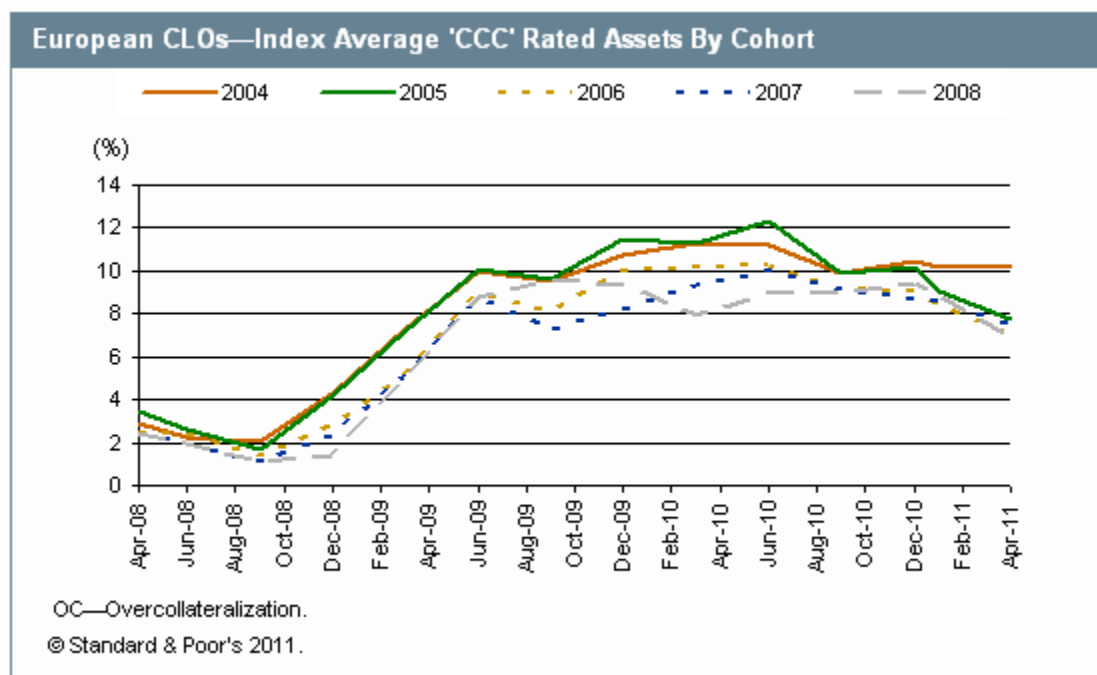
Our latest European CLO Performance Index Report (published monthly; see "April 2011 European CLO Performance Index Report: Improving CLO Performance Indicators Spur Fall In Overcollateralization Test Failures," published on June 27, 2011) highlights that the performance of European CLOs since the start of 2011 has shown positive signs in key areas the index covers.

#### **The index average of 'CCC' category rated assets appears to be leveling off after its 2010 peak**

We calculate the index average of 'CCC' category rated assets ("the 'CCC' index average") by computing the average of all assets rated 'CCC+', 'CCC', and 'CCC-' in each cohort.

Observations from the index show that the 'CCC' index average for all cohorts appears to have peaked during the second quarter of 2010 (see chart 9). However, from January 2011 onward, the 'CCC' index average has continued decline for all CLO cohorts, with the 2005-vintage transactions exhibiting the largest decline in 'CCC' rated holdings compared with their peak values in 2010 (12.33% in June 2010, versus 7.74% as of April 2011).

Chart 9

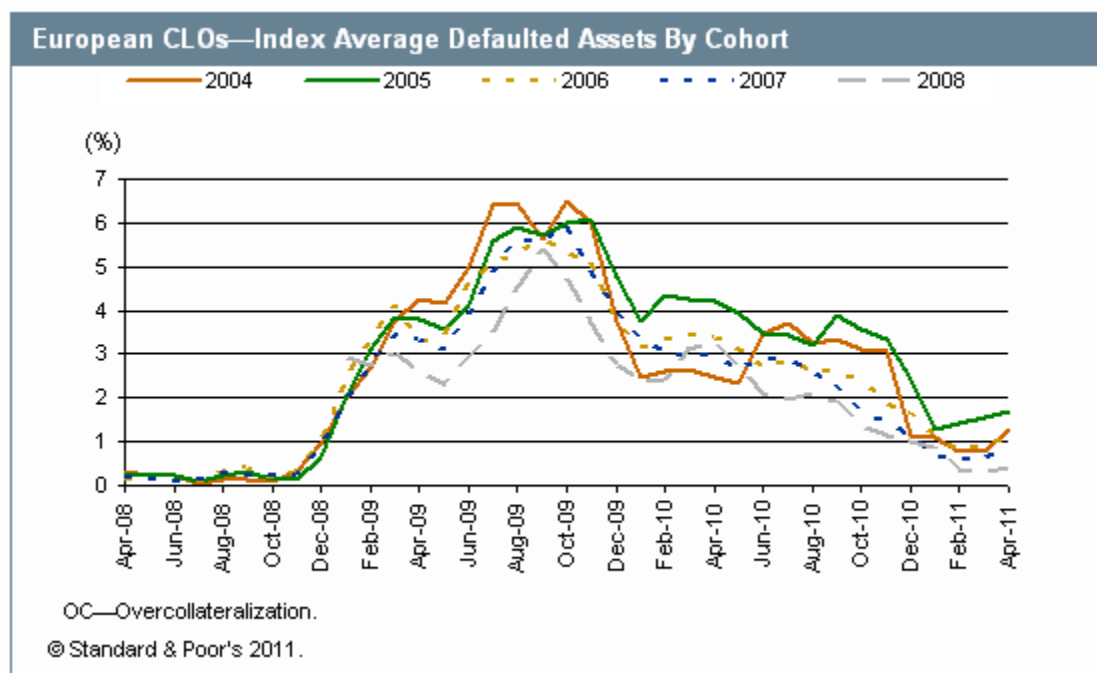


As noted in "Standard & Poor's perspective on corporate credit quality" in Appendix 1, the strengthening of the economic environment throughout 2010, coupled with an improvement in our general business outlook for corporates, has resulted in positive rating changes for speculative-grade corporate entities. Observations from our CLO index show that European CLOs have naturally felt the effects of these changes, to the extent that their portfolios held such loans.

### Month-on-month holdings of defaulted assets have fallen from their 2009 peak

All of the CLO cohorts experienced the highest percentage holding of defaulted assets (i.e., assets from obligors rated 'CC', 'SD' [selective default], or 'D') toward the end of 2009. Specifically, over the last quarter of 2009, the average percentage of defaulted assets held by 2004-vintage transactions was 5.42%, compared with 5.61% for the 2005 vintage, 4.70% for the 2006 vintage, 4.92% for the 2007 vintage, and 3.72% for the 2008 vintage (see chart 10).

Chart 10



However, from 2010 onward, the index began a gradual decline for all cohorts, which has continued since the beginning of 2011. Our latest index report highlights that as of April 2011, the percentage of defaulted assets held by all the European CLO cohorts were less than half their values 12 months earlier. The 2008-vintage CLOs experienced the largest 12-month decline, where defaulted holdings in 2008-vintage CLO portfolios decreased to 0.43% of total assets in April 2011, versus 3.31% in April 2010. This is followed by the 2005 cohort (to 1.68% from 4.20%), 2006 (to 1.08% from 3.39%), and then the 2007 cohort (to 0.91% from 2.96%).

We believe that the fall in default holdings in European CLOs has largely been due to an increase in corporate restructurings that have been completed where the underlying credit has been upgraded throughout 2010, rather than CLO managers selling such loans out of their portfolios (for more details, see "Western Europe's Speculative-Grade Default Rate Falls Back Below Its Long-Term Average—For Now," published May 3, 2011).

In our view, the stronger recovery in 2010, coupled with the rising stock market and improving business confidence, was conducive to a more lender-friendly environment. This helped to lower the default rate in two ways. Firstly, where loans still had four or five years to run to maturity, senior lenders felt comfortable amending covenants and resetting spread margins rather than imposing a more contentious restructuring. Secondly, where restructuring was unavoidable, senior lenders were better protected from loss and better able to force through a balance sheet restructuring as quickly as possible to protect the commercial prospects of the business. This meant that a default or selective default under our criteria was quite often of short duration. These factors played directly into the reduction in the percentage of defaulted loans held by CLOs to the extent that such loans were held in CLO portfolios.

#### Improvements in credit quality and cash flow diversion mechanisms have had positive implications for OC ratio test cushions

Senior overcollateralization (OC) ratio test cushions—the difference between the weighted-average OC percentage of senior tranches and the weighted-average required OC percentage of senior tranches calculated by the index—have

improved significantly over the past 12 months (see chart 11). Observing how senior OC cushions have performed over the past three years shows that existing European CLOs issued in 2007 have, on average, built the largest senior OC cushion, with the average senior OC cushion being 13.29%, and the median senior OC cushion 11.77%.

Likewise, subordinate OC cushions—defined as the difference between the weighted-average OC percentage of subordinated tranches and the weighted-average required OC percentage of subordinated tranches calculated by the index—have also followed suit (see chart 12). In particular, 2005-vintage European CLOs have built the greatest margin in their junior OC tests. According to data from our CLO index, the average junior OC test cushion was 1.03% over the past three years, with a median value of minus 0.03%.

**Chart 11**

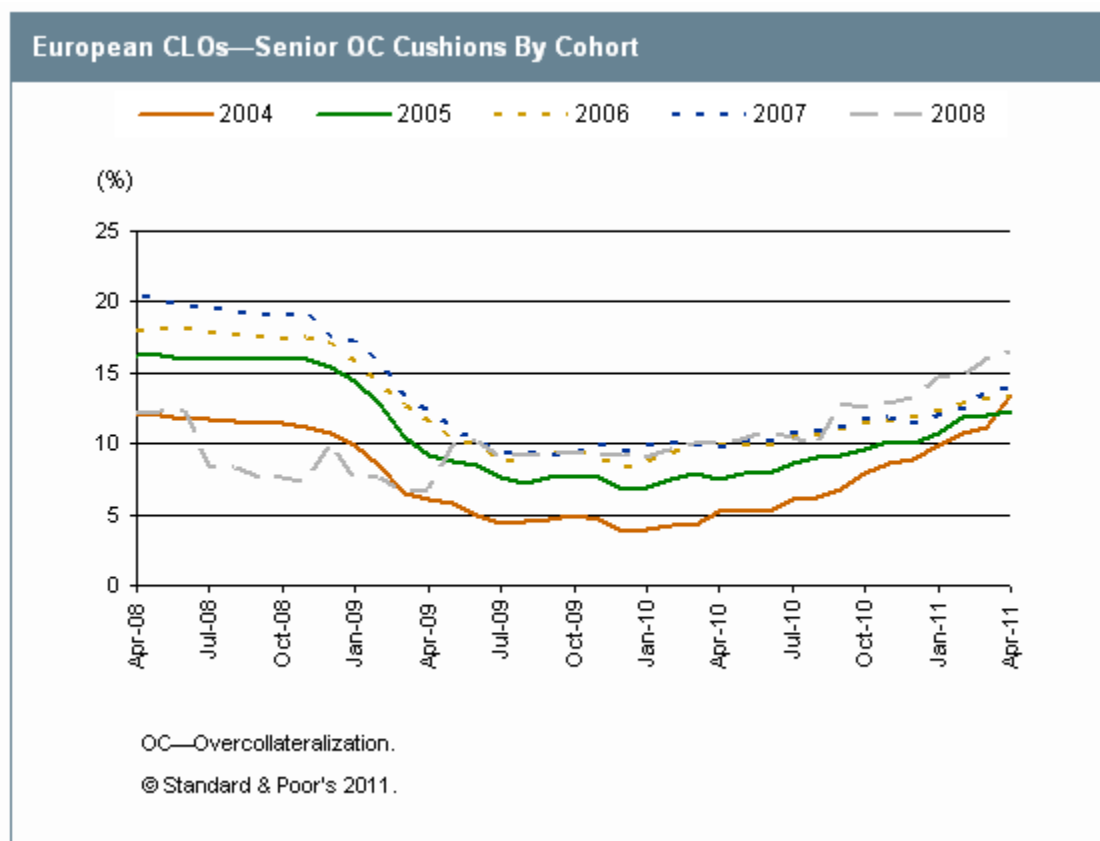
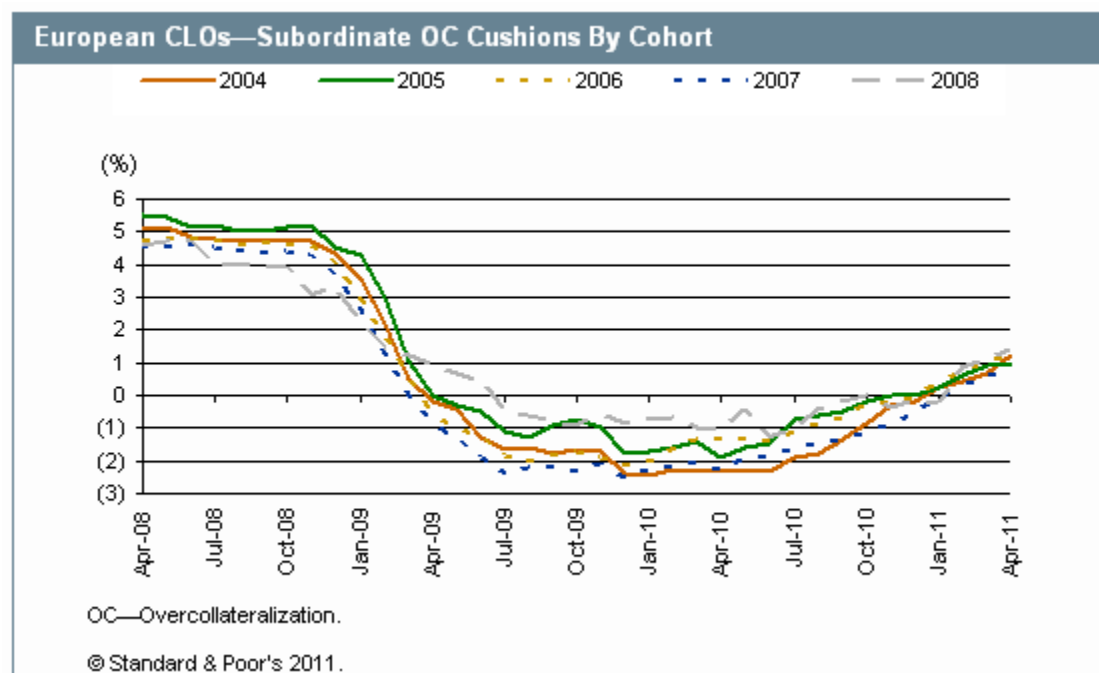


Chart 12



The improvements in OC test ratios for European CLOs, in our view, are primarily the result of transaction seasoning as CLOs exit their reinvestment periods, improvements in senior OC test cushions through deleveraging, and improvements in the underlying credit quality of CLO portfolios (particularly regarding the fall in 'CCC' and 'D' category rated assets).

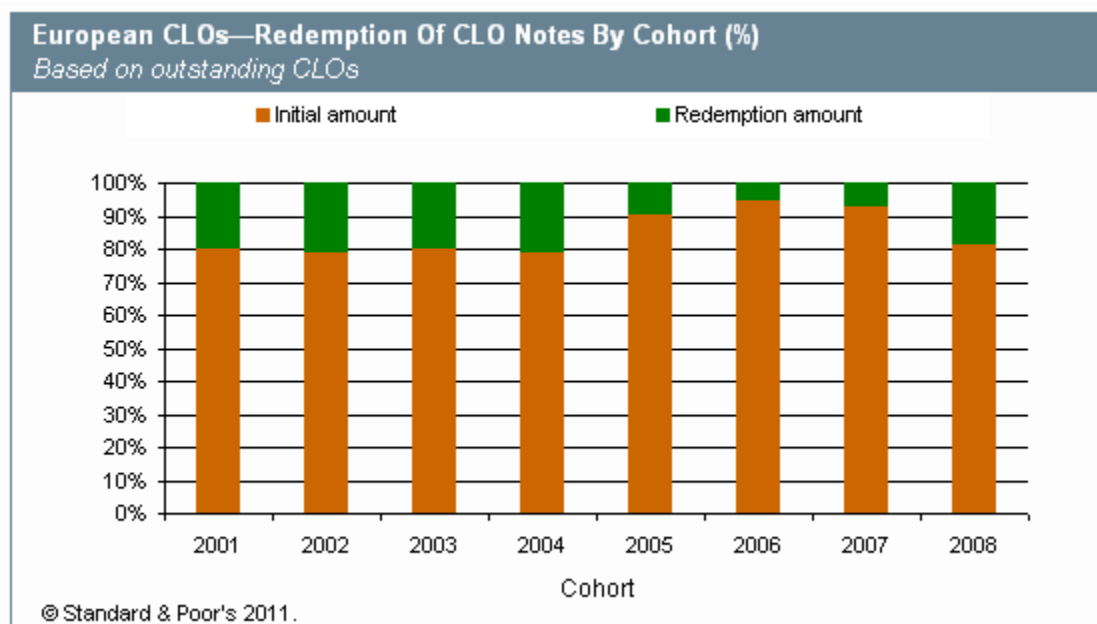
### CLOs exiting their reinvestment periods

As CLOs begin to exit their reinvestment periods, they enter a phase of amortization where noteholders are repaid principal in order of priority as governed by their transaction documents. At the end of 2010, 54 European cash flow CLOs that form our study are now in their amortization periods (which accounts for €15.5 billion of CLO portfolio notional at the end of 2010), with a further 22 Standard & Poor's-rated existing CLOs due to exit their reinvestment periods by the end of 2011 (equivalent to €10.65 billion CLOs by par amount).

### CLOs curing their coverage tests

Senior liabilities in CLO structures have deleveraged in an attempt to cure failing coverage tests. This has resulted in a reduction in the amounts of senior liabilities, and a subsequent fall in the denominator value of senior par coverage test calculations. As a direct consequence, the number of transactions failing their senior OC ratios has reduced significantly. In January 2011, only six European CLO transactions that form the European CLO Performance Index cohort 2004-2008 were failing their senior OC ratios, compared with 18 transactions in February 2010, and 21 transactions in December 2009. As of April 2011, only four CLOs covered by the European CLO Index are failing their senior OC tests.

Chart 13



### Reduction in 'CCC' category rated assets

The decline in a CLO's exposure to 'CCC' category rated assets has caused a fall in those assets that are carried at discounted values (above a predefined threshold) in the calculation of OC ratios (see chart 9 above). (For a detailed description, see "European CLOs 2008 Review—Declining Corporate Credit Quality Raises Questions About Future CLO Performance," published on March 20, 2009).

Above all, in our view the reductions in 'CCC' and 'D' category rated assets have been the most significant factors in improving OC ratios for European CLO transactions over the past three years. One way to consider the degree of this relationship is by considering the senior OC test cushions of each cohort against its respective 'CCC' and 'D' index average. For all cohorts, we document a strong inverse relationship between these variables over the past three years, where senior OC cushions experienced gradual improvements as the index average of 'CCC' and 'D' category rated assets fell.

Chart 14

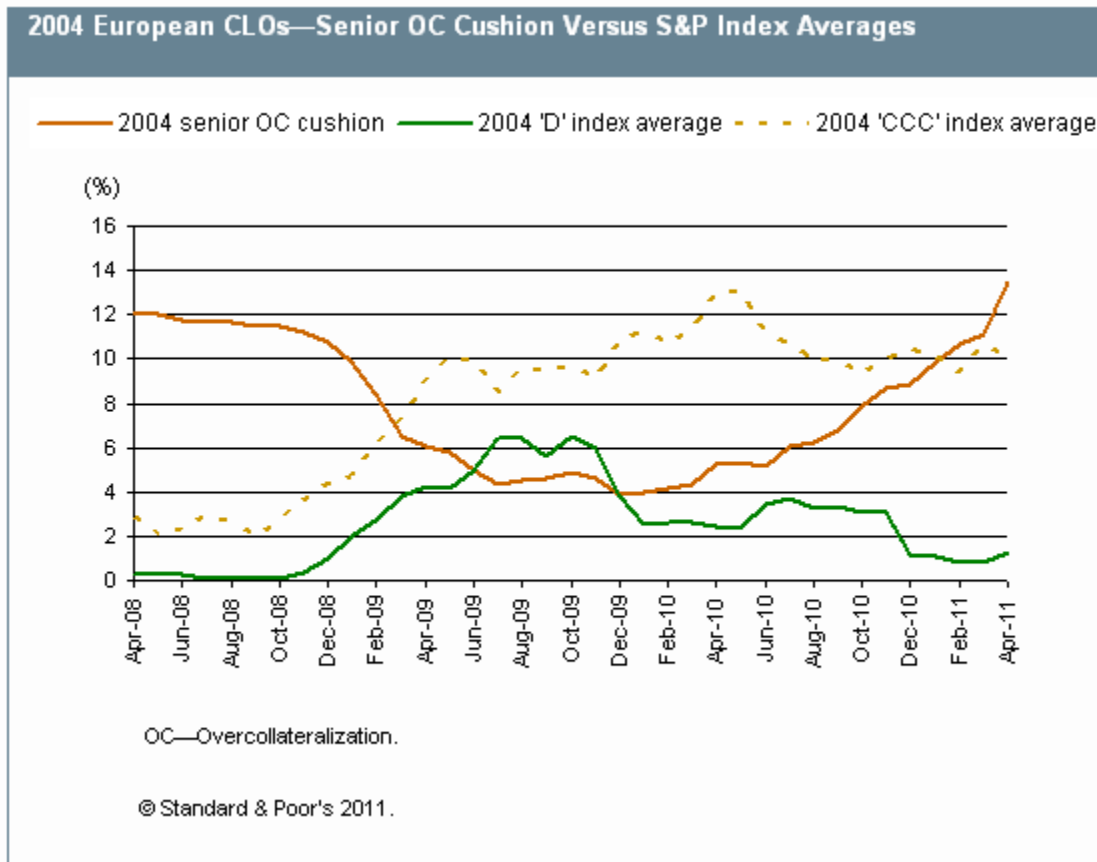


Chart 15

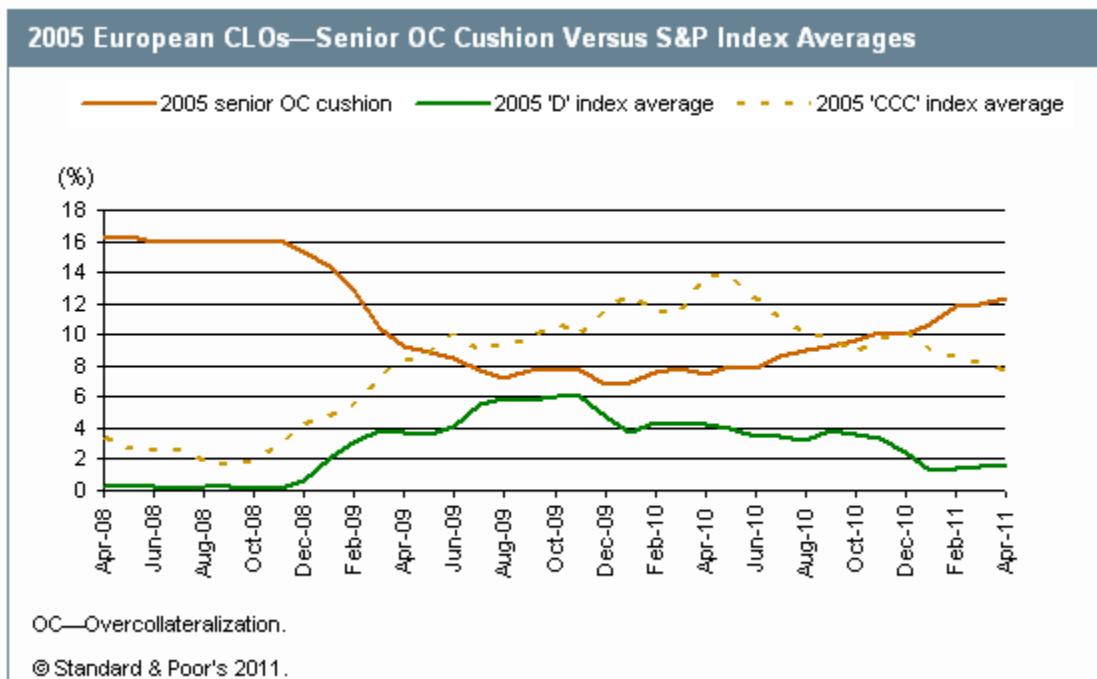


Chart 16

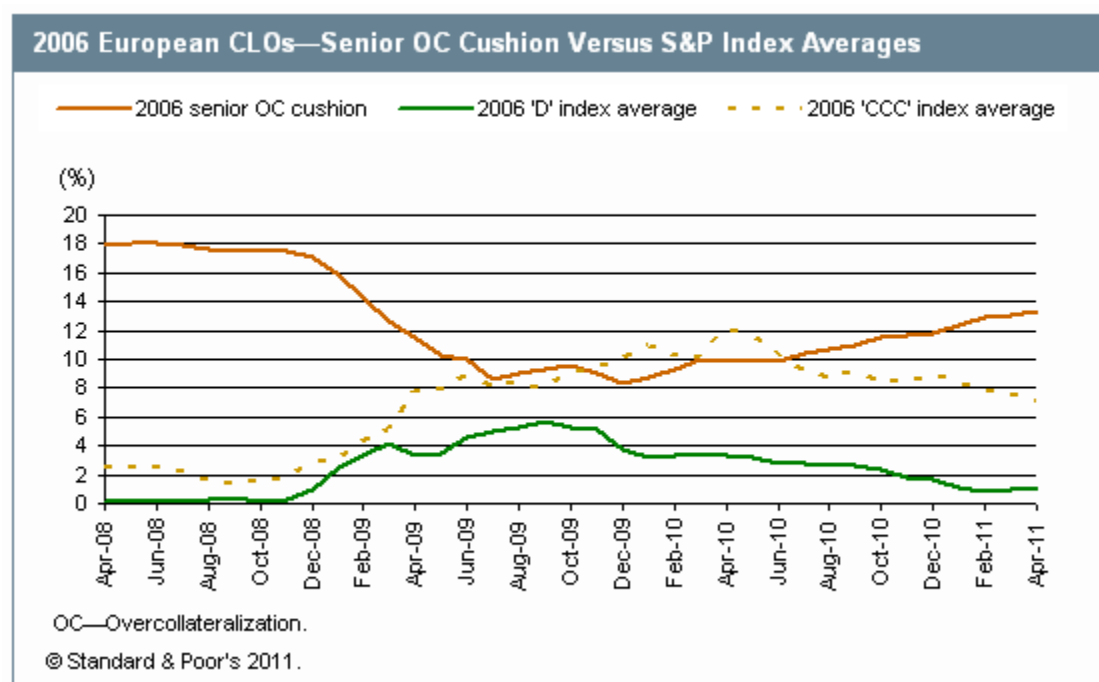


Chart 17

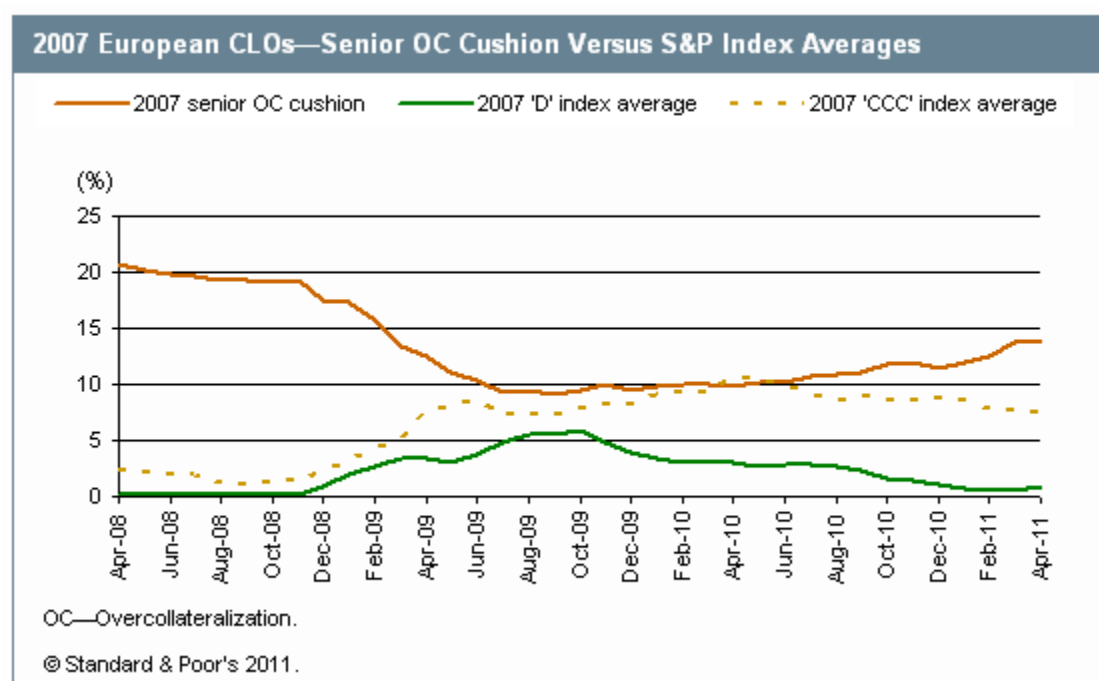
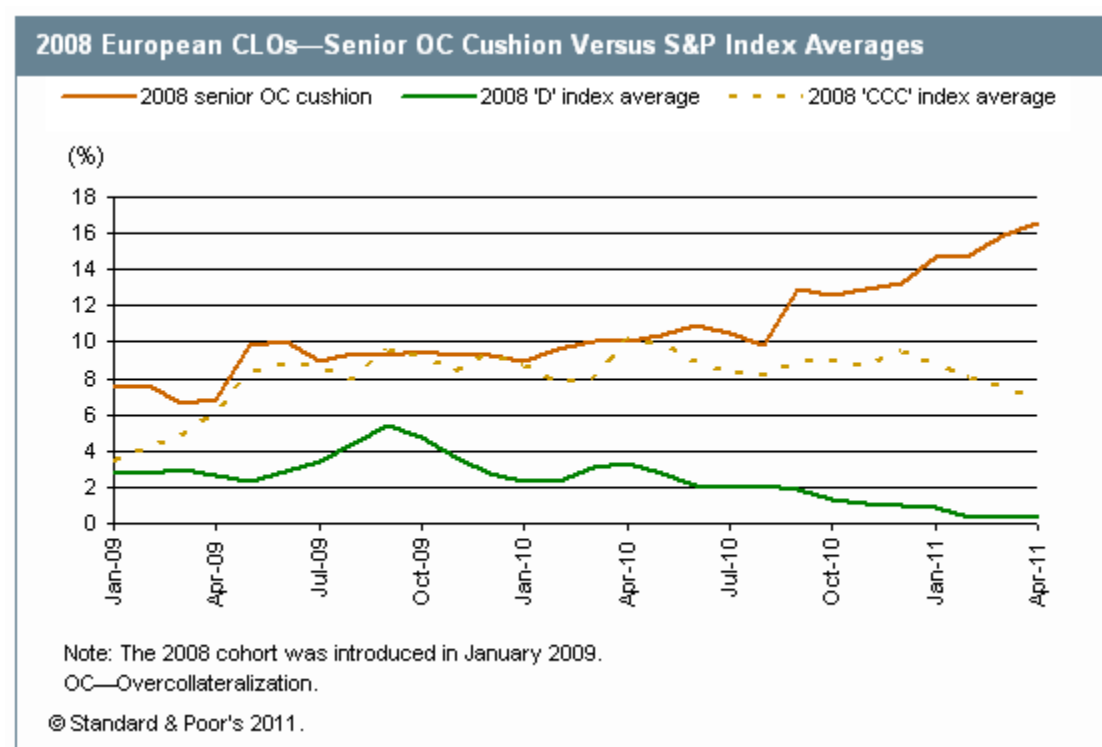




Chart 18



## Asset performance in CLOs

Asset performance data as of April 30, 2011—taken from the latest version of the European CLO Performance Index report.

Chart 19

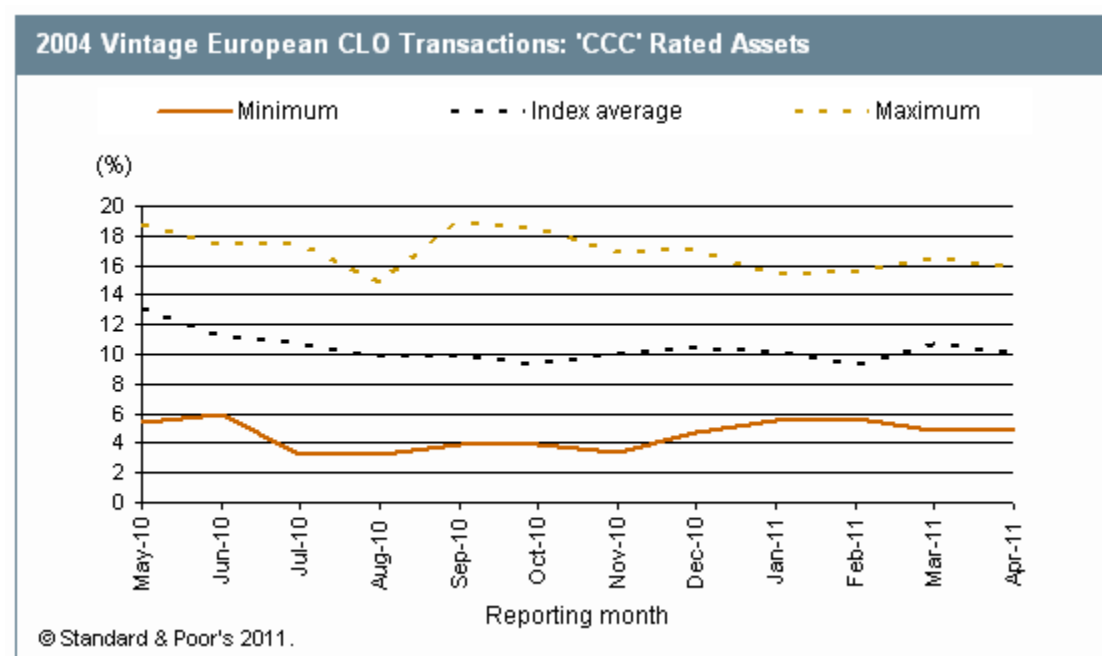


Chart 20

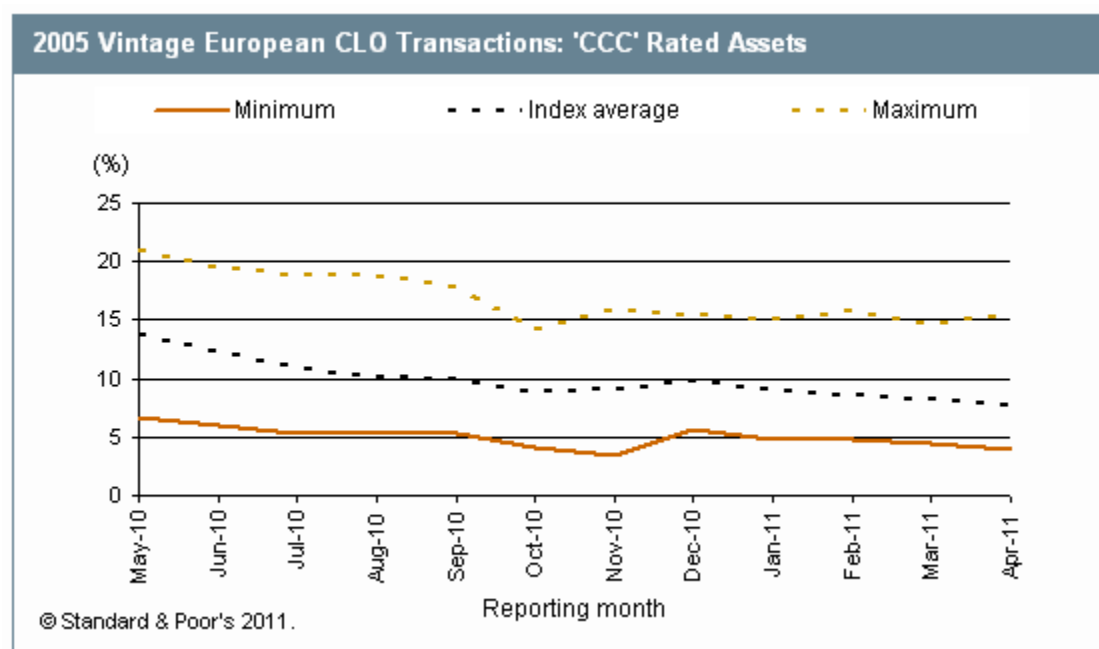


Chart 21

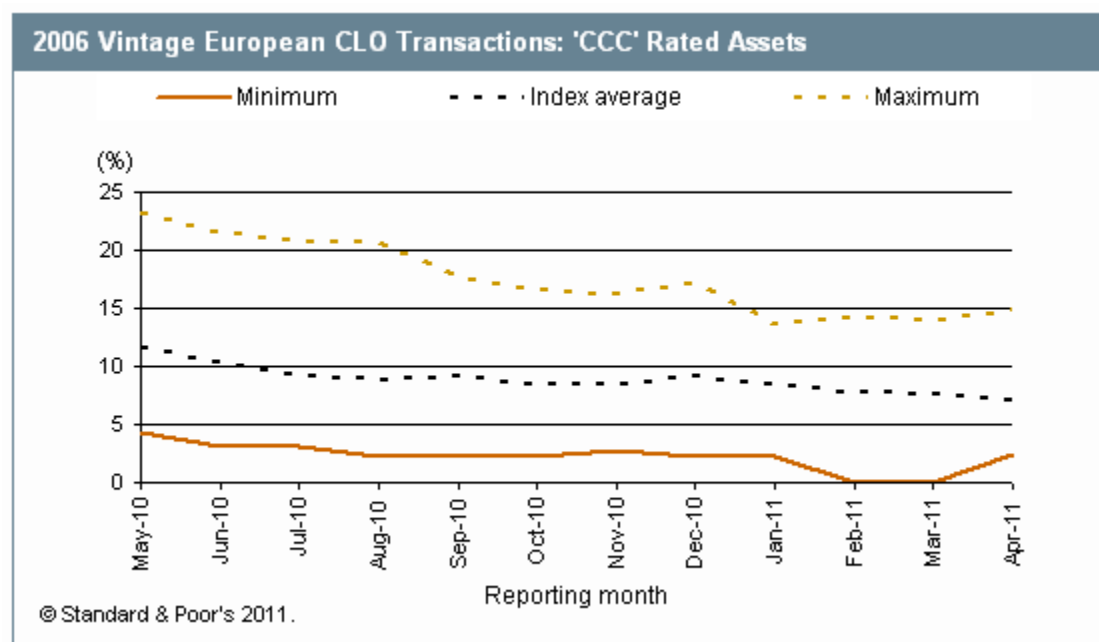


Chart 22

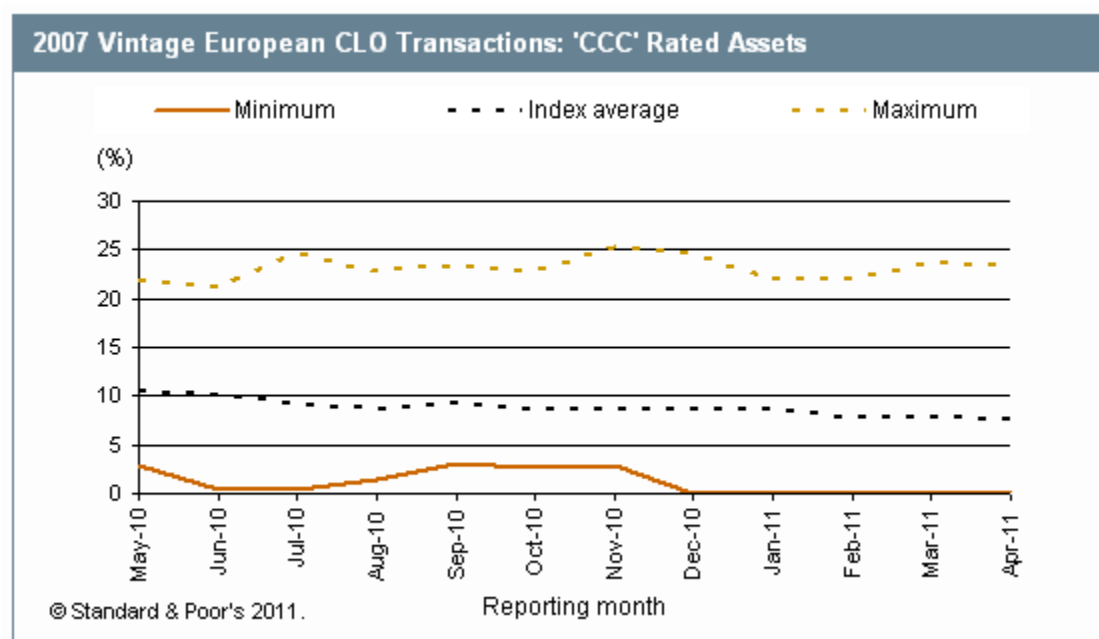


Chart 23

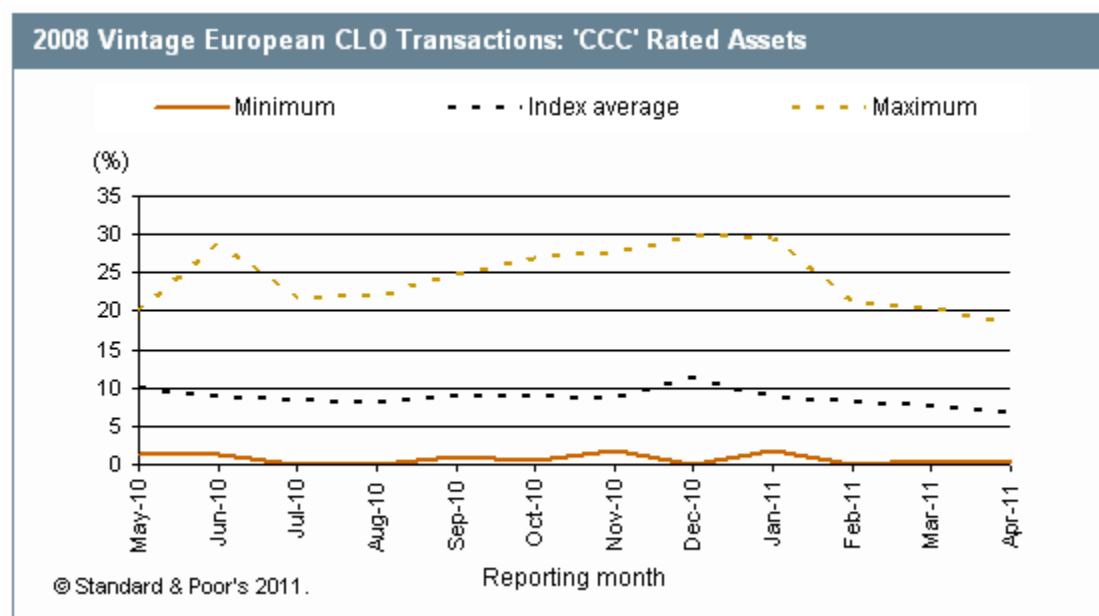


Chart 24

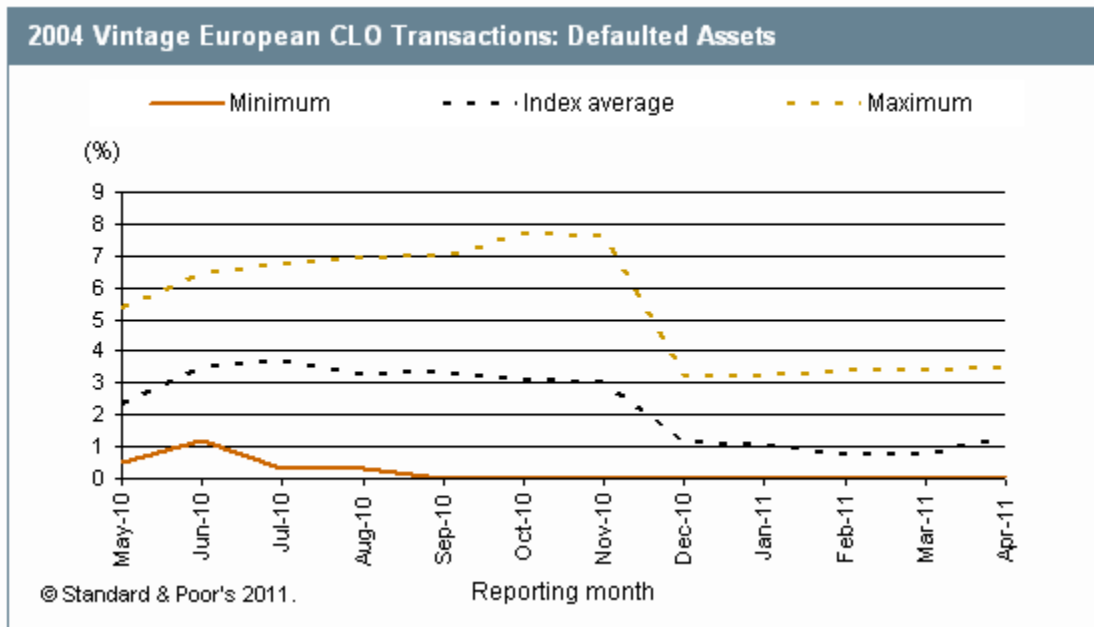


Chart 25

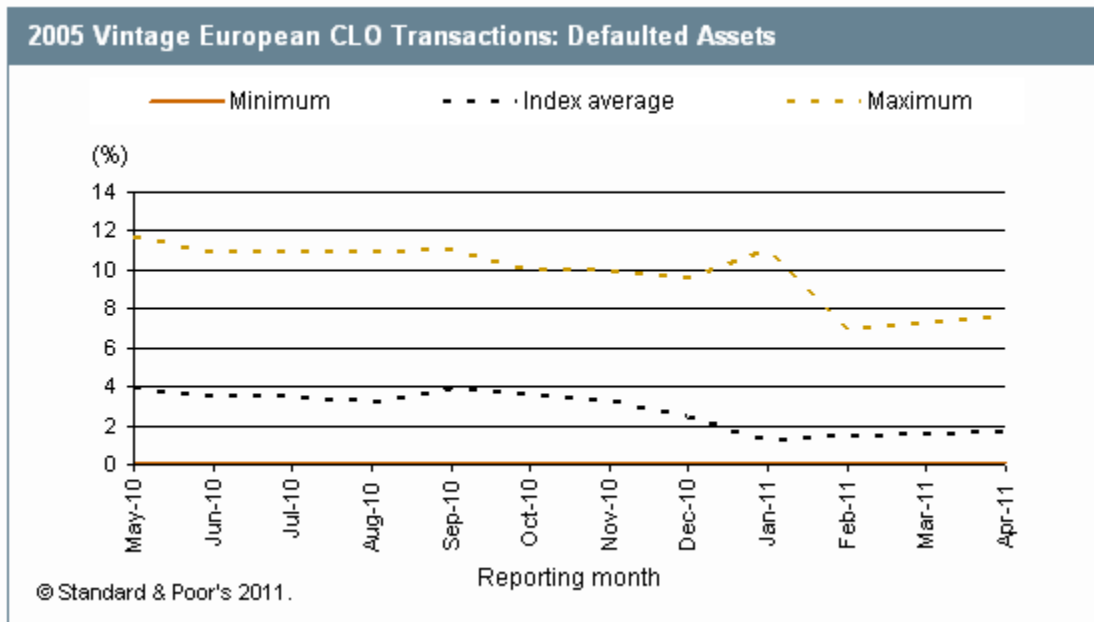


Chart 26

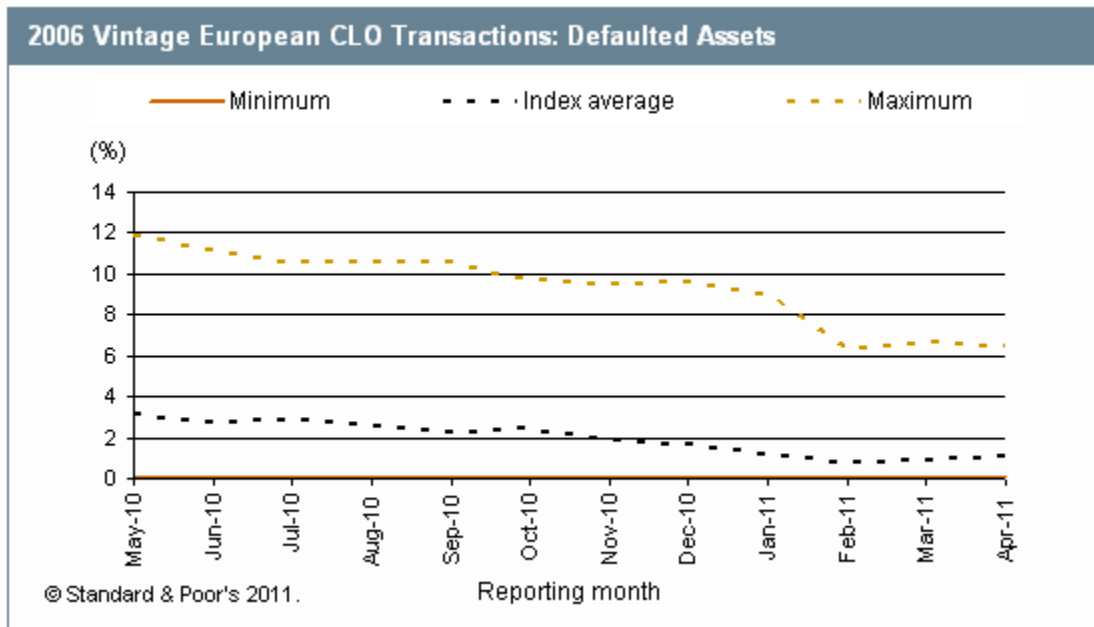


Chart 27

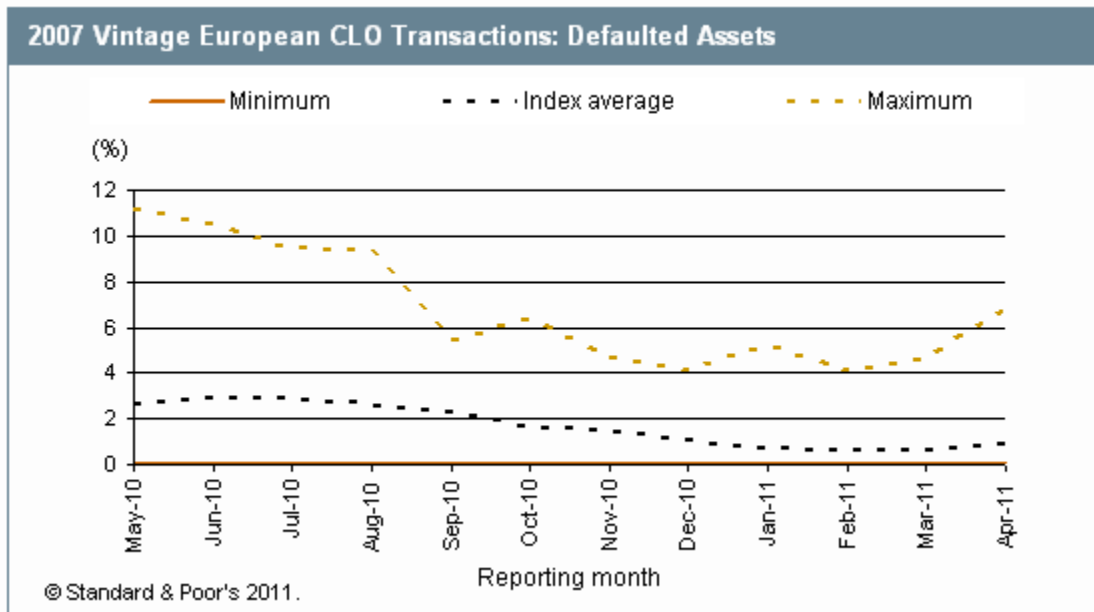


Chart 28

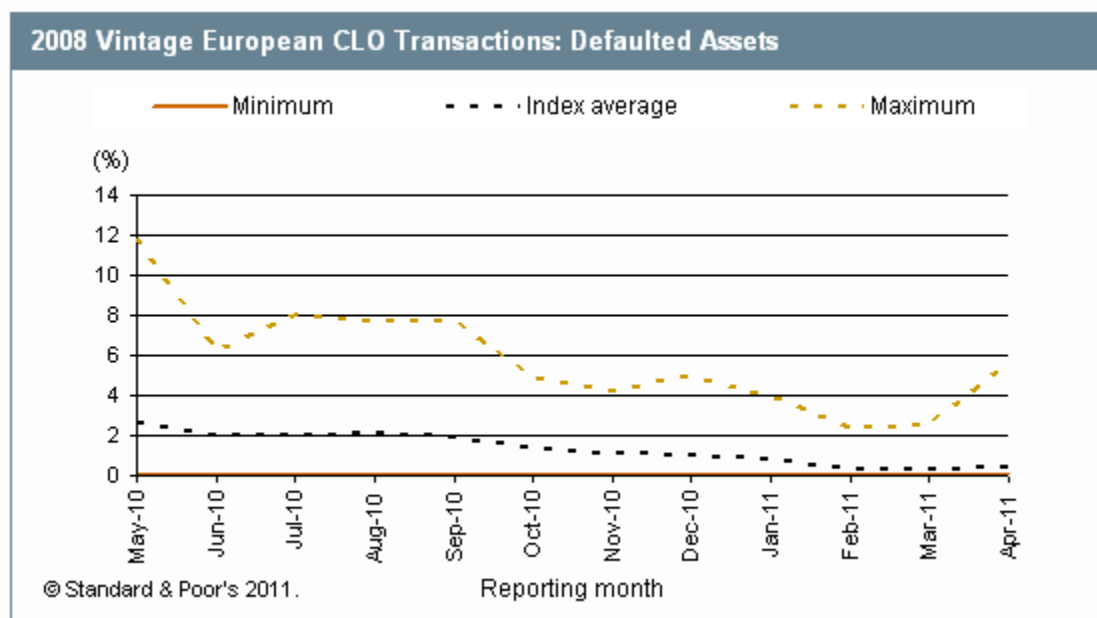


Table 2

2004 Vintage European CLO Transactions: Par Coverage Tests												
Reporting month	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11
Deals failing senior OC tests	1	0	0	0	0	0	0	0	0	0	0	0
Deals failing subordinate OC tests	6	6	7	8	8	8	6	6	4	3	4	1
<b>(% of senior tranches)</b>												
WA OC	123.3	123.03	124.13	124.33	124.81	125.96	126.73	126.93	127.9	128.76	129.21	131.64
WA required OC	117.92	117.8	118.05	118.06	118.05	118.09	118.09	118.05	118.06	118.08	118.07	118.17
<b>(% of subordinate tranches)</b>												
WA OC	100.65	100.72	101.67	101.79	102.24	102.74	103.23	103.38	103.8	103.99	104.2	104.77
WA required OC	103.52	103.55	103.59	103.57	103.58	103.58	103.56	103.58	103.57	103.57	103.55	103.54

OC—Overcollateralization. WA—Weighted-average.

Table 3

2005 Vintage European CLO Transactions: Par Coverage Tests												
Reporting month	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11
Deals failing sr. OC tests	1	1	1	1	1	0	1	0	0	0	0	0
Deals failing sub. OC tests	8	6	5	6	5	4	2	4	3	2	3	2
<b>(% of senior tranches)</b>												
WA OC	124	123.89	125.14	125.51	125.77	126.24	126.24	126.63	127.35	128.48	128.63	128.92
WA required OC	116.22	116.24	116.55	116.52	116.56	116.57	116.16	116.59	116.64	116.64	116.61	116.62
<b>(% of subordinate tranches)</b>												
WA OC	101.73	101.82	102.93	103.03	103.19	103.52	103.48	103.68	103.97	104.31	104.61	104.62
WA required OC	103.51	103.5	103.66	103.67	103.67	103.69	103.51	103.7	103.71	103.7	103.7	103.72

OC—Overcollateralization. WA—Weighted-average.

Table 4

2006 Vintage European CLO Transactions: Par Coverage Tests												
Reporting month	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11
Deals failing sr. OC tests	4	5	7	5	3	4	2	2	0	0	0	0
Deals failing sub. OC tests	27	30	30	26	22	20	20	18	16	14	11	11
(% of senior tranches)												
WA OC	129.89	129.69	130.15	130.20	130.62	131.31	131.21	131.64	132.19	132.89	133.04	133.11
WA required OC	119.65	119.49	119.70	119.77	117.35	119.83	119.75	119.84	119.88	120.04	119.92	119.78
(% of subordinate tranches)												
WA OC	102.80	102.95	103.19	103.40	103.63	103.88	103.98	104.14	104.55	104.89	105.21	105.36
WA required OC	104.21	104.18	104.20	104.21	104.20	104.21	104.21	104.20	104.20	104.20	104.19	104.20

OC—Overcollateralization. WA—Weighted-average.

Table 5

2007 Vintage European CLO Transactions: Par Coverage Tests												
Reporting month	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11
Deals failing sr. OC tests	6	7	7	6	5	7	7	6	5	4	3	2
Deals failing sub. OC tests	31	34	33	32	30	26	26	27	22	20	17	16
(% of senior tranches)												
WA OC	133.23	133.21	134.12	133.91	134.41	134.31	134.98	134.12	134.78	135.20	136.84	137.11
WA required OC	122.91	123.04	123.08	122.87	123.07	122.72	122.94	122.67	122.73	122.73	123.16	123.12
(% of subordinate tranches)												
WA OC	102.29	102.24	102.48	102.77	102.94	103.10	103.35	103.54	104.02	104.33	104.71	104.85
WA required OC	104.06	104.10	104.07	104.08	104.09	104.22	104.18	104.07	104.11	104.11	104.08	104.11

OC—Overcollateralization. WA—Weighted-average.

Table 6

2008 Vintage European CLO Transactions: Par Coverage Tests												
Reporting month	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11
Deals failing sr. OC tests	4	3	3	4	2	2	2	2	1	2	2	2
Deals failing sub. OC tests	4	5	4	4	4	4	3	4	2	2	2	2
(% of senior tranches)												
WA OC	136.89	137.25	136.86	135.65	138.40	139.65	140.40	140.10	140.39	141.66	142.81	143.50
WA required OC	126.37	126.35	126.42	126.56	125.48	127.14	126.87	126.89	125.83	126.87	126.86	126.93
(% of subordinate tranches)												
WA OC	108.34	107.53	107.86	108.45	108.67	108.82	110.02	108.65	108.30	109.75	110.02	110.34
WA required OC	108.77	108.85	108.84	108.85	108.86	108.85	109.91	108.85	108.57	108.90	108.90	108.93

OC—Overcollateralization. WA—Weighted-average.

## Appendix 4: Industry And Country Concentrations In European CLOs

In our data set, we analyzed the potential systemic maturity risk through industry sector concentrations, as defined by the industry codes in our CDO Evaluator credit model. Considering CLOs' underlying portfolios at the end of 2010, the underlying loans in our data set were just over 12% concentrated in the business equipment and services

industry, and the majority of these loans are set to mature at the beginning of 2015. That is, 23.4% of all loans—equivalent to €2.4 billion of the loans in the business equipment and services industry—are set to mature in 2015. Before then, €2.33 billion of loans in this sector are set to mature throughout 2014.

**Table 7**

European CLO Portfolio—Maturity Profiles Based On The Top 10 Industries			
At the end of 2010			
Industry	Aggregate exposure (bil. €)	Dominant year of maturity	Exposure (%)
Business equipment and services	10.27	2015	12.06
Health care	7.69	2015	9.03
Cable and satellite television	6.98	2014	8.19
Publishing	5.14	2015	6.04
Telecommunications	4.30	2014	5.04
Retailers (except food and drug)	4.19	2015	4.92
Leisure goods/activities/movies	3.90	2015	4.58
Chemicals and plastics	3.49	2014	4.09
Radio and television	3.48	2015	4.08
Food service	3.22	2015	3.78

**Table 8**

European CLO Portfolio—Industry Breakdown			
2008–2010			
Industry (%)	2008	2009	2010
Business equipment and services	10.23	11.13	12.06
Health care	8.15	8.62	9.03
Cable and satellite television	8.06	9.27	8.19
Publishing	6.82	6.72	6.04
Telecommunications	4.82	5.64	5.04
Retailers (except food and drug)	4.37	4.30	4.92
Leisure goods/activities/movies	4.61	4.39	4.58
Chemicals and plastics	6.37	5.47	4.09
Food service	3.29	N/A	3.78
Building and development*	3.95	3.82	N/A

\*In 2010, building and development accounted for 3.45% and was the 12th-largest industry exposure. N/A—Not applicable.

The second-largest concentration was in the health care industry. In total, corporate obligors identified in the health care industry accounted for just over 9% of the assets that collateralize European CLOs. In terms of the amount of debt falling due, €2.58 billion—or 33.6% of these obligors—is set to mature also in 2015.

In terms of geographical breakdown (again, as defined by the country codes in our CDO Evaluator credit model) in all years from 2008 to 2010 the U.K. bares the most significant concentration of loan maturities in European CLO portfolios. As of 2010, for instance, U.K. borrowers represented nearly 20% of loan maturities in CLOs. This is followed by France and Germany, which in total represented over 30% of loan maturities held by CLOs at the end of 2010.



Table 9

European CLO Portfolio—Geographical Breakdown			
2008–2010			
Country (%)	2008	2009	2010
U.K.	20.74	19.50	19.57
France	17.40	16.09	16.90
Germany	16.68	16.92	16.10
The Netherlands	9.45	11.10	11.13
U.S.	10.36	10.44	10.41
Spain	5.93	6.18	6.14
Denmark	4.21	4.72	4.51
Sweden	4.14	3.90	4.37
Italy	3.44	3.53	2.95
Ireland	2.93	2.70	2.83

Studying the loan maturity profile of each country indicates that all three economies (the U.K., France, and Germany) face the bulk of maturing loans from domestic borrowers in 2015. Just over one-quarter of U.K. borrowers are scheduled to repay their loans in 2015, compared with 30.77% for France and 33.83% for Germany (see table 12).

Table 10

European CLO Portfolio Maturity Breakdown Based On The Top Five Countries					
At the end of 2008					
	U.K.	France	Germany	U.S.	The Netherlands
Total portfolio amount (bil. €)	17.42	14.62	14.01	8.7	7.94
Year of maturity	Breakdown of each country's total (%)				
2009	0.12	0.02	0.34	0.36	0.00
2010	0.31	0.13	0.23	0.56	0.04
2011	5.90	0.18	3.31	1.46	0.28
2012	10.51	1.65	7.23	13.69	1.40
2013	19.46	12.11	15.09	21.43	19.87
2014	25.26	25.24	24.36	42.52	40.32
2015	22.13	33.04	29.20	14.59	22.58
2016	10.53	23.75	16.04	1.36	10.91
2017	3.94	3.04	3.21	3.20	4.14
2018	1.02	0.64	0.89	0.25	0.10
2019	0.00	0.00	0.00	0.05	0.00
2020+	0.83	0.19	0.09	0.54	0.35

Table 11

European CLO Portfolio Maturity Breakdown Based On The Top Five Countries					
At the end of 2009					
	U.K.	France	Germany	The Netherlands	U.S.
Total portfolio amount (bil. €)	16.80	14.57	13.86	9.56	8.99

Table 11

European CLO Portfolio Maturity Breakdown Based On The Top Five Countries (cont.)					
Year of maturity	Breakdown of each country's total (%)				
2010	0.06	0.10	0.00	0.03	0.00
2011	0.68	0.27	0.15	2.32	0.71
2012	4.76	3.51	0.08	0.95	4.06
2013	9.06	7.34	1.50	2.88	9.45
2014	17.28	17.54	10.34	16.96	19.92
2015	26.71	22.64	26.81	24.13	44.64
2016	23.62	29.17	33.14	22.73	13.39
2017	10.88	14.34	23.46	19.53	3.31
2018	4.34	3.77	3.44	10.15	3.41
2019	1.28	1.05	0.66	0.12	0.27
2020+	1.33	0.28	0.41	0.20	0.83

Table 12

European CLO Portfolio Maturity Breakdown Based On The Top Five Countries					
At the end of 2010					
	U.K.	France	Germany	The Netherlands	U.S.
Total portfolio amount (bil. €)	16.20	13.99	13.33	9.21	8.62
Year of maturity	Breakdown of each country's total (%)				
2011	1.96	0.04	1.08	1.50	4.70
2012	4.10	1.24	4.01	2.75	4.41
2013	18.83	11.20	8.13	14.24	13.70
2014	24.33	24.68	28.98	22.14	37.12
2015	25.70	30.77	33.83	20.72	21.08
2016	13.65	24.23	18.51	22.04	12.68
2017	8.64	6.20	3.56	14.04	4.89
2018	1.21	0.82	1.55	0.28	0.26
2019	0.05	0.09	0.16	1.43	0.27
2020+	1.52	0.73	0.19	0.86	0.89

## Related Criteria And Research

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- Western Europe's Speculative-Grade Default Rate Falls Back Below Its Long-Term Average—For Now, May 3, 2011
- Update To Global Methodologies And Assumptions For Corporate Cash Flow And Synthetic CDOs, Sept. 17, 2009
- European CLOs 2008 Review—Declining Corporate Credit Quality Raises Questions About Future CLO Performance, March 20, 2009
- The Use Of Rating-Based Haircuts In Event Of Default Overcollateralization Tests For CDOs, March 19, 2008
- An Introduction To CDOs And Standard & Poor's Global CDO Ratings, June 8, 2007

- Structured Finance Glossary Of Securitization Terms 2007, June 11, 2007
- Global Cash Flow And Synthetic Criteria, March 21, 2002
- European CLO Performance Index Report, published monthly

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