Total Return Swaps on Cash Corporate CDOs

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Claude Laberge
212-526-5450
claberge@lehman.com

Lorraine Fan
212-526-1929
lfan@lehman.com

OVERVIEW

We present the key features of total return swaps (TRS) on cash corporate CDOs and explore ways in which investors can benefit from them. Specifically, we:

- *discuss the advantages and disadvantages of derivatives on CDOs;*
- *illustrate the mechanics of TRS on corporate CDOs; and*
- *walk through TRS examples from long and short perspectives.*

WHY DERIVATIVES ON CDOS?

The emergence of two-way flows in derivatives on cash CDO tranches is a natural consequence of the massive improvement in liquidity in the secondary market over the past three years. Secondary offerings range from senior tranches of well-performing transactions to deeply distressed equity (or "equity-like" subordinated notes). Yet supply in a pure "cash" format remains tight relative to demand, leading trading desks to offer synthetic exposure to cash CDOs. Another important driver of these trades is from investors looking to short CDO tranches for hedging purposes or other strategies. Active derivative participants include CDS users for negative basis trades for non-PIKable tranches, as well as hedge funds and proprietary trading desks which employ TRS to replicate the economics of PIKable tranches. The volume of these trades since the early 2000s has reached the billions. The benefits and drawbacks of these types of trades are summarized below.

Advantages

- Alleviate the shortage of cash bonds for investors with constructive views on individual securities or the market.
- Avoid the need to source underlying bonds, thus removing the restriction on size.
- Allow long/short strategies for hedging, capital arbitrage, and relative value trades.
- Provide a means to lock in profits.
- Allow investors to benefit from more efficient funding and higher leverage.
- Customize trades to fit specific needs (e.g., reducing bond premium by lowering coupon and creating credit-linked notes for CDO^2s).

Disadvantages

- Require ISDA for both counterparties.
- Currently lack standard documentation—may raise liquidity concerns, though this should diminish over time as the market expands and documentation becomes more standardized.
- Lack voting rights associated with underlying securities, though contracts can incorporate terms to transfer these rights, or derivative investors may choose to count on the likelihood that their interests are aligned with those of their cash counterparts.

- Involve greater counterparty risks.
- Are not rated, but ratings can be "looked through" to the underlying CDO tranches or obtained through CLNs; nonetheless, the fixed costs of the latter may override the economics for small trades.

"PIK" YOUR EXPOSURE: TRS VERSUS CDS ON CORPORATE CDOs

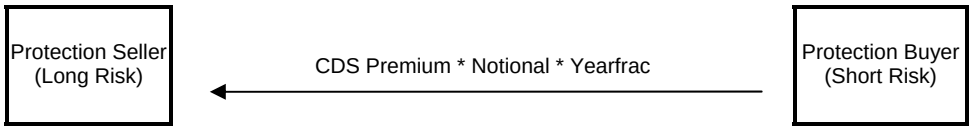
We recommend the use of TRS to replicate the economics of cash CDO securities, while CDS are more suitable for non-PIKable tranches than for PIKable tranches in buying or selling protection.

This article focuses on TRS for corporate CBO and CLO tranches. With several dealers active in the derivatives sector, there are many variations in documentation, such as CDS for PIKable tranches, hybrids between TRS and CDS, and pay-as-you-go (PAUG) contracts. However, we have chosen to concentrate on TRS because of their particular ability to mimic the economics of the underlying cash securities. We will first explain the mechanics of the type of CDS that is prevalent for buying and selling protection on non-PIKable tranches in a manner familiar to many corporate credit investors. These CDS have been especially popular in negative basis trades of Aaa tranches, in which monolines sell protection and balance-sheet funders buy protection. We will then discuss why these non-PAUG CDS are not as suitable for PIKable tranches before moving on to the mechanics of TRS and how this format can be applied even in a PIKable context.

CDS Mechanics

As in the case of single-name corporate CDS, the protection seller of the underlying CDO tranche receives a recurring premium from the protection buyer. These trades are typically done in unfunded form and amortize with the reference securities.

Figure 1. CDS Mechanics



The failure to pay timely interest or principal is a credit event in CDS and triggers physical settlement.

Credit events include the failure to pay timely interest or principal and bankruptcies (but bankruptcies are usually irrelevant to CDOs). Most protection buyers own the reference CDO tranches, making physical settlement the common practice. The protection buyer delivers the cash bond and receives par from the protection seller. Only the security specifically referenced, as opposed to any pari passu or senior tranches, can be delivered.

Closing CDS Trades

To close the trade, either side can unwind it with the original counterparty at market spread or go into an offsetting trade with a third party. If not closed before, the trade terminates with the earlier of the full redemption date (including a refinancing event) or the legal final maturity of the cash security.

Why Not for PIKable Tranches

In the context of PIKable tranches, we prefer TRS to CDS. The treatment of deferred interest (PIK) varies from CDO to CDO; for instance, some add it to the tranche notional and others do not. In contrast to TRS, which looks through to the actual payout of a PIKable reference tranche, CDS may encounter a messy scenario when determining the factor and cause operational headaches, especially when the non-payment of interest is defined as a credit event in the synthetic trade.

TRS Mechanics

TRS PIKs when the underlying tranche PIKs.

For a PIKable tranche, TRS captures the full spectrum of cash flow disruptions that can occur during the security's lifetime. Again, TRS are meant to replicate the experience of buying (or shorting) the reference CDO tranche. If the underlying security PIKs, the TRS payer defers interest by the same ratio and the receiver faces a reduction in distribution. If this deferred interest is later cured, the TRS payer adds this amount to the scheduled payment.

Funded versus Unfunded TRS

A funded trade involves an upfront payment, while an unfunded trade does not.

TRS can be done in either a funded or an unfunded format. To receive the cash flows of the underlying security, the total return receiver can enter a contract by paying an upfront price in a funded trade or a running funding rate as a fraction of the trade price in a so-called unfunded trade (funding can be obtained from the counterparty or a third party). In the latter case, the receiver will be charged a haircut, which affects the party's leverage. Another difference is that when the cash security amortizes, the party will receive the redemption price in a funded trade and the difference between the redemption price and the trade price in an unfunded trade. In summary, in an unfunded trade, the trade price is reflected in 1) the cost of funding, 2) amortization of the reference security, and/or 3) the unwinding of the trade (see below).

Figure 2. Funded TRS Mechanics

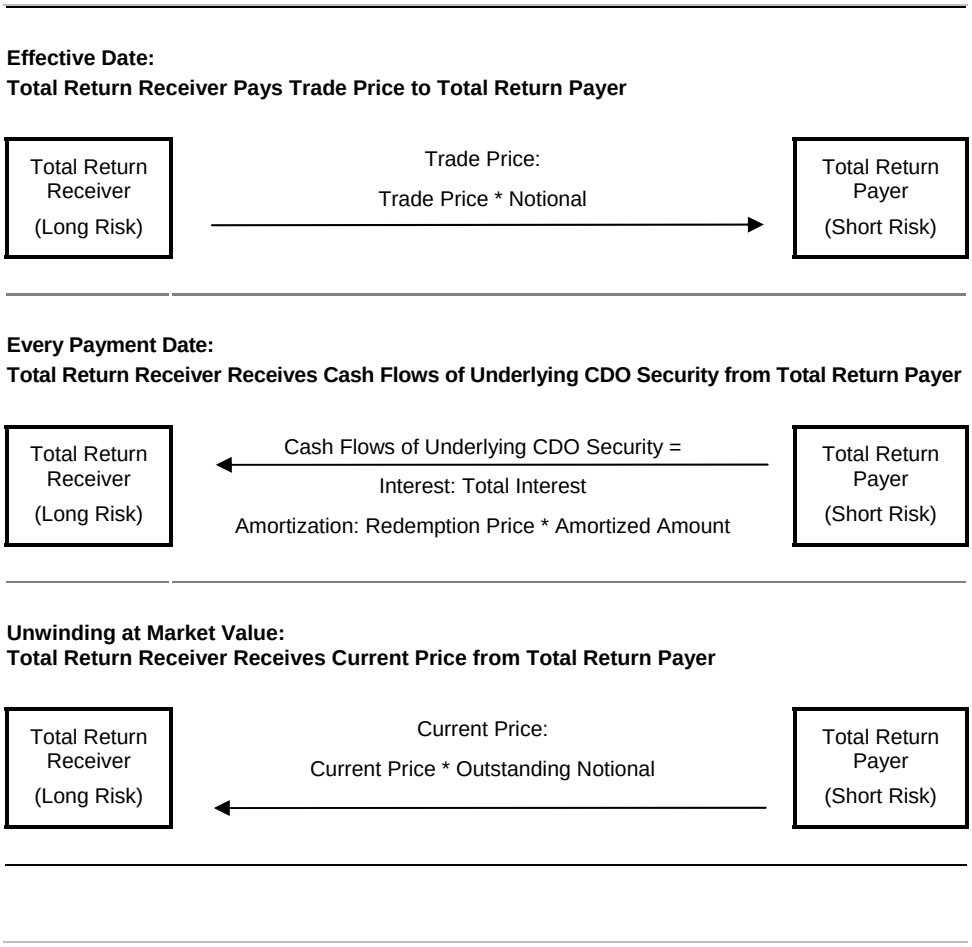
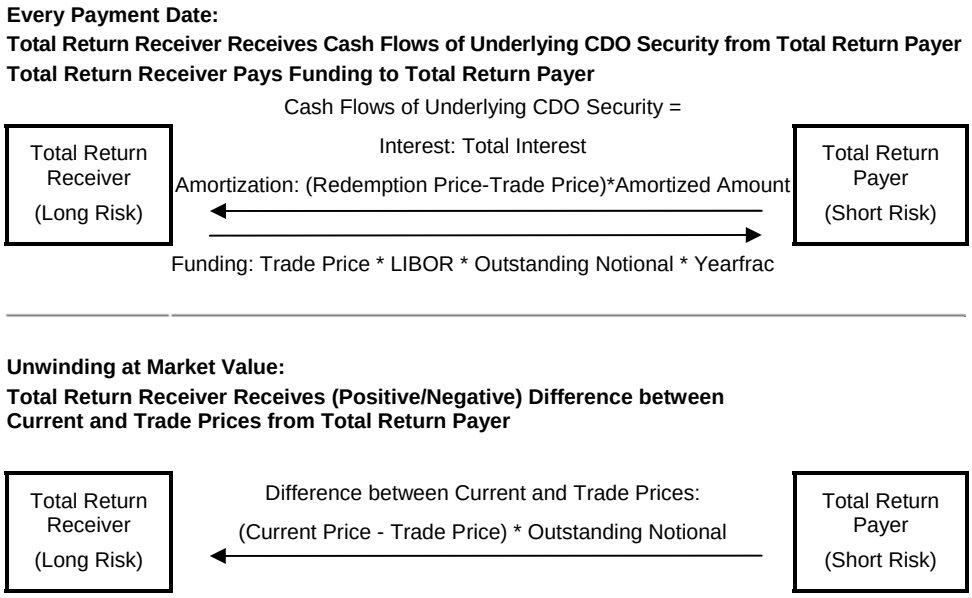


Figure 3. Unfunded TRS Mechanics



Assume funding rate at LIBOR with TRS counterparty.

Closing TRS Trades

The total return payer holds the option to put the underlying security to terminate the trade.

Similar to a CDS, a TRS can be closed by unwinding at market value or by entering an offsetting trade. In an unfunded trade, the unwinding resembles a principal paydown, except that the amount exchanged is the difference between the current price and the trade price, rather than the difference between the redemption price and the trade price. Again, if the position is not closed, the trade ends with the earlier of the full redemption date or the legal final maturity of the cash security. In addition, the total return payer holds the option to put the underlying security to the total return receiver with a strike at the inception price to terminate the trade.

TRS on CDO Equity

The TRS mechanism can be extended to CDO equity tranches as well, despite the absence of stated coupons/spreads. Each equity payment flows through to the total return receiver. Derivative trades simply abide by the differences between cash debt and equity tranches. First, the reference equity piece is not given principal payments prior to the termination of the underlying CDO. Second, equity receives the portfolio liquidation value remaining after paying down all debts and expenses, instead of being repaid at face value like a debt tranche (given sufficient funds).

SOURCING CASH CDOS WITH TRS: AN EXAMPLE

We have pointed out how derivatives allow investors to gain exposure to tranches that are either not available in the market or in insufficient supply. We will now illustrate a straightforward unfunded example of a CLO tranche that is redeemed at par when the deal is called.

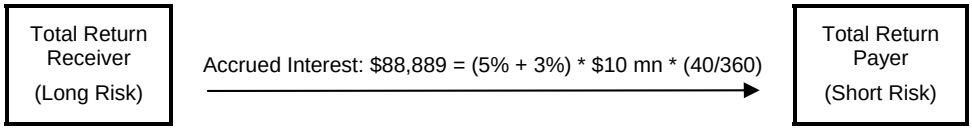
Figure 4. Receiving Total Return of a Hypothetical Mezzanine Tranche of a High Yield CLO

Reference Security and Trade Information	
Reference Security Coupon	3-month LIBOR + 300 bp
Reference Security Vintage	2003
Reference Security Rating	Baa2/Baa2
Reference Security Payment Dates	January, April, July, October
Reference Security Notional	$16 million
Trade Notional	$10 million
Trade Price	101.4% (discount margin = L + 195 bp to call)
Trade Date	May 22, 2006 (effective = T+3)
Trade Maturity	Legal final of reference security in 2015
Day Count Convention	Actual/360

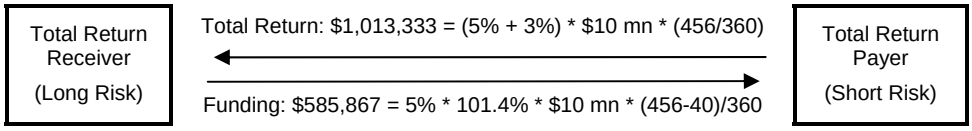
Suppose the reference bond makes all interest payments on time and is fully redeemed on its first call date. The total return receiver obtains funding at LIBOR from the total return payer. For simplicity's sake, assume that 6-month LIBOR stays at 5.0% for the life of the trade and that the underlying CDO tranche does not make any principal payments until the end.

Events	
May 25, 2006	Trade is settled at the price of 101.4%; tranche is current on all interest
July/Oct 15, 2006; Jan/Apr/Jul 15, 2007	Reference security makes scheduled interest payments
October 15, 2007	Reference security makes scheduled interest payment and is fully redeemed at par

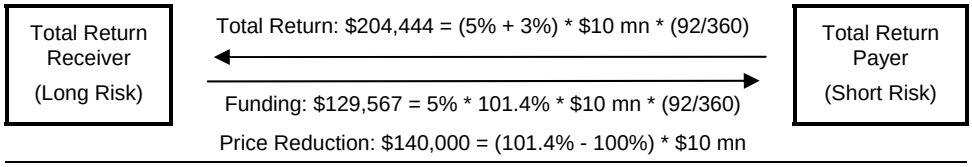
Effective Date – May 25, 2006:
Total Return Receiver Pays $88,889 of Accrued Interest to Total Return Payer



Payment Dates – July/October 15, 2006; January/April/July 15, 2007
Total Return Receiver Receives $1,013,333 Cash Flows of Underlying CDO Security from Total Return Payer
Total Return Receiver Pays $585,867 of Funding to Total Return Payer
Net: Total Return Receiver Receives $427,467 from Total Return Payer



Call – October 15, 2007:
Total Return Receiver Receives $204,444 Interest from Total Return Payer
Total Return Receiver Pays $129,567 of Funding to Total Return Payer
Total Return Receiver Pays $140,000 of Reduction to Current Price (Call at Par) from Trade Price to Total Return Payer
Net: Total Return Receiver Pays $65,122 to Total Return Payer



Total Return Receiver's P&L	
Total Return on Reference Security	$1,128,889
Funding	($715,433)
Price Change	($140,000)
Total	$273,456

The total return receiver makes 2.73% off a $10 million notional over 17 months, or 1.97% on an annualized basis. Suppose the receiver is subject to a 20% haircut and receives interest payments at LIBOR for the collateral posted. The return on equity then comes out to be $(273,456 + 141,111) / $2,000,000 = 20.73%, or 14.92% on an annualized basis.

SHORTING CASH CDOS WITH TRS: AN EXAMPLE

Another obvious advantage of the development of cash CDO derivatives is the ability to go short in order to hedge or to express directional views on selected securities and/or for macro reasons. Risk factors include asset default/recovery prospects, interest compression, deal call probability, and interest rate outlook (in relation to fixed-floating hedge swaps in CBOs). Investors may also elect to go short to hedge their exposure to other CDO tranches.

The TRS payer is responsible for the actual payout of the underlying tranche, rather than the discount margin based on the price of the TRS trade.

In this section, we walk through a hypothetical example of shorting a mezzanine tranche of a high yield CBO using TRS in unfunded format. The total return payer's gain/loss depends most heavily on the difference between the trade and exit prices, and investors should analyze how much this difference may surpass or fall below the cost of the carry. It is important to note that, since the total return receiver should go through the same experience as the cash bond holder, the total return payer is responsible for the actual payout of the underlying tranche, rather than the discount margin based on the price of the TRS trade. The stated coupon of the underlying tranche can fall well below the discount margin for a security trading below par.

Figure 5. Shorting a Hypothetical Mezzanine Tranche of a High Yield CBO

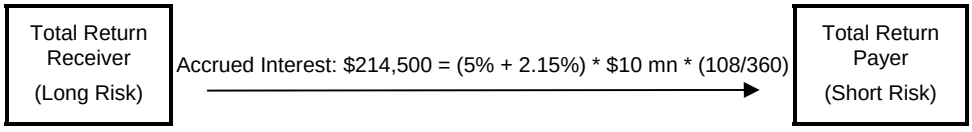
Reference Security and Trade Information	
Reference Security Coupon	6-month LIBOR + 215 bp
Reference Security Vintage	2000
Reference Security Rating	Baa2/Baa2
Reference Security Payment Dates	June, December
Reference Security Notional	$10 million
Trade Notional	$10 million
Trade Price	94.5% (discount margin = L + 330 bp to maturity)
Trade Date	March 21, 2006 (effective = T+3)
Trade Maturity	Legal final of reference security in 2012
Day Count Convention	Actual/360

Suppose the reference bond is current on interest payments. After the trade becomes effective, it misses the second payment. Then interest on the original notional and interest on the deferred interest are paid in full on the third payment date, though the PIK remains uncured. In addition, the TRS payer decides to unwind the trade after 16 months with a 4% drop in price. Again, the total return receiver obtains funding at LIBOR from the total return payer. Assume that 6-month LIBOR stays at 5.0% for the life of the trade and the underlying CDO tranche does not make any principal payments.

Events	
March 24, 2006	Trade is settled at the price of 94.5%; tranche is current on all interest
June 6, 2006	Reference security makes scheduled interest payment
December 6, 2006	Reference security misses scheduled interest payment
June 6, 2007	Reference security pays interest on original notional and interest on deferred interest; PIK remains uncured
July 13, 2007	Trade is unwound at the price of 90.5%

Effective Date – March 24, 2006:

Total Return Receiver Pays $214,500 of Accrued Interest to Total Return Payer

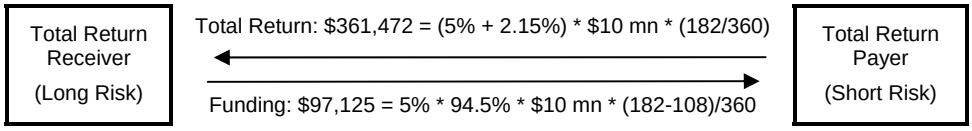


Payment Date – June 6, 2006

Total Return Receiver Receives $361,472 Cash Flows of Underlying CDO Security from Total Return Payer

Total Return Receiver Pays $97,125 of Funding to Total Return Payer

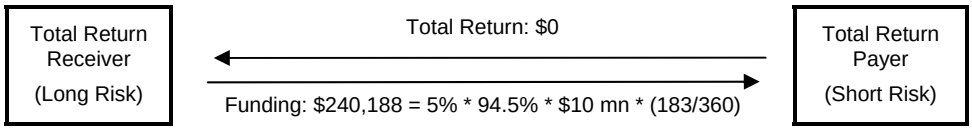
Net: Total Return Receiver Receives $264,347 from Total Return Payer



No Interest Payment – December 6, 2006:

Total Return Receiver Receives Zero Cash Flows of Underlying CDO Security from Total Return Payer

Total Return Receiver Pays $240,188 of Funding to Total Return Payer

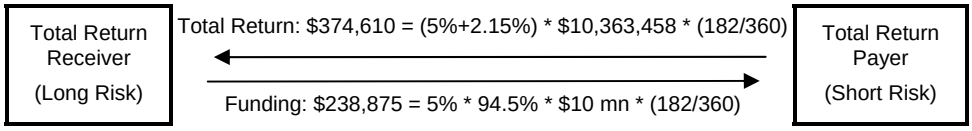


Payment Date – June 6, 2007

Total Return Receiver Receives $374,610 of Cash Flows of Underlying CDO Security ($361,472 on Original Notional for Current Interest Period + $13,138 for Interest on Deferred Interest) from Total Return Payer

Total Return Receiver Pays $238,875 of Funding to Total Return Payer

Net: Total Return Receiver Receives $135,735 from Total Return Payer



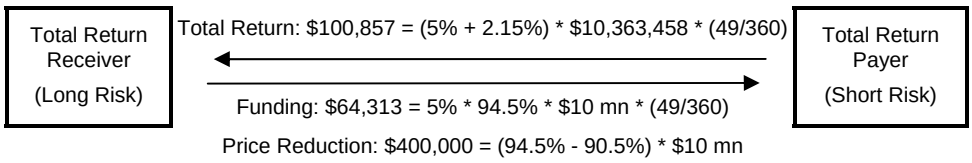
Unwind – July 25, 2007:

Total Return Receiver Receives $100,857 of Interest from Total Return Payer ($97,319 on Original Notional + $3,537 on Deferred Interest)

Total Return Receiver Pays $64,313 of Funding to Total Return Payer

Total Return Receiver Pays $400,000 of Reduction to Current Price from Trade Price to Total Return Payer

Net: Total Return Receiver Pays $363,456 to Total Return Payer



Total Return Payer's P&L	
Total Return on Reference Security	($622,439)
Funding	$640,500
Price Change	$400,000
Total	$418,061

The total return payer makes a 4.18% total, or 3.13% annualized, profit off a $10 million notional over 16 months. Certainly, the return to capital increases with leverage, which depends on haircut agreements and internal reserve requirements.

A QUICK LOOK AT PAY-AS-YOU-GO CDS

The adaptation of the standard confirmation for CDS on ABS to establish a contract for PAUG CDS on CDOs is currently in progress by ISDA and a working group of dealers.

The adaptation of the standard confirmation for CDS on ABS[1] to establish a contract for PAUG CDS on CDOs is currently in progress by ISDA and a working group of dealers. The documentation is expected to be finalized by the summer. PAUG CDS are similar to the CDS and TRS we have presented earlier in some ways but distinguish themselves in a number of other ways. We will briefly go over the key differences now and explore further in upcoming reports.

As opposed to CDS which terminate a trade upon the occurrence of a credit event, as the name suggests, PAUG CDS grant the protection buyer a choice between continuing the trade and settling physically in part or in full. Credit events include the failure to make timely interest or principal payments; implied writedown based on overcollateralization and distressed rating downgrades are optional terms.

A major distinction between this prospective PAUG standard and the TRS format we illustrated earlier is the responsibility of the protection seller in an interest shortfall, which is determined by whether the contract adopts the fixed-cap (capped at CDS premium), variable-cap (capped at LIBOR + CDS premium), or no-cap structure (full shortfall). Interest shortfall can be reversed later, which implies that a payment from the protection buyer to the protection seller is possible. In contrast, for TRS, if interest payment is deferred, the total return receiver does not receive any payment from the payer; and when the PIK of the underlying security is cured, the total return receiver simply receives the same amount from the payer.

The existing template inherits most of its features from CDS on ABS, therefore corporate investors may find themselves unfamiliar with the workings of PAUG CDS. We believe it is in investors' interest to keep the mechanics of derivatives simple to avoid burdening CDO analysis, which is intricate in itself, with an extra layer of complexity.

[1] *See ABS Credit Default Swaps – A Primer, Covey, Kazarian et al., December 2005.*

Figure 6. Comparison of CDS and TRS on Corporate CDOs and Pay-As-You-Go CDS

	CDS on Corporate CDOs	TRS on Corporate CDOs	PAUG CDS (Pending)
Tranche Type	Non-PIKable	PIKable and Non-PIKable	PIKable and Non-PIKable
Return	Insurance Premium	Total Return of Reference Security	Insurance Premium
Treatment of Failure to Make Scheduled Interest Payments	Physical Settlement	PIKs with Reference Security	Depends on Cap Structure Interest Shortfall is Reversible
Credit Events	Failure to Make Timely Interest or Principal Payment	N/A	Failure to Make Timely Interest Payment or Principal Payment [Implied Writedown] [Distressed Rating Downgrade]
Typical Settlement	Physical	N/A	PAUG (Option to Physically Settle)
Deliverable Obligation	Reference Security	Reference Security	Reference Security
Trade Termination	Market Value Full Redemption/Maturity Credit Event	Market Value Full Redemption/Maturity TRS Payer Exercises Put Option	Market Value Full Redemption/Maturity Credit Event Occurs and Protection Buyer Exercises Put Option for Settlement

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