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**Further Observation on the Credit Default Swap Basis: an illustration  
of the impact of supply and demand in the structured finance market**

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## **Further Observation on the Credit Default Swap Basis: an illustration of the impact of supply and demand in the structured finance market**

The credit default swap (CDS) basis is the difference between the price of a CDS and the yield spread of the same reference asset in the cash markets, generally given by the asset-swap price (ASW). In Choudhry (2001) we noted that while the theoretical case can be made as to why the CDS price should be equal to the ASW price, market observation tells us that this is not the case. The difference in pricing between the cash and synthetic markets results from the impact of a combination of factors, noted in Choudhry (2004). In essence it is because credit derivatives isolate and trade credit as their sole asset, separately from any funding consideration, that they are priced at a different level than the asset swap on the same reference asset. There are also other important factors, including the impact of supply and demand, and we make an observation in this regard in this article.

### **A negative basis**

The difference between the CDS and the ASW price is the CDS *basis*. The basis is given by:

credit default spread ( $D$ ) – the asset swap spread ( $S$ ).<sup>1</sup>

Where  $D - S > 0$  we have a *positive basis*. A positive basis occurs when the credit derivative trades higher than the asset swap price, and is the norm. Where  $D - S < 0$  we have a *negative basis*. This describes where the credit derivative trades tighter than the cash bond asset swap spread. It is more unusual to see this for any length of time. On balance, the net impact of all the factors that drive the basis serves to make it positive. In essence this is because the seller of protection on a standard CDS contract is affording a greater level of protection on the reference name than a cash investor in a bond issued by that reference name.

One of the factors that impact the basis is supply and demand, in both cash and synthetic markets. For many reference names there is greater liquidity in the synthetic market than in the cash market, which would tend to influence the basis into negative territory, but other factors push the basis the other way (see Choudhry 2004). With structured finance assets such as asset-backed securities (ABS) though, supply in the cash market is a key factor, and has been responsible for negative basis over a longer time period than observed in conventional bond markets.

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<sup>1</sup> We may state the formal definition of the credit default swap – bond basis as being the difference between the credit default spread and the par bond floating-rate spread of the same reference asset, the latter as expressed for an asset swap on the bond.

## Supply and demand

The bonds we will consider in this illustration are all examples of residential mortgage-backed securities (RMBS), in fact a special class of RMBS known as Home Equity.<sup>2</sup> We show three of these bonds in Table 1.

Bond	Amount issued \$mn	CDS spread	Libor spread on Note	CUSIP number	Interest frequency
ACCR 2004-3 2M7	7.665	335	350	004375BX8	Monthly on 25th
CWL 2004-6 B	46.0	340	375	126673BL5	Monthly on 25th
NCHET 2004-2 M9	19.374	345	400	64352VGJ4	Monthly on 25th

Bond terms source: Bloomberg L.P.

CDS price source: KBC Financial Products

### **Table 1 Securities used in illustration, showing CDS and Cash market prices, 21 September 2004**

All three bonds were part of new issues, for first settlement in September 2004. The mezzanine tranches were in high demand at time of issue. Under conventional circumstances the CDS price for these securities would be expected to lie above the Note yield. But in fact the opposite is true, as the market quotes shown in Table 1 indicate. This reflects the lack of supply of these bonds in the market, such that investors are forced to access them in the synthetic market.

The small size of these Note tranches is a key reason behind the low availability of paper. Only \$7.6 million of the ACCR bond was available, a very low figure in any securitisation. The entire securitisation itself is a large issue, called Accredited Mortgage Loan Trust, with a total of \$766.43 million of Notes issued as part of the deal. However the tranche in question – the Baa3 / BBB-rated 2M7 piece – made up less than 1% of this total.<sup>3</sup> Given this paucity of supply, the bond can be sourced more easily in the CDS market, but this carries with it a reduction in yield spread, associated with the greater demand over supply.<sup>4</sup>

We observe similar characteristics for the two other bonds in our sample. The Countrywide Asset-Backed Certificates transaction is made up of a total of \$4.426 billion in 12 different tranches; the mezzanine tranche rated Baa3 / BBB was issued in size of only \$46 million. The total size of the New Century Home Equity Loan Trust deal was \$1.937 billion, while the particular mezzanine tranche we are interested in was issued in size of only 1% of this total. This bond exhibits the widest spread in our small group, with the CDS trading at a premium of 55 basis points to the theoretical cash price.

<sup>2</sup> For further information on Home Equity securities see Fabozzi (2004).

<sup>3</sup> Data source: Bloomberg.

<sup>4</sup> In effect the cash market Note yield of 350 bps for this bond is a theoretical construct. As the bond in effect cannot be purchased, as no paper is available, the cash market yield for this name cannot actually be earned by any investor.

## CDS mechanics

The CDS contracts written on these structured finance securities have minor differences in their terms compared to vanilla single-name CDS instruments. This includes the following:

- a premium payment set to match the payment date of the cash bond, in this case a monthly payment on the 25<sup>th</sup> of each month. The standard CDS payment terms are quarterly in arrears;
- in practice, an un-fixed maturity date. The CDS written on these bonds is set to match their maturity. From Bloomberg we see that the ACCR 2M7 tranche has a weighted-average life of 5.4 years. This is of course an estimate based on a specified pre-payment rate, which is standard practice for all RMBS bonds. In reality, the bond may well pay off before or after 5.4 years. The CDS contract language specifies that the contract expires when the cash bond itself is fully paid off;
- the transaction undertaken by the investor for the CDS that references the ACCR 2M7 tranche was for a notional of \$10 million. This is more than the actual amount in existence of the physical bond. Hence, it is standard practice for all structured finance CDS contracts to always be cash-settled instruments.

By setting the terms in this way, investors are able to access these types of names and asset classes where the cash market bond is no longer available to them, by selling protection on the bond tranches using a CDS.

The CDS market maker that is the counterparty to the CDS investor may gain from acting in this business in the following ways:

- buying protection on this class of assets releases economic capital that can be invested in higher-yielding assets elsewhere;
- it may be able to find similar assets in the cash market that yield a higher spread than the CDS protection it is paying for;
- it can treat this business as trading activity – CDS market making – and seek to gain a trading profit.

Irrespective of the motivation of the investor and the CDS counterparty to these trades, this business illustrates the contribution to market liquidity of credit derivatives, as well as the impact of supply and demand on reversing the market convention of a positive basis.

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**References**

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