The Credit Default Swap Basis

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FOREWORD

During the last few years, the credit derivatives market has grown significantly and is now an established derivative market. This market has given some investors a choice on how they should take exposure to the credit risk of a company – either via a credit derivative contract or by buying/selling the bonds of that company. The CDS contract (credit default swap contract) is the building block to many exotic credit derivative structured products and indices. The CDS is a contract that is designed to payout if there is a credit event affecting the reference credit.

The subject of examining the cash-CDS basis, and answering questions such as – why it exists, how to measure & monitor the basis and how to react to changes in the measure and understand relative value – are key questions for all credit investors.

Moorad Choudhry has written this timely, insightful and accessible book into the cash–CDS basis that combines his in-depth academic knowledge with his own excellent skills as a market practitioner. It deserves a wide readership.

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PREFACE

This is a book about the credit default swap basis. It is *not* a book about credit default swaps, much less a book about credit derivatives, a subject that is the focus of a great many books these days.[1] Of course it closely concerns credit default swaps, or rather one particular aspect of their trading, analysis and performance, and so readers should be familiar with the credit default swap (henceforth CDS) as a financial instrument. But it is not a book about the CDS *per se*. It is about an aspect of CDS behaviour that is, whether appreciated by them or not, of importance to all users of CDS products. This is the *basis*, which can be loosely defined as the relationship between the cash and synthetic credit markets.

A basis exists in all markets where cash and derivatives forms of the same asset trade side-by-side. For example, there is a crude oil basis, and a government bond futures basis. Put simply, the basis is the difference in price between cash form of an asset and the price of that asset when represented by a derivative contract written on that asset. Depending on the type of asset we are talking about, whether financial or physical, the basis will

[1] I particularly recommend *Credit Derivatives* (Mark Anson et al), *The Handbook of Credit Derivatives* (Mark Francis et al), *Credit Derivatives* (Geoff Chaplin) and *Credit Derivatives, CDOs and Structured Credit Products* (Satyajit Das). Readers will have to judge for themselves if *Structured Credit Products* (Moorad Choudhry) has the right to be in this esteemed company!

have a value that is *should* be. However various factors combine to make the basis move away from its theoretical value, and it is this divergence that is of importance to market participants. Why is the credit default swap basis important? Because it is the measure by which investors, indeed all market participants, can assess relative value in the credit markets, for both cash bonds and CDS. The relationship and interplay between the two markets is captured in the basis. Thus the basis becomes the key measure of relative value for credit-risky assets, as well as an indicator of mis-pricing of these assets, whether they are in cash or synthetic form.

The use of interest-rate derivatives increased liquidity in the world's financial markets. Such instruments made it easier for users and providers of capital to price and hedge cash market debt capital products. Interest-rate swaps are now a leading indicator of the financial markets and a tool by which cash market efficiency is maintained. We can observe a similar development occurring in credit markets. Credit derivatives were introduced around 1994, although a liquid market did not develop for a few years after that. They are now an important part of the global capital markets, and have contributed to increased liquidity in the cash credit market. They also enable market participants to price credit as an explicit asset class.

As the synthetic market in credit becomes a reliable indicator of the cash market in credit, mirroring the development in interest-rate markets a generation before, it is important for all market participants to familiar with the two-way relationship between the two markets. The relationship is represented by the credit default swap basis: a measure of the difference in price and value between the cash and synthetic credit markets.

The growth of the credit derivatives market has produced a highly liquid market in credit default swaps across the credit curve. This liquidity in turn has helped to generate further growth in the market. There is a wide range of users of credit default swaps, from banks and other financial institutions to corporate and supranational bodies. The liquid nature of the credit default swap market has resulted in many investors accessing synthetic, rather than cash, markets in corporate credit. As well as greater liquidity, the synthetic market also offers investors the opportunity to access any part of the credit term structure, and not just those parts of the term structure where corporate borrowers have issued bonds. The liquidity of the synthetic market has resulted in many investors accessing both the credit derivatives and the cash bond markets to meet their investment requirements.

This book considers the close relationship between the synthetic and cash markets in credit. We look first at why in theory the price of the cash and synthetic products should be identical. We then look at why the synthetic market price will necessarily differ from the cash market price. We consider the factors that drive this non-zero basis, and the implications this has for market participants. We consider the latest developments and the most effective approach to calculate the basis. We discuss the concept of the basis trade,

the quintessential arbitrage trade, and the mechanics behind it. As the basis is a quantitative measure of relative value between cash and synthetic credit markets, any calculation methodology needs to compare like-for-like yield spreads. We assess the different methodologies that may be employed and conclude that the adjusted basis, which is the difference between the adjusted CDS spread or c-spread and the cash bond z-spread is the most effective measure of the basis. The adjusted CDS spread uses the synthetic market credit term structure to adjust cash bond market yields. Finally, we illustrate key concepts with real-world examples of positive and negative basis arbitrage trades. But to begin with, we present some essential background on the CDS itself, the concept of bond spreads and relative value, and plain vanilla CDS pricing.

An understanding of the basis is, we feel, of vital importance to anyone with an involvement in the credit-risky debt capital markets, whether as investor, trader or broker. As such this book is aimed at, among others, those working in financial institutions and related firms. We hope they find the content useful. Comments on the text are welcome and should be addressed to the author care of Bloomberg Press.

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