PREFACE

This book is aimed at all those with an involvement in cash bond and bond futures markets. This includes traders and salespersons in investment banks, as well as fund managers. Others such as post-graduate students in finance may also find the contents useful. The first edition of this book was a (hopefully!) succinct and accessible look at the government bond futures basis. The concept of the basis can be applied in any financial market, not just that of government bonds, and refers essentially to the price differential between cash and derivative (or synthetic) versions of the same asset. The second edition of the book builds on this and also introduces more background on futures contracts as well as more illustrations. The expanded approach should help to answer the question of 'What exactly is the basis?' and 'How does one trade the basis?'. We also introduce in this edition an accessible account of the Z-spread, which is a bond yield spread used in relative value analysis. This is becoming increasingly relevant in an era of credit derivative basis trading, which, however, must remain the preserve of another book. Government bond markets do not exist in isolation, and while there are certainly dedicated desks of traders in banks whose sole job it is to trade the government basis, some of our readers will be interested in the interaction between risk-free and credit-risky markets. But we remain true to our original purpose, hence we place the introduction to bond spreads in an Appendix! This second edition also provides, for reference purposes, background information on repurchase agreements or *repo*. The most important element in a basis trade is its financing, which is carried out in the repo market. Hence, this additional detail is again placed out-of-the-way in an Appendix.

Government bond futures contracts, traded on an exchange and representing a very liquid product, are a key component of the global bond markets. The nominal value of bonds represented by daily trading in the futures markets far exceeds the actual nominal value of the cash bond market itself. The difference between the price of a cash bond and its implied price as given by a futures contract is the *basis*. The basis has a significant impact on the use of bond futures for both hedging and speculative purposes. Given its importance, it is vital that market participants have a clear understanding both of the basis itself as well as its dynamics.

The cash government bond market is the cornerstone of the debt capital markets, and provides the benchmark rate of return against which all other asset returns are priced and assessed. This reflects, in advanced economies, its status as a risk-free market. The futures market is arguably as important as the cash market, as futures contracts are the main hedging and risk management tool used by cash bond traders and investors. As such, futures contracts are essential to maintaining liquidity and market transparency.

Government cash and derivatives markets exist in a symbiotic relationship. Hence, it becomes important to understand the relationship between the two markets. The objective of this book is to address key questions on the exact definition of the basis, how the basis behaves in practice and how one should analyse the basis if one wishes to trade it. As we mentioned at the start, the concept of the basis exists for all derivative contracts. The price differential between a barrel of crude oil and the same barrel represented by a futures contract is also the basis. Generally, the basis for an oil contract should reflect the difference in cost between delivering a barrel of oil now or storing and delivering it later – there will be storage costs to cover. The difference with a bond contract is that, unlike with crude oil, holding a government bond actually produces income, provided that the yield on the bond is above the bond's financing (or repo) rate, so the basis for a bond futures may actually be negative. This reflects that the price of the bond implied by the futures contract may be lower than the cash price – this flies in the face of logic but is easily explained, as we shall see.

We have already defined the basis then – the price differential between the cash asset price and the asset price for future delivery implied by the futures contract. For a bond future, the basis is the price difference between the cash bond and the futures contract, but adjusted by the contract's *conversion factor*. The conversion factor equates the futures contract to the bond, because, as we shall see, there are a number of different bonds all represented by the same contract. Using conversion factors in essence means we are able to assess all cash bonds on a like-by-like basis (no pun intended!).

What about trading the basis? It is a form of arbitrage trading, in this case the simultaneous trading of cash bonds and bond futures contracts to exploit a perceived mis-pricing in one or both instruments. If we 'buy the basis' we are buying the bond and selling the future, while 'selling the basis' is the simultaneous sale of the cash bond and purchase of the bond future. These days, market makers will quote you a price that enables one to execute both sides of the trade at once. This eliminates the need to 'leg into' the trade, which is when one side, either cash or future, is transacted first. This can be a risky approach because the market may well have moved before the other leg can be executed, which means the trade is off-side right from the start and has no chance, or little chance, of making a profit.

We will explore this further in the following chapters.

CONTENT OF THE BOOK

The objective of this book is to describe and explain the basis in non-technical terms. We do this by taking examples from the United Kingdom gilt market, although the basic principles will be applicable in any bond futures market. As such, we consider:

- the futures contracts themselves, including contract specifications and the concept of the cheapest-to-deliver;
- price and delivery data for a sample of gilt contracts;
- the drivers of the basis and its dynamics;
- the mechanics of basis trading;
- a detailed explanation of gross and net basis, and the implied repo rate.

We wish to provide an introductory description and analysis of the futures bond basis; readers who wish to investigate the bond and derivatives markets to greater depth may wish to consult the author's book *The Bond and Money Markets: Strategy, Trading, Analysis*, published by Butterworth Heinemann (2001) or his later book *Fixed Income Markets: Instruments, Applications, Mathematics*, published by John Wiley & Sons (2004).

Further information on the fixed income markets is available at the fixed income research website:

www.yieldcurve.com

Comments on the text are welcome and should be sent to the author care of John Wiley & Sons.