

BOND FUTURES AND THEIR IMPLICATIONS

by

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Introduction

Participants in the bond market have been increasingly exposed to the risk of adverse price movements resulting from unprecedented interest rate fluctuations. Up to date, there has not been a formal and readily accessible mechanism by which bond holders could protect themselves from such movements. Similarly there has not been a protection mechanism for holders of non-government securities which price off the bond market. In overseas markets two main products have been developed, namely physical shorting and bond futures. The implications and practicalities of shorting and futures in an Australian context are discussed below.

Shorting

As the legality of shorting is still unclear we shall discuss only one specific form of shorting, that is "SSAB", Securities sold under an Agreement to Borrow.

To create SSAB's one must first borrow a physical security from an existing holder and subsequently sell it into the market. This borrowing would incur a fee. At a later date, the security would be repurchased from the market and returned to the original holder. SSAB's can be used to provide the following benefits —

- To smooth excess fluctuations caused by supply shortages
- To hedge a physical portfolio, either on an inter or intra market basis
- To create speculative positions
- To create negative cash-carry positions and other arbitrages of cash and securities
- To create future buying demand
- To allow market makers to quote 2 way prices

The reason that SSAB's are not yet common within our markets is that there are several practical disadvantages including that —

- There is no standard accounting practices for either borrowers or lenders of securities as regards ratios, balance sheet impact, or contingent liabilities created

- Bond holders may not want to part with their physical portfolio for internal reasons, be they tax, accounting or management policies
- Borrowers may believe that they may not be able to repurchase the identical series and hence would not enter into SSAB's
- It is inconvenient for official dealers not to hold their securities at the Reserve Bank
- Banks must hold their bonds at the Reserve Bank
- Unless the stock borrowing procedure is strictly controlled e.g. margin calls, the lender is exposed to a performance or default risk

These problems are not insurmountable and could be significantly lessened by the creation of a Central Borrowing Agency. This Agency would hold bonds on behalf of clients, monitor all risks, make margin calls and provide nominee services. The Agency could also police strict rules to prevent overlending of a particular series relative to the available supply of that series.

Bond Futures Versus SSAB's

There would appear to be a more efficient way of creating most of the benefits mentioned earlier, and that is bond futures. It should be noted that bond futures, SSAB's and the Central Agency are not mutually exclusive, in fact they would be complimentary.

Futures offer several advantages over physical purchases/SSAB's because —

- there is no actual cash or securities changing hands at the time the contract is entered into
- of reduced search costs of bringing together interested parties
- the International Commodities Clearing House would guarantee contracts hence eliminating default risk
- they provide via the market price, widespread dissemination of the information possessed by individual users.
- futures contracts do not involve the inventory costs associated with the purchase of physical securities
- futures do not involve the cost of borrowing securities

The Delivery Process in Futures

The knowledge that delivery must occur after the close of trading forces futures and physical prices to merge, thus keeping futures prices in line with the cash adjusted price of the underlying security. This delivery process can be either cash settlement or physical delivery.

Cash settlement is completed by the payment or receipt of a difference cheque. This cheque is the profit or loss incurred between one's contract price and the settlement "index price".

This "index price" must be —

- uniform and present an industry standard
- well known and widely available
- an accurate indication of the value of the bond
- immune to manipulation

Futures which are closed by cash settlement can be used —

- by investors to hedge their government asset portfolio
- by investors to hedge their non-government portfolios based on inter market spreads
- by investors to lock in the price of future purchases or sales of government securities
- by investors to lock in the price of future purchases or sales of non-government securities based on inter market spreads
- by borrowers to hedge their borrowing cost to a margin over the government rate
- by speculators to gain speculative profits
- to create straddling profits

Because of various legal constraints, it is expedient to use cash settlement as the delivery process for bond futures in Australia. However, once various exemptions are obtained and legislation altered the delivery process could be restructured to allow for physical delivery.

Physical delivery is completed by the delivery of a pre-defined physical security or securities. Futures which are closed by physical delivery not only have the above uses but also can be used to create —

- cash carry opportunities
- negative cash carry opportunities
- synthetic securities

It should be noted that where physical delivery requirements are satisfied by a basket of deliverable securities covering various series, the seller will deliver the security which costs him the least amount of money. Knowing this, the market should trade to the security which is the cheapest to deliver. Thus anyone participating in futures should have an understanding of the delivery procedure and its ramifications even though one may never make or take delivery.

Bond Futures and the RBA/Treasury

There are three areas in which RBA/Treasury may voice concern about bond futures, being —

- Could bond futures trading adversely effect the efficiency and integrity of the underlying spot market for those securities?
- Is the trading of a bond futures contract which depends on the deliverable supplies of Government Securities likely to constrain the Treasury in its debt management decisions? (This is not relevant if there is cash settlement)
- Is there a danger that unsophisticated investors will not fully appreciate the risks inherent in futures contracts particularly where the futures name suggests the backing of the Australian Treasury?

Bond Futures and Spot Markets

There are two essential areas in which features could have a destabilising influence on the spot market, namely volume and price.

Volume

Futures could be thought to draw funds into their market which would otherwise be used in the spot market. This suggestion is easily dispelled as securities dealers will generally use the futures markets in conjunction with the spot markets, e.g. for hedging or arbitrage. Their activities should not contribute to a divergence of funds. Moreover many of the speculative positions taken by individuals would probably have never been taken at all in the spot markets, after allowing for the cost and difficulties of carrying physical securities. Additionally given the captive nature of the Australian markets, and the fact that futures would not be eligible for ratios, futures would not alter the bulk of bond holders requirements for new government issues.

Another basic concern could be that if futures had a destabilising effect on spot prices, smaller and less aggressive investors could be discouraged from bidding in tenders. On the other hand, if futures helped to stabilise prices or enhance the general liquidity of bonds, it would lead to a significant increase in the markets demand for bonds. This is discussed below.

Price

In principal, futures prices are the cash adjusted projections of current spot rates. However, speculators can move the futures temporarily out of line with the physical market and hence futures prices should not be seen as the market's prediction of future spot rates.

Decisions made by traders in both markets are based on the then available information and hence futures markets cannot be expected to contain more informa-

tion than the spot market. For the most part, econometric studies in the USA show this to be true and conclude that spot markets are not driven by futures, but rather futures merely mirror the spot.

In Australia, however, it would be reasonable to expect futures to have a larger impact on our spot markets. As SSAB's are not readily available, our markets refuse to move yields in an upward direction until forced to do so by new supply (particularly if sellers are facing losses). Hence our markets stagnate, then overreact before settling to their correct levels. Bond futures would allow a much smoother progression of prices as participants sell futures in expectation of future yield rises. If these expectations are consistent with the spot market's expectations, yields in the spot market will be forced upwards via arbitrage. Hence stagnation and large individual jumps in yields should be eliminated. This is particularly relevant in periods leading up to bond tenders.

Another advantage is that futures provide more readily accessible information the public at large. This should help to narrow the range of expectations that prevail in the spot market and to bring financial decisions made throughout the economy into more consistent alignment with each other.

One common fear is that certain participants may attempt to manipulate the spot market via futures. This could lead to unacceptable price distortions in the spot market. In practice any attempt to manipulate price will be met by other participants moving in the opposite direction to take advantages of the arbitrages that this manipulation would create. The ultimate safety valve is the delivery procedure.

Bond Futures and Debt Management/Physical Delivery

Treasury is the monopoly supplier of bonds and hence could resent the intrusion of futures on its control of their bond spot market, particularly if they felt that they were being forced into issuing a certain bond to stabilise the spot market.

For this reason and those mentioned above it is critical to create a suitably designed physical delivery procedure. Our own personal preference is that physical delivery should be based on a basket of securities rather than an individual security. There would be a set formula based on coupon and maturity to determine the delivery price of each of the bonds within the basket. It is important that this basket of acceptable bonds be as small as possible as not to dilute the previously mentioned

benefits whilst still large enough to prevent potential squeezes of deliverable supply. It should be noted that there is additional protection in that the Futures Exchange has the right to force cash settlement or limit trading where it becomes obvious that a squeeze is being engineered.

Given the above physical delivery procedure, Treasury should not be placed in a position where it is forced to issue a particular bond or in any way feel constrained in its debt management decisions. To further ensure this no bond future should be created whereby deliverable supply is solely reliant on the future issue of an individual security.

Several years from now, it is possible to envisage a situation where the government's requirements for funds could be significantly reduced, in fact it is possible that the government could be a net redeemer of securities. In this situation future deliverable supply would be decreasing. This does not cause a conflict as the markets needs for futures as a hedging mechanism would be reduced in parallel.

Bond Futures and the Small Investor

A common argument for regulation of futures is that amateur speculators foolishly overexpose themselves and suffer severe financial losses. Strict monitoring of positions, daily marking to market and subsequent margin calls are designed to protect all participants. These safeguards substantially reduce the credit risks associated with transactions for future delivery, are helpful in encouraging good management control, and significantly reduce the likelihood that harmful situations will develop. Since all futures transactions must occur through clearing members with established customer suitability standards there would appear to be little risk of the small investor being abused.

As an added safeguard, it is recommended that the name selected for the bond futures should in no way suggest that the futures are backed by the Australian Treasury of the Reserve Bank.

Speculation and Hedging

Speculators are extremely important to the futures markets. They allow for the reallocation of risk to those more tolerant to it and as previously mentioned help to make information more freely available at a low cost. However where does hedging finish and speculation begin.

Hedging could be described to fit into four major categories —

- Firstly there are hedges which are carried out to *eliminate* the risks of price fluctuations. It is not practically possible to create an exactly matched hedge unless every detail of the transaction is aligned with the futures contract.
- Hence the second category of hedges has a broader definition to encompass hedges which are carried out to *reduce* the risks associated with price fluctuations.

These hedges have two forms, namely within commodity hedging where it is expected that the basis difference between spot and futures prices will move in a similar manner, and hedging in a different commodity where it is expected that the basis difference between the physical price in one commodity and the futures price in the other commodity will move in a similar manner. The smaller the ratio of basis risk to price risk the more effective is the market as a hedging medium.

- Our third type of hedging is aimed at profiting from movement in basis. These can be subdivided into selected and anticipatory hedges. Selective hedging is where the hedgers subjective decision influences him to leave some or all of his inventory unhedged, and anticipatory hedging is where the hedger carries an open position in the futures before entering into the actual offsetting physical commitment.
- The fourth type of hedging combines all the skills acquired above to maximise expected returns for given risks or to minimise risk for a given expected return. The objective and hence risk of these hedges should be judged in the context of ones entire asset and liability portfolio, not in isolation. Even though these latter types of hedges are not "pure hedges" in the text book sense, they need not imply that futures markets are not being used to reduce absolute risk.

These latter comments are particularly relevant to the effect of futures on specific groups such as banks and

official dealers. Futures should be judged against the interest rate risk of the bank or dealer as a whole (including the risk of off balance sheet commitments) and not relative to any single transaction. In the USA, no bank or dealer has yet failed or required supervisory attention as a result of involvement in financial futures. However, in Government National Mortgage Association forward trading where margin calls are not used, some banks solvency had been threatened. This fact supports the recommendation that a Central Agency should be established to control the SSAB market which is continually increasing in depth.

Conclusion

Australian fixed interest markets need a mechanism to hedge risk on longer term securities. Bond futures provides this mechanism. From the Treasury point of view, bond futures should increase demand for government securities via the increased liquidity and market depth they will engender. Bond futures should also decrease interest rate volatility via its information dissemination and its expected tendency to lessen the period of stagnation and overreaction which Australian bond markets experience. Great liquidity and lower volatility should mean lower yields for a given quantity of government bonds.

From the market point of view bond futures provide the most efficient way for allowing investors and borrowers to hedge their asset and liability portfolios. Market makers will subsequently be able to increase risks, turnover and liquidity of the market. This will make Australian markets more attractive to overseas investors further increasing market depth.

For the most sophisticated participants bond futures will be used as a tool to maximise returns or minimise losses.

Overall bond futures will provide benefits for both the issuer of the underlying debt (Treasury) and for the users, and hence should be initiated as soon as practicable.