8. FUTURES

1 The current date is September 17, 2003 and you observe the LIFFE December Short Sterling futures contract trading at 96.12 with an expiry date of 17/12/2003. What are the lower and upper arbitrage bounds on the futures price if the current market interest rates are

3-month	$3\ ^5/_8$ - $3\ ^3/_4$
6-month	$3\ ^3/_4$ - $3\ ^7/_8$

2 Give suitable formulae for calculating the required number of gilt futures contracts for a hedge of:

(a) A holding of the cheapest to deliver gilt
(b) A holding of any other deliverable gilt

3 Assume you know that the current or running yield on a bond is 7% (30/360 day basis) and the three-month interest rate is 4% (30/360 day basis). You observe the current dirty price of the bond is 98.00.

(a) Calculate the theoretical forward price for the bond, assuming no coupons will be paid over the next three months.

(b) Briefly suggest an explanation for any differences between the actual and theoretical bond forward price.

4 Determine the size of the theoretical arbitrage profit that could be earned if the following set of market price data apply. Ignore any tax effects or stock borrowing costs. The current date is 15/12/2001.

FTSE –100 INDEX	= 5000 (delivery date 15/3/2002)
FTSE –100 MARCH FUTURE	= 5060 – 5062
3-MONTH STERLING INTEREST RATE	= $6 – 6^1/_8$ %
3-MONTH DIVIDEND YIELD	= 1.75%