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ACCA F9

Financial Management (FM)

财务管理

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Part G: Risk Management——Interest Rate Risk

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Introduction of Interest Rate Risk

Interest rate is the return borrowers get from lenders.

The interest rates on financial assets are influenced by the risk of the assets, the duration of the lending, and the size of the loan.

由于高风险高收益，因此投资者需要在风险和收益之间做一个trade-off.

Interest rate risk relates to the sensitivity of profit and cash flows to changes in interest rates.

Introduction of Interest Rate Risk

Floating interest rate debt: Interest rates on this debt will rise or fall in line with changes in a benchmark interest rate

Fixed interest rate debt: If interest rates fall sharply, the company will suffer from a loss of competitive advantage compared with companies using floating rate borrowing whose interest costs and cost of capital will fall.

Gap analysis: Gap analysis is based on the principle of grouping together assets and liabilities which are sensitive to interest rate changes according to their maturity dates.
Negative gap & positive gap

Basis risk: It may appear that a company which has size-matched assets and liabilities, and is both receiving and paying interest, may not have any interest rate exposure. However, the two floating rates may not be determined using the same basis or benchmark.

Introduction of Interest Rate Risk

reasons why interest rates differ in different markets and market segments:

- Risk—— higher risk, higher return
- The need to make a profit on re-lending——for financial intermediaries
- The size of the loan
- Different types of financial asset
- The duration of financial asset

Introduction of Interest Rate Risk

The general level of interest rates is affected by several factors:

- Need for a real return——The appropriate 'real' rate of return will depend on factors such as investment risk.
- Inflation——Nominal rates of interest should be sufficient to cover expected rates of inflation
- Uncertainty about future rates of inflation
- Liquidity preference of investors and the demand for borrowing
- Monetary policy

Interest Rate Risk Management

Matching and smoothing:
Matching is where liabilities and assets with a common interest rate are matched.

For example subsidiary A of a company might be investing in the money markets at LIBOR and subsidiary B is borrowing through the same market at LIBOR. If LIBOR increases, subsidiary A's borrowing cost increases and subsidiary B's returns increase. The interest rates on the assets and liabilities are therefore matched.

Smoothing is where a company keeps a balance between its fixed rate and floating rate borrowing.
A rise in interest rates will make the floating rate loan more expensive but this will be compensated for by the less expensive fixed rate loan.

Interest Rate Risk Management

Forward rate agreements (FRAs):

Forward rate agreements hedge risk by fixing the interest rate on future short-term borrowing.

FRA和 forward exchange contract比较类似，有以下两个特点：

- FRAs are arranged with a bank as an over-the-counter transaction.
- An FRA is a binding contract that fixes an interest rate for short-term lending/investing or short-term borrowing, for an interest rate period that begins at a future date.

Interest Rate Risk Management

FRA terminology:

(a) 5.75-5.70 means that you can fix a borrowing rate at 5.75% (and a deposit rate at 5.70%). The interest rate in the FRA will be compared with a reference rate or benchmark rate of interest, which is specified by the FRA agreement.

(b) A '3-6' forward rate agreement is an agreement that fixes an interest rate for a period starting in three months' time and lasting for three months to the end of month 6.

(c) A basis point is 0.01%.

Interest Rate Risk Management

Interest rate futures:
Interest rate futures are similar in effect to FRAs, 可以视作是标准化的forward contract.

- Borrowers will wish to hedge against an interest rate rise by selling futures now.
- Lenders will wish to hedge against the possibility of falling interest rates by buying futures now.

Interest Rate Risk Management

Interest rate options: 类比 foreign currency option学习

Interest rate options allow an organisation to limit its exposure to adverse interest rate movements, while allowing it to take advantage of favourable interest rate movements.

On the date of expiry of the option, the buyer must decide whether or not to exercise the right.

对option而言需要支付期权费，即premium
Interest rate options offer more flexibility than and are more expensive than FRAs.

Interest Rate Risk Management

Interest rate caps, collars and floors：
这个是关于Interest risk比较特殊的管理方法

(a) An interest rate cap is an option which sets an interest rate ceiling.

(b) A floor is an option which sets a lower limit to interest rates.

(c) Using a ‘collar’ arrangement, the borrower can buy an interest rate cap and at the same time sell an interest rate floor. This limits the cost for the company as it receives a premium for the option it‘s sold.

对collar而言如果floor 和cap 的价格相等，那么collar的成本为零

Interest Rate Risk Management

Interest rate swaps:
Interest rate swap is an agreement whereby the parties to the agreement exchange interest rate commitments.

party A agrees to pay the interest on party B's loan, while party B reciprocates by paying the interest on A's loan. If the swap is to make sense, the two parties must swap interest which has different characteristics.

The transaction cost of swap may be too high.

Example

Which of the following statements are correct?

(1) Interest rate options allow the buyer to take advantage of favourable interest rate movements.
(2) A forward rate agreement does not allow a borrower to benefit from a decrease in interest rates.
(3) Borrowers hedging against an interest rate increase will buy interest rate futures now and sell them at a future date.

A 1 and 2 only
B 1 and 3 only
C 2 and 3 only
D 1, 2 and 3

Thank You!