

4.2 Nominal v. Real Interest Rates

Name: _____ Class: _____ Date: _____ Total: 9 marks

KEY WORDS nominal interest rate 名义利率 • real interest rate 实际利率
• fisher equation 费雪方程

Objective

Build the skills to answer exam questions on **nominal versus real interest rates**.

You must be able to:

- distinguish the **nominal interest rate** 名义利率 from the **real interest rate** 实际利率
- apply the **Fisher equation** 费雪方程: $\text{real rate} \approx \text{nominal rate} - \text{expected inflation}$
- explain how expected inflation affects borrowers and lenders

1 Worked examples

Study these first. Each one shows the method for a question type used later.

■ **Nominal vs real**

The **nominal** rate is the stated rate; the **real** rate is what is left after allowing for inflation — the true change in purchasing power.

■ **The Fisher equation**

$$\text{real rate} \approx \text{nominal rate} - \text{expected inflation}.$$

■ **Borrowers and lenders**

If inflation turns out **higher** than expected, the real rate actually paid is **lower**, so **borrowers gain** and **lenders lose**.

2 Practice

2.1 State the Fisher equation. [1]

2.2 A loan has a nominal rate of 7% and expected inflation is 3%. Find the real rate. [2]

2.3 State the difference between a nominal and a real interest rate. [1]

3 Exam-style questions

3.1 The real interest rate equals the nominal rate [1]

- **A** plus expected inflation
- **B** minus expected inflation
- **C** times inflation
- **D** divided by inflation

3.2 If inflation is higher than expected, the real rate actually paid by a borrower is [1]

- **A** higher
- **B** lower
- **C** unchanged
- **D** zero

3.3 A loan has a nominal rate of 8%; expected inflation is 5%.

(a) Find the expected real interest rate. [2]

(b) If actual inflation turns out to be 9%, state who gains. [1]

Solutions

2.1 real rate $\approx$ nominal rate $-$ expected inflation.

2.2 $7\% - 3\% = 4\%$.

2.3 the nominal rate is the stated rate; the real rate subtracts inflation to give the true change in purchasing power.

3.1 B.

3.2 B.

3.3 (a) $8\% - 5\% = 3\%$. (b) the borrower gains (actual real rate is only $8\% - 9\% = -1\%$).