Chapter3 preview

1. **Define the term "competitive market," give examples of markets that are competitive and some that aren't, and discuss the importance of a competitive market in determining the value of a good.**

   A competitive market is one in which goods or services can be bought and sold at the same price, enabling market participants to freely trade without price manipulation. Examples include markets for gold, silver, stocks, and bonds. In contrast, retail stores or markets with price frictions are not competitive. The significance of competitive markets lies in the fact that prices in such markets reflect the true value of goods, allowing financial managers to use market prices to evaluate costs and benefits objectively.

2. **What is Arbitrage?**

   Arbitrage is the act of taking advantage of price differences for the same asset in different markets to make a profit without risk. It involves buying low in one market and selling high in another. For instance, if gold is cheaper in New York and more expensive in London, an investor can purchase it in New York and sell it in London for a profit. Arbitrage requires no initial investment and offers risk-free gains. It plays a crucial role in keeping prices aligned across markets.

3. **What is the Law of One Price?**

   The Law of One Price states that in competitive markets, identical goods must have the same price regardless of where they are traded. This principle is based on the idea that arbitrage will eliminate any price differences. If a product is cheaper in one market, arbitrageurs will buy it there and sell it in the more expensive market, which will increase demand and raise the price in the cheaper market while increasing supply and lowering the price in the expensive one. Eventually, the prices converge, reinforcing this law.

4. **When investors exploit an arbitrage opportunity, how do their actions affect prices?**

   When investors act on arbitrage opportunities, they help bring market prices back into balance. Buying in the low-priced market increases demand, pushing the price up, while selling in the high-priced market increases supply, pushing the price down. These actions continue until the price difference disappears. As a result, the arbitrage opportunity vanishes and the Law of One Price is restored, ensuring pricing efficiency in financial markets.

5. **Briefly explain the Separation Principle.**

   The Separation Principle states that investment decisions can be evaluated independently of financing decisions. In other words, the value of an investment project depends only on its cash flows and risk, not on how the project is financed. This principle simplifies financial analysis because it allows managers to first determine if a project is worth undertaking based on its own merits, and then separately consider how to finance it most effectively.

6. **Explain the concept of time value of money.**

   The time value of money means that a dollar today is worth more than a dollar in the future. This is because money received today can be invested and earn interest over time. Therefore, future cash flows must be discounted to determine their present value. This concept is essential in finance for comparing values of cash flows occurring at different times and making informed investment decisions.

7. **Interest rate, interest rate factor, discount factor**

   The interest rate represents the cost of borrowing or the return on investing money over time. The interest rate factor is the multiplier used to calculate future value and is expressed as $(1 + r)$, where r is the interest rate. The discount factor is used to calculate present value and is the inverse, expressed as $1 / (1 + r)$. These tools allow for translating money values across time.

8. **Explain the PV, FV, and NPV (net present value).**

   Present Value (PV) is the current worth of a future cash flow discounted at a specific interest rate. Future Value (FV) is the amount a present sum will grow to after compounding over time. Net Present Value (NPV) is the difference between the present value of future cash flows and the initial investment. NPV helps determine whether a project will create value; if NPV is positive, the project is financially beneficial.

9. **Explain the concepts of compounding and discounting.**

Compounding is the process of calculating the future value of a present amount by applying interest over time. It reflects the growth of money through investment. Discounting is the reverse; it determines the present value of a future amount by removing interest effects. These two processes are fundamental to understanding how money changes value over time.

10. **What are the annuities? Distinguish a perpetuity from a growing perpetuity.**

    An annuity is a series of equal payments made at regular intervals for a fixed period, such as monthly rent or annual bond coupons. A perpetuity is a type of annuity that pays a constant amount forever. A growing perpetuity is similar, but the payments increase by a fixed rate each period. These concepts are used in valuing cash flow streams in finance.

11. **What is internal rate of return (IRR)?**

    The internal rate of return (IRR) is the discount rate at which the net present value of a project becomes zero. It represents the expected return of a project. If the IRR is greater than the required rate of return or cost of capital, the investment is considered profitable. However, IRR can be misleading when there are non-standard cash flows or multiple IRRs.