The Theory Of Interest (Illustrated)

The theory of interest is a branch of mathematics that deals with the relationship between the present value of a sum of money and its future value. It is a fundamental concept in finance and economics, and is used to calculate the present value of future cash flows, the future value of present cash flows, and the interest rate on a loan.

The Present Value of a Future Cash Flow

The present value of a future cash flow is the amount of money that would need to be invested today at a given interest rate in order to grow to the value of the future cash flow at a specified point in time. The formula for calculating the present value of a future cash flow is:

$$PV = FV / (1 + r)^n$$

The Theory of Interest (Illustrated) by Irving Fisher

★★★★★ 5 out of 5

Language	: English
File size	: 4547 KB
Text-to-Speech	: Enabled
Enhanced typesetting	: Enabled
Word Wise	: Enabled
Print length	: 522 pages

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where:

- PV is the present value

- FV is the future value

- r is the interest rate

- n is the number of periods

For example, if you invest $1,000 today at an interest rate of 5% per year, compounded annually, the present value of the future cash flow will be $1,551.32 in 10 years.

The Future Value of a Present Cash Flow

The future value of a present cash flow is the amount of money that a present cash flow will grow to at a given interest rate over a specified period of time. The formula for calculating the future value of a present cash flow is:

FV = PV * (1 + r)^n

where:

- FV is the future value

- PV is the present value

- r is the interest rate

- n is the number of periods

For example, if you invest $1,000 today at an interest rate of 5% per year, compounded annually, the future value of the present cash flow will be $1,628.89 in 10 years.

The Interest Rate on a Loan

The interest rate on a loan is the cost of borrowing money. It is expressed as a percentage of the principal amount of the loan. The formula for calculating the interest rate on a loan is:

r = (FV - PV) / (PV * n)

where:

- r is the interest rate

- FV is the future value

- PV is the present value

- n is the number of periods

For example, if you borrow $1,000 at an interest rate of 5% per year, compounded annually, and repay the loan in 10 years, the total amount of interest you will pay is $513.20.

Applications of the Theory of Interest

The theory of interest has a wide range of applications in finance and economics. Some of the most common applications include:

- Calculating the present value of future cash flows

- Calculating the future value of present cash flows

- Calculating the interest rate on a loan

- Pricing bonds and other fixed-income securities

- Evaluating investment opportunities
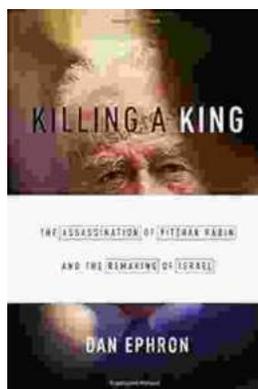
- Managing financial risk

The theory of interest is a fundamental concept in finance and economics. It is used to calculate the present value of future cash flows, the future value of present cash flows, and the interest rate on a loan. The theory of interest has a wide range of applications in finance and economics, and is an essential tool for anyone who wants to understand the financial world.

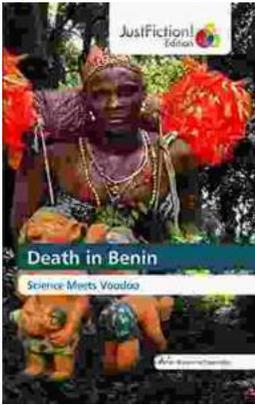**The Theory of Interest (Illustrated)** by Irving Fisher

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