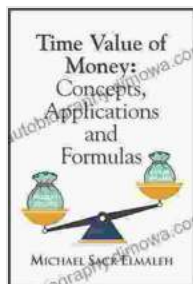


Time Value of Money: Concepts, Applications, and Formulas



Time Value of Money: Concepts, Applications and Formulas by Michael Sack Elmaleh

★★★★★ 5 out of 5

Language	: English
File size	: 15533 KB
Text-to-Speech	: Enabled
Screen Reader	: Supported
Enhanced typesetting	: Enabled
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The time value of money (TVM) is a fundamental concept in finance that recognizes the fact that money today is worth more than the same amount of money in the future. This is because money today can be invested and earn interest, which increases its value over time. Conversely, money in the future has less value today because it has not had the opportunity to earn interest.

TVM is used to calculate the present value and future value of cash flows. Present value is the current value of a future sum of money, while future value is the value of a present sum of money at a future date.

Concepts of Time Value of Money

- **Present value:** The present value of a future sum of money is the amount of money that must be invested today at a given interest rate in Free Download to grow to the future sum at the end of the investment period.
- **Future value:** The future value of a present sum of money is the amount of money that the present sum will grow to at a given interest rate at the end of the investment period.
- **Compound interest:** Compound interest is the interest that is earned not only on the principal but also on the interest that has been earned in previous periods.

Applications of Time Value of Money

TVM has a wide range of applications in finance, including:

- **Investment analysis:** TVM can be used to evaluate the profitability of investment opportunities.
- **Retirement planning:** TVM can be used to determine how much money needs to be saved for retirement.
- **Loan analysis:** TVM can be used to calculate the monthly payments on a loan.
- **Bond pricing:** TVM can be used to determine the price of a bond.

Formulas for Time Value of Money

The following formulas are used to calculate the present value and future value of cash flows:

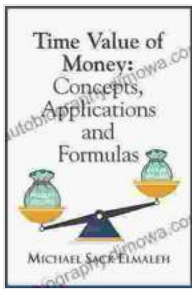
- **Present value of a single sum:** $PV = FV / (1 + r)^n$
- **Present value of an annuity:** $PV = PMT * [1 - (1 + r)^{-n}] / r$
- **Present value of a perpetuity:** $PV = PMT / r$
- **Future value of a single sum:** $FV = PV * (1 + r)^n$
- **Future value of an annuity:** $FV = PMT * [(1 + r)^n - 1] / r$
- **Future value of a perpetuity:** $FV = PMT / r$

where:

- PV is the present value
- FV is the future value
- PMT is the periodic payment
- r is the interest rate
- n is the number of periods

TVM is a powerful tool that can be used to make informed financial decisions. By understanding the concepts, applications, and formulas of TVM, you can make better decisions about how to save and invest your money.

For a more in-depth understanding of TVM, consider reading the book "Time Value of Money: Concepts, Applications, and Formulas" by John C. Hull. This book provides a comprehensive overview of TVM and its applications in finance.



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