## Time value of money

The time value of money is money's potential to grow in value over time. Because of this potential, money that's available in the present is considered more valuable than the same amount in the future.

For example, if you were given $\$ 100$ today and invested it at an annual rate of only $1 \%$, it could be worth $\$ 101$ at the end of one year, which is more than you'd have if you received $\$ 100$ at that point.

In addition, because of money's potential to increase in value over time, you can use the time value of money to calculate how much you need to invest now to meet a certain future goal. Many financial websites and personal investment handbooks help you calculate these amounts based on different interest rates.

Inflation has the reverse effect on the time value of money. Because of the constant decline in the purchasing power of money, an uninvested dollar is worth more in the present than the same uninvested dollar will be in the future.
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## Debt

Any money owed to an individual, company, or other organization. One acquires debt when one borrows money. Generally speaking, one acquires debt for a specific purpose, such as funding a college education or purchasing a house. In business and government, debt is often issued in the form of bonds, which are tradable securities entitling the bearer to repayment at the appropriate time(s). Occasionally, especially for personal loans, debt is issued without interest or other compensation; one simply pays back what was lent. This is exceedingly rare in business and a debtor almost always compensates a creditor with a certain amount of interest, representing the time value of money. However, some areas of finance, especially Islamic banking, do not allow debt with interest.
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## Interest

Money that is paid in exchange for borrowing or using another person's or organization's money. Interest is calculated as a percentage of the money borrowed. There are two kinds of interest, simple interest and compound interest. In simple interest, the interest is calculated only over the original principal amount. For example, if one borrows $\$ 1,000$ at $3 \%$ interest, the interest is $\$ 30(3 \%$ of $\$ 1,000)$ each time it is calculated. In compound interest, interest previously paid is included in the calculation of future interest. For example, with the above loan, interest paid in the first month is $\$ 30$ ( $3 \%$ of $\$ 1,000$ ), in the second month it is $\$ 30.90$ ( $3 \%$ of $\$ 1,030$ ), and so forth. Compound interest is more common because it yields more for the lender.
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## Simple interest

If you earn simple interest on money you deposit in a bank or use to purchase a certificate of deposit (CD), the interest is figured on the amount of your principal alone. For example, if you had $\$ 1,000$ in an account that paid $5 \%$ simple interest for five years, you'd earn $\$ 50$ a year ( $\$ 1,000$ x $.05=\$ 50$ ) and have $\$ 1,250$ at the end of five years.

In contrast, if you had been earning compound interest, you'd have \$1,276.29 at the end of five years, since the interest you earned each year, as well as your principal, would have earned interest.
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## Compound interest

When the interest you earn on an investment is added to form the new base on which future interest accumulates, it is compound interest.

For example, say you earn $5 \%$ compound interest on $\$ 100$ every year for five years. You'll have $\$ 105$ after one year, $\$ 110.25$ after two years, $\$ 115.76$ after three years, and $\$ 127.63$ after five years.

Without compounding, you earn simple interest, and your investment doesn't grow as quickly. For example, if you earned $5 \%$ simple interest on $\$ 100$ for five years, you would have $\$ 125$. A larger base or a higher rate provide even more pronounced differences.

Compound interest earnings are reported as annual percentage yield (APY), though the compounding can occur annually, monthly, or daily.
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## Frequency of Compounding

The number of times that interest is calculated on a loan or other fixed-return investment in a given year. For example, if the frequency of compounding is three, interest is calculated three times per year. The higher the frequency of compounding, the greater return one will make (or one will spend) on the loan or other investment at the same interest rate. See also: Continuously Compounded Interest. Primary source:Farlex Financial Dictionary. © 2012 Farlex, Inc. All Rights Reserved frequency of compounding Retrieved from: https://financial-dictionary.thefreedictionary.com/ frequency+of+compounding

The number of times interest is calculated and added to the sum of the principal and any interest added during a particular period (nearly always one year). More frequent compounding results in a more rapid buildup of funds. For example, $\$ 1,000$ deposited at $12 \%$ compounded twice a year equals $\$ 1,000(1.06)(1.06)$, or $\$ 1,123.60$ at the end of one year, while compounding four times a year results in \$1,000(1.03)(1.03) (1.03)(1.03), or \$1,125.51.

Primary source:Wall Street Words: An A to Z Guide to Investment Terms for Today's Investor by David L. Scott. Copyright © 2003 by Houghton Mifflin Company. Published by Houghton Mifflin Company. All rights reserved. https://financial-dictionary.thefreedictionary.com/frequency+of+compounding

## Compounding/Payment Frequency (Annually, Semi Annually, Quarterly, Monthly, Weekly, Daily, Continuous)

## Common compounding words and frequency ( n per year):

Annually 1
Semiannually 2
Quarterly 4
Monthly 12
Weekly 52
Daily 365

## Continuous compounding

The process of accumulating the time value of money forward in time on a continuous, or instantaneous, basis. Interest is earned constantly, and at each instant, the interest that accrues immediately begins earning interest on itself. Primary source: Copyright © 2012, Campbell R. Harvey. All Rights Reserved.

Continuous Compounding
Describing interest that accumulates on a constant basis. That is, if a loan has continuous compounding interest, the interest accumulates all the time, which means that the interest added to the loan balance also begins earning interest on itself. In the short and medium term, this has almost the same yield as daily compounding interest but over the long term, the continuous compounding interest can earn much more. Albert Einstein was once reported as saying that there is no more powerful force in the universe than continuous compounding interest. See also: Compounding. Primary source: Farlex Financial Dictionary. © 2012 Farlex, Inc. All Rights Reserved
continuous compounding
Compounding of interest using the shortest possible interval of time. Although continuous compounding sounds impressive, in practice it results in virtually the same effective yield as daily compounding.
Primary source: Wall Street Words: An A to Z Guide to Investment Terms for Today's Investor by David L. Scott. Copyright © 2003 by Houghton Mifflin Company. Published by Houghton Mifflin Company. All rights reserved.
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## Annual percentage rate (APR)

In the context of credit cards, the periodic rate times the number of periods in a year. For example, a $1.5 \%$ monthly rate has an APR of $18 \%$. In the context of consumer lending, the APR takes into account more than the interest rate applied to the principal
per period. Under the Truth in Lending Act, it has a specific definition and includes all the costs paid by a non-exempt consumer borrower that are considered a "finance charge," including fees paid to third parties by the lender if not properly disclosed and excluded from the finance charge (such as credit insurance).
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Annual+percentage+rate

## Mortgage

A mortgage, or more precisely a mortgage loan, is a long-term loan used to finance the purchase of real estate.

As the borrower, or mortgager, you repay the lender, or mortgagee, the loan principal plus interest, gradually building your equity in the property.
The interest may be calculated at either a fixed or variable rate, and the term of the loan is typically between 10 and 30 years.

While the mortgage is in force, you have the use of the property, but not the title to it. When the loan is repaid in full, the property is yours. But if you default, or fail to repay the loan, the mortgagee may exercise its lien on the property and take possession of it.
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Retrieved from: https://financial-dictionary.thefreedictionary.com/mortgage

## escrow account

(1) A separate bank account for keeping money that is the property of others. Attorneys and real estate agents are required to keep escrow accounts for client money and not commingle client money with their own funds.
(2) (2) An accounting entry by a mortgage lender showing the amount on hand from the borrower's monthly budget loan payments to pay real estate taxes and insurance when those bills become due.
Primary source: The Complete Real Estate Encyclopedia by Denise L. Evans, JD \& O. William Evans, JD. Copyright © 2007 by The McGraw-Hill Companies, Inc. Retrieved from: https://financial-dictionary.thefreedictionary.com/Escrow+account

## Equity

In the broadest sense, equity gives you ownership. If you own stock, you have equity in, or own a portion -- however small -- of the company that issued the stock. Having equity is the opposite of owning a bond or commercial paper, which is a debt the company must repay to you.

Equity also refers to the difference between an asset's current market value -- the amount it could be sold for -- and any debt or claim against it. For example, if you own a home currently valued at $\$ 300,000$ but still owe $\$ 200,000$ on your mortgage, your equity in the home is $\$ 100,000$.

The same is true if you own stock in a margin account. The stock may be worth $\$ 50,000$ in the marketplace, but if you have a loan balance of $\$ 20,000$ in your margin account because you financed the purchase, your equity in the stock is $\$ 30,000$.

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## Future Value:

The total amount in the account (earned or owed) at the end of the term. It is the sum of the principal and the interested.

Example A: In a simple interest account, if you invest \$150 at $2 \%$ for 5 years, you would earn $\$ 15.00$. The future value (money in the account at the end of 5 years with no additional deposits), you have the original investment of $\$ 150.00$ PLUS the earned interest of $\$ 15.00$ for a total of $\$ 165.00$.
The simple interest formula calculates the interest, so you add the interest to the principal to find the Future Value.

Example B: In a compound interest account, if you invest \$150 at 2\% compounded monthly for 5 years, you would earn $\$ 15.76$. The future value (money in the account at the end of 5 years with no additional deposits), you have the original investment of $\$ 150.00$ PLUS the earned interest of $\$ 15.76$ for a total of $\$ 165.76$. The compound interest formula calculates the Future Value, so you subtract the principal from the Future Value to find the interest.

Example C: In a continuously compounding interest account, if you invest \$150 at $2 \%$ compounded continuously for 5 years, you would earn $\$ 15.78$. The future value (money in the account at the end of 5 years with no additional deposits), you have the original investment of $\$ 150.00$ PLUS the earned interest of $\$ 15.78$ for a total of $\$ 165.78$. The continuously compounding interest formula calculates the Future Value, so you subtract the principal from the Future Value to find the interest.

