Compound Growth

by Sophia

WHAT'S COVERED

In this lesson, you will explore the role of compound growth in managing your finances. You'll see how interest rates apply to both money you owe and money that you've saved. Specifically, this lesson will cover:

1. The Power of Compound Growth

During your lifetime financial journey, you will want your money working for you. And to make sure this is happening, you need to understand calculations that you'll use to plan and track your financial progress. In this topic, we discuss the principle of compound growth, which is a powerful concept you can use to reach your financial goals.

BEFORE YOU START

You might be asking yourself, how do I get my money working for me? What actions will be most productive? First, you have to earn money. Second, you need to spend less than you earn. Third, you must actively save and invest wisely a portion of every dollar you earn. Only then can you benefit from the power of compound growth.

---

2. Overview of Interest

Interest is at the root of making your money work for you. Interest is the price paid for the use of money.

TERM TO KNOW

Interest

The amount paid to the lender for the use of his or her money. How much it costs to borrow is determined by the interest rate charged on the loan.

2a. Paying Interest on Borrowed Money

When you borrow money, you pay it back plus interest.

- If you borrow $10,000 from a bank to buy a car and then make your monthly loan payment, a portion goes to pay back what you originally borrowed (this is called the loan **principal**), and another portion goes to pay interest to the bank as the cost of borrowing the money.

- If the bank has some concern about whether you will pay back the money borrowed – based on your financial behavior – the bank may charge a much higher interest rate to compensate for the uncertainty – or risk – that the loan will not be repaid.
- If you have a stable, high-income job, you may pay less in interest than someone who has a lower unsteady income because lenders may view you as a lower borrowing risk and therefore may charge a lower interest rate.
- The purpose of the loan can also influence the amount of interest paid. If you borrow money for a vacation, you may pay a higher interest rate than if you take out a loan to buy a new house or car.

Although almost everyone borrows money at some point and pays interest, an easy way to get your money working for you is to lend it to others to generate interest for yourself. You can start to do this now through savings.

TERM TO KNOW

Principal

The amount of money you borrow (the loan) that must be repaid.

2b. Receiving Interest on Savings

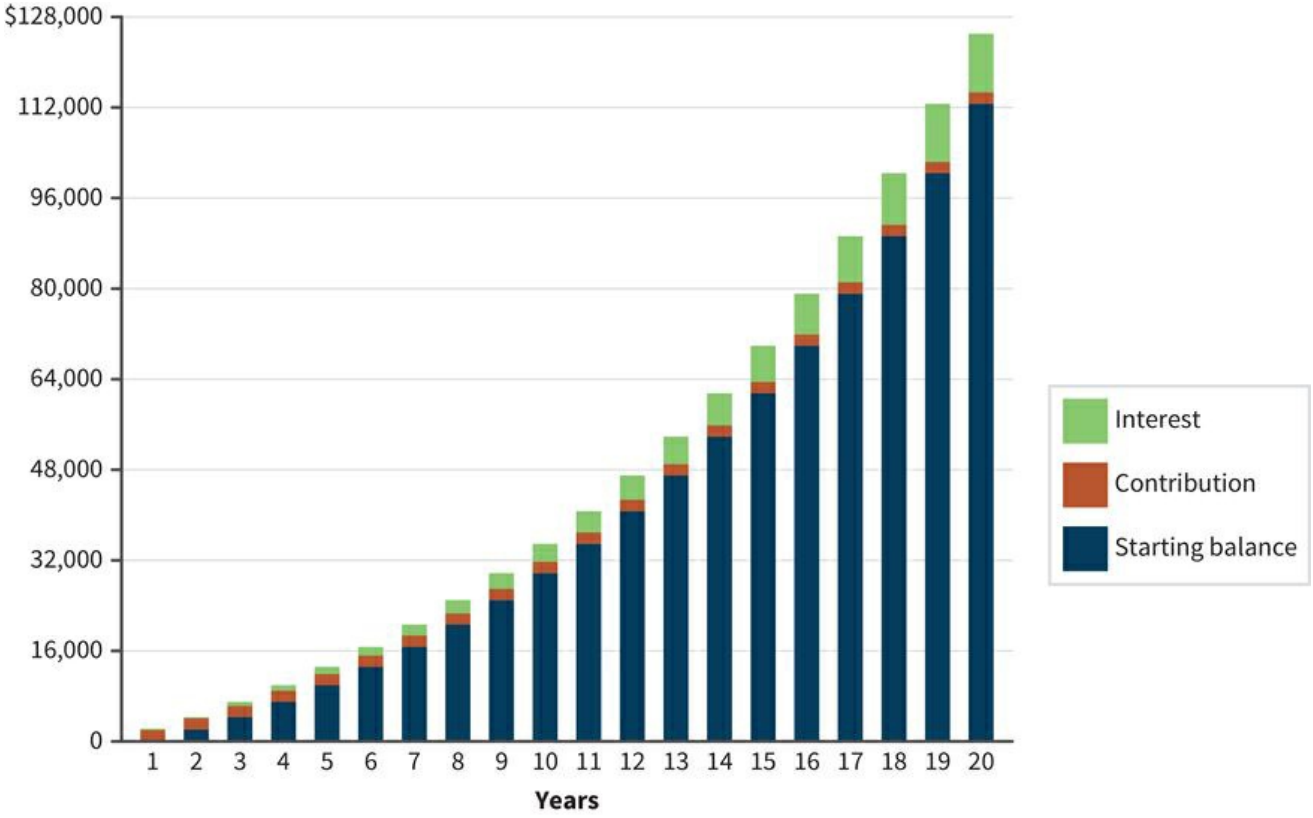
Rather than pay a bank interest for a loan, why not let others pay you? The more you can earn on your savings, the more wealth you can accumulate over your lifetime.

IN CONTEXT

Assume Emma saves $2,000 per year for 20 years. This is her contribution. The interest, which in this case is based on earning 10% each year (annually), is shown as the amount above the fixed contribution. See the column chart below. During the first few years, the interest is minimal, but by year 20, the amount of interest earned is quite large.

For simplicity, we are going to focus only on interest earned on savings in this discussion. Keep in mind, however, that there are other investments that generate income and wealth in forms other than interest.

- Emma contributed $40,000 over the 20-year period.
- She earned a total of $86,005 in interest during the 20-year period.
- At the end of 20 years, Emma had $125,005 in wealth!



3. Compound Growth

Money grows through the principle of **compound growth**, which means essentially that investment gains earned in the first time period are put to work in the second time period to earn additional investment returns. That is what is shown in the column chart above.

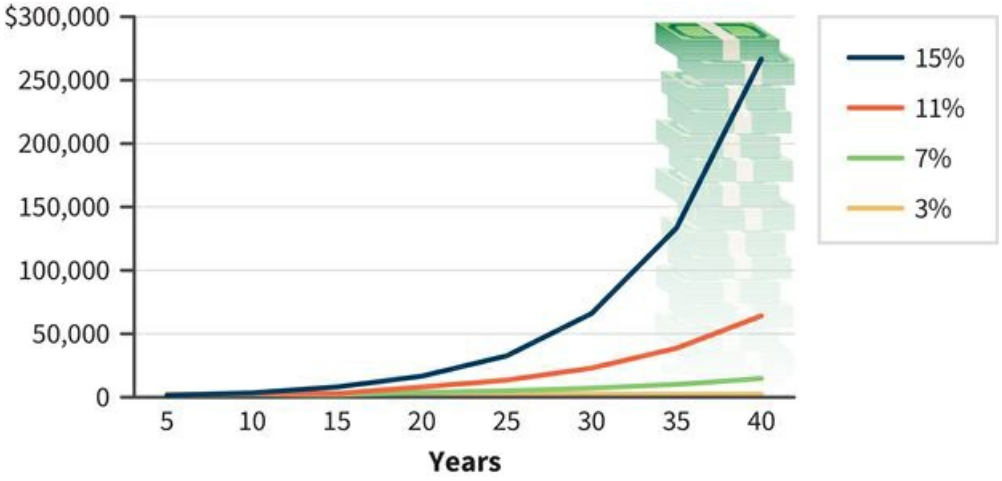
BIG IDEA

Initially, the amount of interest and investment returns your money earns may seem small. Compound growth starts out slowly. Over time, however, the amount of interest you earn starts to gain momentum. The longer you let your money work for you and the higher the interest rate earned, the more money you will accumulate.

In other words, to be productive, you want to apply the following three rules:

1. The longer you let your money grow, the more you will have in the future (assuming the same interest rate).
2. The more interest you earn, the more you will accumulate over time.
3. The higher the interest rate you want or need to earn, the more calculated (that is, well thought-out) risk you must take.

The line chart below shows how $1,000 invested at different interest rates will grow over a 40-year period. As you can see, the higher the interest earned, the greater your wealth will be in the future.



TERM TO KNOW

Compound Growth

Investment gains earned in the first time period are put to work in the second time period to earn additional investment returns.

---

4. Consider Interest Strategically

Interest can be one of your best friends or worst enemies – or both! No matter which it is, interest will constantly be working. You may only work 40 hours per week, but interest works weekends, nights, and holidays. It just keeps accruing and growing. That's great if you're earning interest, but a burden if you're paying it.

4a. Minimizing Interest Payments

The only way to stop interest is to eliminate the cause – the loan principal amount accruing interest. For example, if you want to stop interest from accruing to your credit card payment each month, you need to pay off your credit card debt in full. Along your lifetime financial journey, interest can be either a supportive tailwind or a stiff headwind that slows your progress. Your willingness to wait to spend money will often determine whether you pay interest or receive interest.

4b. The Advantages of Patient Planning

Some types of savings accounts have built-in restrictions and penalties that help you "wait" to spend your money.

- Some financial accounts have early withdrawal penalties. If you take your money out of the account before a certain time (months, years, or before a certain age), you will have to pay a penalty. An example is a bank or credit union certificate of deposit.
- Other financial products, like U.S. savings bonds, will not let you cash in the investment for at least one year from the time of purchase.

↱ EXAMPLE Amy was invited to go with her friends, one month from today, on a 4-day/3-night Caribbean cruise. The cruise costs $545. Amy has two options:

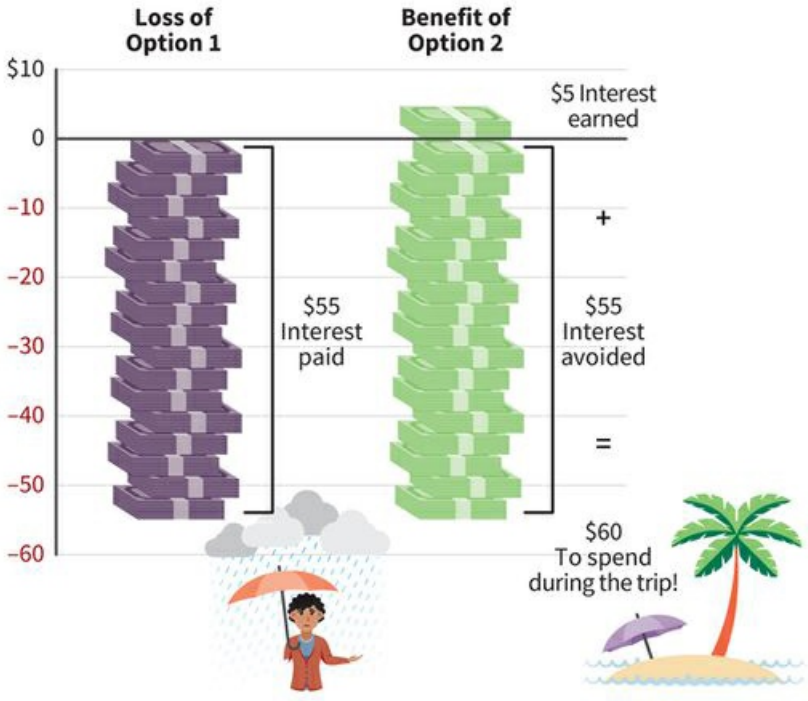
Option 1. Her first option is to borrow money by using her credit card to buy her ticket.

- The annual percentage rate (APR) on Amy's credit card is 18%, with a monthly periodic rate of 1.5%.
- Amy plans to pay $50 a month toward this debt.
- Amy will end up making credit card payments for the next 12 months and will pay back the $545 plus $55 of interest.

Option 2. Amy's second option is to postpone the trip and plan a cruise for the following year.

- If Amy waits, the ticket will likely still cost $545 (although she may be able to find a better deal because she'll have time to shop around).
- Amy will be able to save $50 per month instead of using this amount to pay off her credit card.
- If she deposits the money into an account with an annual percentage yield (APY) of 2.0%, she'll earn $5.48 in interest and will have $605.48 for the trip.

The difference between borrowing and paying interest (Option 1) and saving and earning interest (Option 2) is shown in the following illustration.



SUMMARY

It's difficult to deny the **power of compound growth**. If you're **paying interest on borrowed money**, you're compensating someone for the privilege of using their money. If you're **receiving interest on savings**, an institution is paying you for the privilege of using your money. The accumulation of interest starts out slowly, but then accelerates. That's the strength of the **compound growth** model. By graphing money earned versus time, you can see that compound growth is not a linear model.

It literally pays to **consider interest strategically**. In other words, to be the most productive, make interest work for you. If you **minimize your interest payments** on a loan through creative thinking, you can save money. If you invest money that collects interest (with reasonable levels of risk), you can earn money. Both cases represent the **advantages of patient financial planning**. Having an **overview of interest** in terms of saving and borrowing will be important as you study financial tools like credit cards and investments later on.

TERMS TO KNOW

Compound Growth

Investment gains earned in the first time period are put to work in the second time period to earn additional investment returns.

Interest

The amount paid to the lender for the use of their money. How much it costs to borrow is determined by the interest rate charged on the loan.

Principal

The amount of money you borrow (the loan) that must be repaid.