

The Power of Compounding

What will today's savings and investments be worth in the future? How much will you need to replace your current income in a given number of years? How do sums, which are invested on a regular basis and allowed to compound annually without withdrawals, grow?

Suppose you decide to invest \$1,000 annually. If you check the charts below, you will find the rates of return that you might earn. Adjacent to each rate of return will be the total value at the end of a given number of years. For example, \$1,000 invested annually at 7% over a 20-year period will grow to a value of \$40,995.

\$1,000 invested annually at:	Compounded annually, \$1,000 grows to these amounts after these number of years:			
	10	20	30	40
3%	\$11,464	\$26,870	\$47,575	\$75,401
4%	12,006	29,778	56,085	95,026
5%	12,578	33,066	66,439	120,800
6%	13,181	36,786	79,058	154,762
7%	13,816	40,995	94,461	199,635
8%	14,487	45,762	113,283	259,057
9%	15,193	51,160	136,308	337,882
10%	15,937	57,275	164,494	442,593

Rate of Return	Average annual return on original investment over this number of years:				
	5	10	15	20	25
3%	3.2%	3.4%	3.7%	4.0%	4.4%
4%	4.3	4.8	5.3	5.5	6.7
5%	5.5	6.3	7.2	8.3	9.5
6%	6.8	7.9	9.3	11.0	13.2
7%	8.1	9.7	11.7	14.3	17.7
8%	9.4	11.6	14.5	18.3	23.4
9%	10.8	13.7	17.6	23.0	30.5
10%	12.2	15.9	21.2	28.6	39.3
11%	13.7	18.4	25.2	35.3	50.3
12%	15.2	21.1	29.8	43.2	64.0

Build Your Savings

Look at the effect of compounding on a *monthly* savings plan. The chart below shows the future values of different regular monthly investments, for different periods of time, assuming an annual fixed investment return of 8%.

Monthly Investments	Number of Years				
	@ 8%	5	10	15	20
\$100	\$7,348	\$18,299	\$34,616	\$58,931	\$95,164
\$250	18,371	45,747	86,540	147,328	237,911
\$500	36,742	91,493	173,080	294,657	475,822
\$750	55,113	137,240	259,621	441,985	713,734
\$1,000	73,485	182,987	346,161	589,313	951,645

The Rule of 72 (Doubling)*

How long does it take \$1 to become \$2 at various rates of return? Simply divide 72 by the rate of return. For example, an investment earning 5% annually will double in 14.4 years, or 72 divided by 5. **This method of calculation is hypothetical, and there can be no assurance any amount would double in those time frames.*

The Rule of 115 (Tripling)*

How long does it take \$1 to become \$3 at various rates of return? Divide 115 by the rate of return. An investment earning 5% will triple in 23 years, or 115 divided by 5. **This method of calculation is hypothetical, and there can be no assurance any amount would triple in those time frames.*

Considering the growth potential of your money over time can help you develop a long-term financial plan. Remember what Benjamin Franklin once said, "Money makes money. And the money that money makes, makes money." No one can guarantee the performance of your investments, but you can put time and knowledge on your side.



Name, Designation(s)
Title

Company Name
Street Address
City, State Zip Code
Phone Number
Fax Number
E-mail Address

Time Is Money

The Growth Potential of Your Money over Time



planning your financial future can take time, but by understanding a few simple rules and having access to the right information, you can master the relationship between time and money.

A good understanding of basic investment principles can help you meet long-range financial goals, such as college funding or retirement planning. The following tables can help you learn more. They may be used individually; however, they are more valuable when used on an interrelated basis.

Make Time Work for You!

For example, assume Grace needs \$100,000 in 15 years to meet a particular financial obligation. She has an investment vehicle in mind that will return 7%, compounded annually. How much should be invested each year to accumulate the desired amount?

By consulting the *Return on Investment* chart on page 4, it can be determined that \$3,719 per year needs to be invested to reach a goal of \$100,000 in 15 years.

Once the goal is reached, Grace may now need \$650 per month as retirement income. By consulting the *Approximate Monthly Income from Specific Lump Sums* chart on page 2, a determination can be made that the \$100,000 must be invested at 8% to provide \$667 per month.

Examine the formulas and charts to determine which ones can help answer your financial planning questions, and help you meet your goals.

Note: Illustrations given are hypothetical only and not indicative of any particular investment's performance. Investment values will fluctuate due to market conditions; shares of particular investments, when redeemed, may be worth more or less than their original costs.

Approximate Monthly Income from Specific Lump Sums

How much monthly income can be expected from a lump sum invested at a particular rate of return when the principal is left untouched? See the table below:

Principal	Rate of Return						
	3%	4%	5%	6%	7%	8%	10%
\$100,000	\$250	\$333	\$417	\$500	\$583	\$667	\$833
200,000	500	667	833	1,000	1,167	1,333	1,667
300,000	750	1,000	1,250	1,500	1,750	2,000	2,500
400,000	1,000	1,333	1,667	2,000	2,333	2,667	3,333
500,000	1,250	1,667	2,083	2,500	2,917	3,333	4,167
600,000	1,500	2,000	2,500	3,000	3,500	4,000	5,000
700,000	1,750	2,333	2,916	3,500	4,083	4,667	5,833
800,000	2,000	2,667	3,333	4,000	4,667	5,333	6,667
900,000	2,250	3,000	3,750	4,500	5,250	6,000	7,500
1,000,000	2,500	3,333	4,167	5,000	5,833	6,667	8,333

The "Average" Benefit of Dollar Cost Averaging

Dollar cost averaging is the investment of a set dollar amount at set intervals to accumulate shares over the long term at an average price. These regular purchases may result in a favorable cost basis over a long period of time, potentially increasing returns. Profits and protection against losses due to declining markets are not guaranteed.

Consider your ability to make purchases through times of low prices. Investment returns and principal values will fluctuate due to market conditions so that redeemed shares may be worth more or less than their original costs.

Example: Investing \$100 per month for three months might buy 40 shares at an average cost of \$7.50, while the actual average share price for the

same period might be \$8.33, resulting in an average savings of \$.83 per share for a total of \$33.20.

Period	Regular Investment	Avg. Share Price/Pd.	Number of Shares Acquired
1	\$100	\$10	10
2	100	5	20
3	100	10	10
	\$300	\$25	40
Average share cost: \$7.50 (\$300/40)			
Average share price: \$8.33 (\$25/3)			

Dollar Cost Averaging in Reverse

To liquidate shares over a set period of time at the highest possible average price, fixed numbers of shares sold at set intervals generally result in a higher price per share than could be realized by the sale of varying numbers of shares to obtain a particular dollar amount. In the example, selling 10 shares per month results in a higher average redemption price per share (\$10) than selling a varying number of shares (averaging \$8 per share redemption price) to receive \$100 per month.

It is important to note that there can be no guarantee that, in periods of low price levels, this strategy will result in a higher price per share.

Income from 10 Shares Sold Per Month	Random Share Price	No. Shares Sold to Receive \$100 Per Month
\$100	\$10	10
50	5	20
100	10	10
200	20	5
100	10	10
50	5	20
\$600	\$60	75
Average redemption price per share		
\$10		\$8

Return on Investment

The three tables below may be used to estimate the returns of long-term savings and investments.

For example, the first table could be used to calculate the value of a tax-exempt bond portfolio, or a tax-deferred annuity or retirement account.

The second and third tables can be used to determine how much money needs to be saved in order to fund a long-term financial goal, such as college funding or retirement.

End-of-the-year values if you invest a \$10,000 single lump sum and allow it to compound annually:					
	5	10	15	20	25
3%	\$11,593	\$13,439	\$15,580	\$18,061	\$20,938
4%	12,167	14,802	18,009	21,911	26,658
5%	12,763	16,289	20,789	26,533	33,864
6%	13,382	17,908	23,966	32,071	42,919
7%	14,026	19,672	27,590	38,697	54,274
8%	14,693	21,589	31,722	46,610	68,485
9%	15,386	23,674	36,425	56,044	86,231
10%	16,105	25,937	41,772	67,275	108,347

A lump sum required today to equal \$100,000 at the end of a number of years:					
	5	10	15	20	25
3%	\$86,261	\$74,409	\$64,186	\$55,367	\$47,761
4%	82,193	67,556	55,526	45,639	37,512
5%	78,353	61,391	48,102	37,689	29,530
6%	74,726	55,839	41,727	31,180	23,300
7%	71,299	50,835	36,245	25,842	18,425
8%	68,058	46,319	31,524	21,455	14,602
9%	64,993	42,241	27,454	17,843	11,597
10%	62,092	38,554	23,940	14,864	9,230

Approximate annual investment required to equal \$100,000 at the end of a number of years:					
	5	10	15	20	25
3%	\$18,290	\$8,470	\$5,220	\$3,613	\$2,663
4%	17,751	8,009	4,802	3,229	2,309
5%	17,236	7,572	4,414	2,880	1,995
6%	16,736	7,157	4,053	2,565	1,720
7%	16,254	6,764	3,719	2,280	1,478
8%	15,783	6,392	3,410	2,024	1,267
9%	15,332	6,039	3,125	1,793	1,083
10%	14,890	5,704	2,861	1,587	924