

AI-01461 Power of Compounding

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| ⋮ Tags | Investing |
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Show in a table the power of compounding an initial capital of \$1000 and rate of return to 15% for 20 years with additional \$1000 per month contribution.

Here's a table showing the power of compounding for an initial capital of \$1,000 with a **15% annual return** over **20 years**, while making **monthly contributions of \$1,000**.

The formula used:

Where:

- = Future Value
- = Initial Capital (\$1,000)
- = Annual Interest Rate (15% or 0.15)
- = Number of Compounding Periods per Year (12 for monthly)
- = Number of Years
- = Monthly Contribution (\$1,000)

Let's calculate:

| Year | Start Balance | Contributions | Interest Earned | End Balance |
|------|---------------|---------------|-----------------|-------------|
| 1 | \$1,000 | \$12,000 | \$1,106 | \$14,106 |
| 2 | \$14,106 | \$12,000 | \$3,098 | \$29,204 |
| 3 | \$29,204 | \$12,000 | \$5,488 | \$46,692 |
| 4 | \$46,692 | \$12,000 | \$8,320 | \$67,012 |

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|----|-------------|----------|-----------|-------------|
| 5 | \$67,012 | \$12,000 | \$11,647 | \$90,659 |
| 6 | \$90,659 | \$12,000 | \$15,530 | \$118,189 |
| 7 | \$118,189 | \$12,000 | \$20,037 | \$150,226 |
| 8 | \$150,226 | \$12,000 | \$25,243 | \$187,469 |
| 9 | \$187,469 | \$12,000 | \$31,228 | \$230,697 |
| 10 | \$230,697 | \$12,000 | \$38,083 | \$280,780 |
| 11 | \$280,780 | \$12,000 | \$45,907 | \$338,687 |
| 12 | \$338,687 | \$12,000 | \$54,811 | \$405,498 |
| 13 | \$405,498 | \$12,000 | \$64,914 | \$482,412 |
| 14 | \$482,412 | \$12,000 | \$76,346 | \$570,758 |
| 15 | \$570,758 | \$12,000 | \$89,249 | \$672,007 |
| 16 | \$672,007 | \$12,000 | \$103,782 | \$787,789 |
| 17 | \$787,789 | \$12,000 | \$120,125 | \$919,914 |
| 18 | \$919,914 | \$12,000 | \$138,474 | \$1,070,388 |
| 19 | \$1,070,388 | \$12,000 | \$159,047 | \$1,241,435 |
| 20 | \$1,241,435 | \$12,000 | \$182,083 | \$1,435,518 |

Final Balance After 20 Years: \$1,435,518

- **Total Contributions:** \$1,000 (initial) + (\$1,000 × 12 × 20) = **\$241,000**
- **Total Interest Earned: \$1,194,518**

This table shows how compounding accelerates growth. Despite contributing only \$241,000, the power of compound interest grows it to over **\$1.43 million**.