### understanding COMPOUNDING INTEREST



Are there benefits to compounding interest? That depends if you are paying the interest or earning it.

Let's look at three scenarios.

## S C E N A R I C

What does the bank make on your money in your savings/money market account? This answer will shock those that have never considered what happens to your money on deposit at a bank. It may come as a wake up call, but this is how the banks make money, off your money!

Let's start by looking at the 50/30/20 Financial Rule. The concept is that 50% percent of your income is spent on your living expenses (this number does not fluctuate), 30% is discretionary money so that you can live life to the fullest, and 20% is what you should be putting away so you can party like a rockstar when you retire. Before the 20% part of the rule can apply the emergency fund must be created. My advice on an emergency fund is to estimate how long it will take you to find a job and put away the corresponding amount of expenses. This is an egotistical way of looking at your emergency fund, but you are the best judge of your abilities. I prefer to keep six months of income in cash, which is twice as long as I think it will take me to find another job at my current salary.

So, let's look at what the bank makes on my emergency fund money on an annual basis versus what they pay me. I have \$60,000 in my emergency fund at a national recognized bank in a money market account. I love that the bank refers to money market accounts as "high yielding". Who is earning the high yield? Maybe the banks are referring to it as high yielding because that is their portion. Having spent some time in the banking world, I can tell you from experience that the minimum return to the bank is 2% for the money on deposit. Yes, I said minimum because banks structure their deposit investment strategies differently. For every year they pay me \$150.00 for graciously parking my emergency fund, the bank earns \$1,050.00 (this is based on 2%, although I think it is more likely 5% or \$2,850). Banks are a business too, big business. Remember, this is an emergency fund, so this money never changes, and is always available for me if needed. Let's not forget the Bank is making compounding interest on my money year over year too.

#### SCENARIO

What do you pay in interest on your mortgage over time? Buying a home is one of the most exciting times of your life. The day has come and you step in to the title company to sign your life on the dotted line, after line, after line, and then it happens...the page where it is disclosed to you how much you are actually going to pay for your dream home before it becomes yours, free and clear. This is an OMG moment for everyone! This is usually your first introduction into what compounding interest over time can really add up to. The terminology used to describe this page is "mortgage amortization," I call it the reality of whom is benefiting the most from this transaction. Nevertheless, a few things are running through your mind as you see this page. First and hopefully foremost, how did this \$300,000 home just become a \$700,000 purchase? Most of us do not consider the total cost of a loan to mean the actual money you borrow plus all the interest you will pay over 30 years. We see a monthly mortgage we can afford and we sign on the dotted line.

As with the banks, mortgage companies are a business too, big business. Mortgage companies make compounding interest off lending money. \$400,000 in earnings and that is just one 30 year mortgage.

When is it time for you to make money? It's time...

# THREE

What could you earn on an investment yielding 10% over a 10 year period of time? The time has come for you to be on the receiving end of this equation. If you cannot beat them, join them, or become them.

It is time to spread your wings and find an investment that earns 10% annually on your money. The compounding interest concept is not for those who are seeking passive income, but for those whom are seeking long-term growth. I will first describe the concept in numbers and then demonstrate the power of compounding interest in a visual diagram.

The basic understanding of compounding interest is a result of diligence and patience. Diligence because the money must be deployed 90% of the time and patience because the reward comes over decades of investing. Let's apply this rule with a \$100,000 investment, earning 10% annually that is deployed 11 months out of each year (diligence) for 20 years (patience). If you are wondering why 11 months, that is because we are assuming that 90% of the time the funds are earning 10%. It should also be mentioned this investment is paying interest monthly, which magnifies the compounding aspect of this equation even further.

| YEARS<br>(Patience Rule) | MONTH IN THE YEAR<br>INVESTED<br>(90% Diligence Rule) | PRINCIPAL INVESTMENT<br>GROWTH<br>(Initial investment<br>\$100,000) | MONTH INTEREST<br>EARNED<br>(Based on a 10%<br>annualized yield) |
|--------------------------|---|---|--|
|                          | 1   | \$100,000.00  | \$833.33   |
|                          | 2   | \$100,833.33  | \$840.28   |
|                          | 3   | \$101,673.61  | \$847.28   |
|                          | 4   | \$102,520.89  | \$854.34   |
|                          | 5   | \$103,375.23  | \$861.46   |
| Year 1                   | 6   | \$104,236.69  | \$868.64   |
|                          | 7   | \$105,105.33  | \$875.88   |
|                          | 8   | \$105,981.21  | \$883.18   |
|                          | 9   | \$106,864.39  | \$890.54   |
|                          | 10  | \$107,754.92  | \$897.96   |
|                          | 11  | \$108,652.88  | \$905.44   |
|                          | 1   | \$109,558.32  | \$912.99   |
|                          | 2   | \$110,471.31  | \$920.59   |
|                          | 3   | \$111,391.90  | \$928.27   |
|                          | 4   | \$112,320.17  | \$936.00   |
|                          | 5   | \$113,256.17  | \$943.80   |
| Year 2                   | 6   | \$114,199.97  | \$951.67   |
|                          | 7   | \$115,151.64  | \$959.60   |
|                          | 8   | \$116,111.23  | \$967.59   |

Let's look at the numbers. Be patient as you scroll and watch your money grow.

| YEARS<br>(Patience Rule) | MONTH IN THE YEAR<br>INVESTED<br>(90% Diligence Rule) | PRINCIPAL INVESTMENT<br>GROWTH<br>(Initial investment<br>\$100,000) | MONTH INTEREST<br>EARNED<br>(Based on a 10%<br>annualized yield) |
|--------------------------|---|---|--|
|                          | 9   | \$117,078.83  | \$975.66   |
| Year 2                   | 10  | \$118,054.48  | \$983.79   |
|                          | 11  | \$119,038.27  | \$991.99   |
|                          | 1   | \$120,030.26  | \$1,000.25   |
|                          | 2   | \$121,030.51  | \$1,008.59   |
|                          | 3   | \$122,039.10  | \$1,016.99   |
|                          | 4   | \$123,056.09  | \$1,025.47   |
|                          | 5   | \$124,081.56  | \$1,034.01   |
| Year 3                   | 6   | \$125,115.57  | \$1,042.63   |
|                          | 7   | \$126,158.20  | \$1,051.32   |
|                          | 8   | \$127,209.52  | \$1,060.08   |
|                          | 9   | \$128,269.60  | \$1,068.91   |
|                          | 10  | \$129,338.51  | \$1,077.82   |
|                          | 11  | \$130,416.33  | \$1,086.80   |
|                          | 1   | \$131,503.13  | \$1,095.86   |
|                          | 2   | \$132,598.99  | \$1,104.99   |
|                          | 3   | \$133,703.98  | \$1,114.20   |
|                          | 4   | \$134,818.18  | \$1,123.48   |
| Year 4                   | 5   | \$135,941.67  | \$1,132.85   |
|                          | 6   | \$137,074.52  | \$1,142.29   |
|                          | 7   | \$138,216.80  | \$1,151.81   |
|                          | 8   | \$139,368.61  | \$1,161.41   |
|                          | 9   | \$140,530.02  | \$1,171.08   |
|                          | 10  | \$141,701.10  | \$1,180.84   |
|                          | 11  | \$142,881.94  | \$1,190.68   |
|                          | 1   | \$144,072.62  | \$1,200.61   |
|                          | 2   | \$145,273.23  | \$1,210.61   |
|                          | 3   | \$146,483.84  | \$1,220.70   |
|                          | 4   | \$147,704.54  | \$1,230.87   |
|                          | 5   | \$148,935.41  | \$1,241.13   |
| Year 5                   | 6   | \$150,176.54  | \$1,251.47   |
|                          | 7   | \$151,428.01  | \$1,261.90   |
|                          | 8   | \$152,689.91  | \$1,272.42   |
|                          | 9   | \$153,962.33  | \$1,283.02   |
|                          | 10  | \$155,245.34  | \$1,293.71   |
|                          | 11  | \$156,539.06  | \$1,304.49   |

| YEARS<br>(Patience Rule) | MONTH IN THE YEAR<br>INVESTED<br>(90% Diligence Rule) | PRINCIPAL INVESTMENT<br>GROWTH<br>(Initial investment<br>\$100,000) | MONTH INTEREST<br>EARNED<br>(Based on a 10%<br>annualized yield) |
|--------------------------|---|---|--|
|                          |   |   |  |
|                          | 1   | \$157,843.55  | \$1,315.36   |
|                          | 2   | \$159,158.91  | \$1,326.32   |
|                          | 3   | \$160,485.24  | \$1,337.38   |
|                          | 4   | \$161,822.61  | \$1,348.52   |
|                          | 5   | \$163,171.13  | \$1,359.76   |
| Year 6                   | 6   | \$164,530.89  | \$1,371.09   |
|                          | 7   | \$165,901.98  | \$1,382.52   |
|                          | 8   | \$167,284.50  | \$1,394.04   |
|                          | 9   | \$168,678.54  | \$1,405.65   |
|                          | 10  | \$170,084.19  | \$1,417.37   |
|                          | 11  | \$171,501.56  | \$1,429.18   |
|                          | 1   | \$172,930.74  | \$1,441.09   |
|                          | 2   | \$174,371.83  | \$1,453.10   |
|                          | 3   | \$175,824.93  | \$1,465.21   |
|                          | 4   | \$177,290.14  | \$1,477.42   |
|                          | 5   | \$178,767.55  | \$1,489.73   |
| Year 7                   | 6   | \$180,257.28  | \$1,502.14   |
|                          | 7   | \$181,759.43  | \$1,514.66   |
|                          | 8   | \$183,274.09  | \$1,527.28   |
|                          | 9   | \$184,801.37  | \$1,540.01   |
|                          | 10  | \$186,341.39  | \$1,552.84   |
|                          | 11  | \$187,894.23  | \$1,565.79   |
|                          | 1   | \$189,460.02  | \$1,578.83   |
|                          | 2   | \$191,038.85  | \$1,591.99   |
|                          | 3   | \$192,630.84  | \$1,605.26   |
|                          | 4   | \$194,236.10  | \$1,618.63   |
|                          | 5   | \$195,854.73  | \$1,632.12   |
| Year 8                   | 6   | \$197,486.85  | \$1,645.72   |
|                          | 7   | \$199,132.58  | \$1,659.44   |
|                          | 8   | \$200,792.02  | \$1,673.27   |
|                          | 9   | \$202,465.28  | \$1,687.21   |
|                          | 10  | \$204,152.49  | \$1,701.27   |
|                          | 11  | \$205,853.76  | \$1,715.45   |
|                          | 1   | \$207,569.21  | \$1,729.74   |
|                          | 2   | \$209,298.95  | \$1,744.16   |
| Year 9                   | 3   | \$211,043.11  | \$1,758.69   |
|                          | 4   | \$212,801.81  | \$1,773.35   |
|                          | 5   | \$214,575.15  | \$1,788.13   |
|                          |   |   |  |





| YEARS           | MONTH IN THE YEAR                | PRINCIPAL INVESTMENT          | MONTH INTEREST            |
|-----------------|----------------------------------|-------------------------------|---------------------------|
| (Patience Rule) | INVESTED<br>(90% Diligence Rule) | GROWTH<br>(Initial investment | EARNED<br>(Based on a 10% |
|                 |                                  | \$100,000)                    | annualized yield)         |
|                 | 6                                | \$216.363.28                  | \$1.803.03                |
|                 | 7                                | \$218.166.31                  | \$1.818.05                |
| Year 9          | 8                                | \$219,984,36                  | \$1,833,20                |
|                 | 9                                | \$221,817.56                  | \$1,848.48                |
|                 | 10                               | \$223,666.04                  | \$1,863.88                |
|                 | 11                               | \$225,529.93                  | \$1,879.42                |
|                 | 1                                | \$227,409.34                  | \$1,895.08                |
|                 | 2                                | \$229,304.42                  | \$1,910.87                |
|                 | 3                                | \$231,215.29                  | \$1,926.79                |
|                 | 4                                | \$233,142.08                  | \$1,942.85                |
|                 | 5                                | \$235,084.94                  | \$1,959.04                |
| Year 10         | 6                                | \$237,043.98                  | \$1,975.37                |
|                 | 7                                | \$239,019.34                  | \$1,991.83                |
|                 | 8                                | \$241,011.17                  | \$2,008.43                |
|                 | 9                                | \$243,019.60                  | \$2,025.16                |
|                 | 10                               | \$245,044.76                  | \$2,042.04                |
|                 | 11                               | \$247,086.80                  | \$2,059.06                |
|                 | 1                                | \$249,145.86                  | \$2,076.22                |
|                 | 2                                | \$251,222.07                  | \$2,093.52                |
|                 | 3                                | \$253,315.59                  | \$2,110.96                |
|                 | 4                                | \$255,426.55                  | \$2,128.55                |
|                 | 5                                | \$257,555.11                  | \$2,146.29                |
| Year 11         | 6                                | \$259,701.40                  | \$2,164.18                |
|                 | 7                                | \$261,865.58                  | \$2,182.21                |
|                 | 8                                | \$264,047.79                  | \$2,200.40                |
|                 | 9                                | \$266,248.19                  | \$2,218.73                |
|                 | 10                               | \$268,466.92                  | \$2,237.22                |
|                 | 11                               | \$270,704.15                  | \$2,255.87                |
|                 | 1                                | \$272,960.02                  | \$2,274.67                |
|                 | 2                                | \$275,234.68                  | \$2,293.62                |
|                 | 3                                | \$277,528.31                  | \$2,312.74                |
|                 | 4                                | \$279,841.04                  | \$2,332.01                |
|                 | 5                                | \$282,173.05                  | \$2,351.44                |
| Year 12         | 6                                | \$284,524.49                  | \$2,371.04                |
|                 | 7                                | \$286,895.53                  | \$2,390.80                |
|                 | 8                                | \$289,286.33                  | \$2,410.72                |
|                 | 9                                | \$291,697.05                  | \$2,430.81                |
|                 | 10                               | \$294,127.85                  | \$2,451.07                |
|                 | 11                               | \$296,578.92                  | \$2,471.49                |

| YEARS           | MONTH IN THE YEAR    |                     | MONTH INTEREST    |
|-----------------|----------------------|---------------------|-------------------|
| (ratience nule) | (90% Diligence Rule) | (Initial investment | (Based on a 10%   |
|                 |                      | \$100,000)          | annualized yield) |
|                 | 1                    | \$299,050.41        | \$2,492.09        |
|                 | 2                    | \$301,542.50        | \$2,512.85        |
|                 | 3                    | \$304,055.35        | \$2,533.79        |
|                 | 4                    | \$306,589.15        | \$2,554.91        |
| Year 13         | 5                    | \$309,144.06        | \$2,576.20        |
|                 | 6                    | \$311,720.26        | \$2,597.67        |
|                 | 7                    | \$314,317.93        | \$2,619.32        |
|                 | 8                    | \$316,937.24        | \$2,641.14        |
|                 | 9                    | \$319,578.38        | \$2,663.15        |
|                 | 10                   | \$322,241.54        | \$2,685.35        |
|                 | 11                   | \$324,926.88        | \$2,707.72        |
|                 | 1                    | \$327,634.61        | \$2,730.29        |
|                 | 2                    | \$330,364.90        | \$2,753.04        |
|                 | 3                    | \$333,117.94        | \$2,775.98        |
|                 | 4                    | \$335,893.92        | \$2,799.12        |
|                 | 5                    | \$338,693.04        | \$2,822.44        |
| Year 14         | 6                    | \$341,515.48        | \$2,845.96        |
|                 | 7                    | \$344,361.44        | \$2,869.68        |
|                 | 8                    | \$347,231.12        | \$2,893.59        |
|                 | 9                    | \$350,124.71        | \$2,917.71        |
|                 | 10                   | \$353,042.42        | \$2,942.02        |
|                 | 11                   | \$355,984.44        | \$2,966.54        |
|                 | 1                    | \$358,950.98        | \$2,991.26        |
|                 | 2                    | \$361,942.23        | \$3,016.19        |
|                 | 3                    | \$364,958.42        | \$3,041.32        |
|                 | 4                    | \$367,999.74        | \$3,066.66        |
|                 | 5                    | \$371,066.40        | \$3,092.22        |
| Year 15         | 6                    | \$374,158.62        | \$3,117.99        |
|                 | 7                    | \$377,276.61        | \$3,143.97        |
|                 | 8                    | \$380,420.58        | \$3,170.17        |
|                 | 9                    | \$383,590.75        | \$3,196.59        |
|                 | 10                   | \$386,787.34        | \$3,223.23        |
|                 | 11                   | \$390,010.57        | \$3,250.09        |
|                 | 1                    | \$393,260.66        | \$3,277.17        |
|                 | 2                    | \$396,537.83        | \$3,304.48        |
| Year 16         | 3                    | \$399,842.31        | \$3,332.02        |
|                 | 4                    | \$403,174.33        | \$3,359.79        |
|                 | 5                    | \$406,534.12        | \$3,387.78        |





| YEARS<br>(Patience Rule) | MONTH IN THE YEAR<br>INVESTED<br>(90% Diligence Rule) | PRINCIPAL INVESTMENT<br>GROWTH<br>(Initial investment<br>\$100,000) | MONTH INTEREST<br>EARNED<br>(Based on a 10%<br>annualized yield) |
|--------------------------|---|---|--|
|                          | 6   | \$409,921.90  | \$3,416.02   |
|                          | 7   | \$413,337.92  | \$3,444.48   |
| Year 16                  | 8   | \$416,782.40  | \$3,473.19   |
|                          | 9   | \$420,255.59  | \$3,502.13   |
|                          | 10  | \$423,757.72  | \$3,531.31   |
|                          | 11  | \$427,289.03  | \$3,560.74   |
|                          | 1   | \$430,849.78  | \$3,590.41   |
|                          | 2   | \$434,440.19  | \$3,620.33   |
|                          | 3   | \$438,060.53  | \$3,650.50   |
|                          | 4   | \$441,711.03  | \$3,680.93   |
| Year 17                  | 5   | \$445,391.96  | \$3,711.60   |
|                          | 6   | \$449,103.55  | \$3,742.53   |
|                          | 7   | \$452,846.08  | \$3,773.72   |
|                          | 8   | \$456,619.80  | \$3,805.17   |
|                          | 9   | \$460,424.97  | \$3,836.87   |
|                          | 10  | \$464,261.84  | \$3,868.85   |
|                          | 11  | \$468,130.69  | \$3,901.09   |
|                          | 1   | \$472,031.78  | \$3,933.60   |
|                          | 2   | \$475,965.38  | \$3,966.38   |
|                          | 3   | \$479,931.76  | \$3,999.43   |
|                          | 4   | \$483,931.19  | \$4,032.76   |
|                          | 5   | \$487,963.95  | \$4,066.37   |
| Year 18                  | 6   | \$492,030.31  | \$4,100.25   |
|                          | 7   | \$496,130.57  | \$4,134.42   |
|                          | 8   | \$500,264.99  | \$4,168.87   |
|                          | 9   | \$504,433.86  | \$4,203.62   |
|                          | 10  | \$508,637.48  | \$4,238.65   |
|                          | 11  | \$512,876.12  | \$4,273.97   |
|                          | 1   | \$517,150.09  | \$4,309.58   |
|                          | 2   | \$521,459.67  | \$4,345.50   |
|                          | 3   | \$525,805.17  | \$4,381.71   |
|                          | 4   | \$530,186.88  | \$4,418.22   |
|                          | 5   | \$534,605.11  | \$4,455.04   |
| Year 19                  | 6   | \$539,060.15  | \$4,492.17   |
|                          | 7   | \$543,552.32  | \$4,529.60   |
|                          | 8   | \$548,081.92  | \$4,567.35   |
|                          | 9   | \$552,649.27  | \$4,605.41   |
|                          | 10  | \$557,254.68  | \$4,643.79   |
|                          | 11  | \$561,898.47  | \$4,682.49   |

| YEARS<br>(Patience Rule) | MONTH IN THE YEAR<br>INVESTED<br>(90% Diligence Rule) | PRINCIPAL INVESTMENT<br>GROWTH<br>(Initial investment<br>\$100,000) | MONTH INTEREST<br>EARNED<br>(Based on a 10%<br>annualized yield) |
|--------------------------|---|---|--|
|                          | 1   | \$566,580.96  | \$4,721.51   |
|                          | 2   | \$571,302.46  | \$4,760.85   |
| Year 20                  | 3   | \$576,063.32  | \$4,800.53   |
|                          | 4   | \$580,863.84  | \$4,840.53   |
|                          | 5   | \$585,704.38  | \$4,880.87   |
|                          | 6   | \$590,585.25  | \$4,921.54   |
|                          | 7   | \$595,506.79  | \$4,962.56   |
|                          | 8   | \$600,469.35  | \$5,003.91   |
|                          | 9   | \$605,473.26  | \$5,045.61   |
|                          | 10  | \$610,518.87  | \$5,087.66   |
|                          | 11  | \$615,606.53  | \$5,130.05   |

Thank you for your patience as you scrolled to find out that your \$100,000 investment in a 20 year period grew to over \$600,000. Would you agree that seeing the numbers is eye-opening? For those of you that are visual learners, like me, this diagram below calls attention to what happens when you are not diligent and you allow your money to sit on the sideline in between investments. Time is money. For the one month each year (20 months) that your funds were not invested in this scenario, more than \$111,000 was not earned.



In conclusion, what side of the equation do you want to be on?

Banks make money through compounding interest. Mortgage companies make money through compounding interest. Shouldn't you start making money through compounding interest too?

### SHORT-TERM INVESTMENTS FOR LONG-TERM INVESTORS ightarrow

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