Building Wealth Over Time
By John Morton, Scott Niederjohn, and Signè Thomas

When you start your financial life on your own, building wealth for the future may be the last thing on your mind. After all, it is difficult enough to break-even at the end of the month on a starting salary. The opportunity cost of saving may be a spacious apartment, a new car, a big-screen TV, or a vacation. You may reject the very idea that saving for the future is important. A good life means getting together with friends and family, helping those in need, enjoying hobbies, and having a satisfying job. You can achieve all these goals more easily if you limit debt and build wealth. Buying less stuff that will lose value and more stuff that will gain value requires short-run sacrifices to reach long-term goals. The laws of economics apply to building wealth; there is no free lunch in saving and investing.

Financial Markets

Financial markets can help you build wealth. Markets, as you know, are physical or electronic systems through which buyers and sellers interact and determine prices. Prices in markets for stocks, bonds, and mutual funds reach equilibrium through the same process as any other good or service. Millions of bits of information flow and interact in market transactions, making it difficult to predict how current and future events will affect supply, demand, and equilibrium prices. The market process heavily influences the ultimate investment strategies that build wealth. While the Internet and online trading have transformed the way financial markets operate, they have not changed the basic risks and rewards of investing.

Rules for Building Wealth

Before IRAs and 401(k) plans, retirement was simpler—all people had to do was put in their time at work, retire, and collect

their pension checks. Between the company pension and Social Security, most retirees figured they had it made. If they had managed to save a little extra, it was just that: extra.

These days, that all has changed. For most workers, traditional defined-benefit pension plans that provide a fixed payment on a regular basis are a thing of the past. Few people expect Social Security to provide the majority of what they hope to spend in retirement. As a result, your ability to save and invest on your own will likely determine your financial situation in retirement.

Making use of compound interest, holding for the long term, taking advantage of employer matching, and diversification are widely regarded as successful strategies for building wealth. We discuss each strategy in detail below.

1. Save and invest early and often.

The amount of your initial savings or investment is called the principal. This is money you already have, and you are postponing spending it. The amount your savings earn is called interest, which is stated as a percentage. The amount your investments earn is called the rate of return because it includes interest, dividends, and capital gains. The interest rate and rate of return are expressed in yearly terms and are known as the annual percentage rate of return.

Rule of 70: # of years required to double your investment

$$\approx \frac{70}{\text{annual percentage rate of return}}$$

The reason for saving and investing early and often is because of compound interest. Compound interest is interest paid on interest. "The Rule of 70" is a way to illustrate compound interest. Divide 70 by the annual percentage rate of return; the answer equals the number of years it will take to double your money.[1] Let's say your principal is $10,000. The table below indicates how long it

will take to turn $10,000 into $20,000 at different rates of return: 1%, 5%, 7%, and 10%.

Annual Percentage Rate of Return	Rule of 70 Calculation	(Approximate) Years to Double Investment
1	70 ÷ 1	70
5	70 ÷ 5	14
7	70 ÷ 7	10
10	70 ÷ 10	7

You can see that the annual percentage rate of return makes a big difference. There is often a trade-off between risk and return.

Because time is the critical factor for compounding to work best, it is important to begin planning for retirement at an early age. Starting to save early allows savings to earn interest on the interest earned previously. Your money works for you. Allowing savings to grow over many years is also an important strategy for success.

Consider this simple illustration as an example: Let’s say you invest $200 a month beginning at age 25, and you earn 7 percent annually on that money. By the time you turn 65, you will have made 40 payments going into the investment, and at a 7% annual return you will have about $512,662.78 saved up. If you wait until you're 35 to begin saving, assuming the same monthly investment and rate of return, you will have amassed less than half that amount—about $242,575.21. This illustration simply shows the impact that a 10-year head start can make on your savings, thanks to the magic of compounding. You can do the math yourself with any interest rate or contribution using retirement savings tools you will find online. A particularly useful website is the Dave Ramsey Investing Calculator (which was used for the calculations in this example).[2]

Starting to save early is obviously a huge advantage to young people; however, this means that to build wealth over time, you have to hold on to your long-term savings. You cannot be dipping into them frequently, or they simply will not compound over time in the same way.

2. Invest for the long haul.

Many people say they want to invest for the long haul, but temptations get in their way. Everyone wants more stuff: a better car, a home of their own, or other things like a nice vacation.

Recognizing the need to save for retirement is the first step. The next tasks in prudent retirement planning include figuring out when you would like to retire, how much you would like to spend in retirement, and how much you need to save and invest now to get there.

How much money do you need to save for retirement? It's a simple enough question. But the answer is complicated because there are so many variables that can shape the answer. Some variables are known while others are impossible to know, and some can dramatically change the outcome. Still, planning for any goal as big and far away as retirement requires some working assumptions, and an understanding of how they may affect potential outcomes.

To simplify matters, financial advisors use this rule of thumb: During your working years, you should save enough to have at least eight times your salary just prior to retirement in order to be reasonably sure you will not outlive your savings during retirement. Fidelity Investments (a financial services corporation) further suggests that by age 35 you should have saved an amount equal to your current salary. Then you should have three times your salary by age 45, and five times your salary by age 55.[3]

Of course, your life might not fit neatly into such a precise formula. Your projected savings factor (the amount you need to contribute) will go down if you start saving earlier, save more, retire later, spend less in retirement, or generate higher investment returns. Do the opposite, and the savings factor you require will go up.

Once you have determined the required level of savings, set aside a portion of your income and put it in a retirement account. The most important retirement savings tools are explained below. You cannot be expected to know everything about these accounts, but you should explore these options when you begin earning a living. If you have already begun a career, then the time is now. Building wealth may be easier than you think!

Popular Retirement Savings Plans

The most popular ways to save for retirement are 401(k) accounts and Individual Retirement Accounts (IRA). There are subtle differences between these kinds of savings vehicles and between the two most popular kinds of IRAs—traditional and Roth.

401(k) Plan: This is a plan established by employers in which eligible employees may make tax-deductible contributions out of their salary to save for retirement. Employers offering a 401(k) plan may make matching contributions to the plan on behalf of eligible employees. Earnings accrue on a tax-deferred basis.

There are limits on the percentage of salary that may be placed into a 401(k). There are also restrictions on how and when employees can withdraw these assets, and penalties may apply if the amount is withdrawn while an employee is under the retirement age defined by the plan. Plans that allow participants to direct their own investments provide a core group of investment products from which participants may choose. Otherwise, professionals hired by the employer direct and manage the employees' investments.

403(b) Plan: This plan is very similar to the 401(k), but designed for employees of certain non-profit and public education institutions rather than profit-making firms.

Traditional Individual Retirement Account (IRA): This account allows individuals to direct pre-tax income, up to specific annual limits, toward investments that can grow tax-deferred. Contributions to the traditional IRA may be tax-deductible depending on the taxpayer's income, tax filing status, and other factors.

When you begin to receive distributions from a traditional IRA, the payouts are treated as ordinary income and therefore are taxable. Distributions are required to come out of the account starting in the year you turn 70 ½.[4]

Roth IRA: This is an individual retirement plan that bears many similarities to the traditional IRA, but with a different timing of taxes. The difference is that with a traditional IRA, the contributions into the plan are tax deductible and therefore there is a tax savings when you make the contribution. However, taxes must be paid on the income withdrawn from the plan during retirement. The situation is just the opposite for a Roth IRA. The funds paid into a Roth IRA are from income that has already been taxed, but the funds are permitted to grow tax-free and the withdrawals during retirement are exempt from taxes. Similar to other retirement plan accounts, non-qualified distributions from a Roth IRA may be subject to a penalty for early withdrawals.

Some firms also offer Roth 401(k) plans. These combine the employer-matching features of a 401(k) with the tax features of a Roth IRA.

If you take a "qualified" distribution from a Roth IRA, it will be tax and penalty free. Since qualified distributions from a Roth IRA are always tax free, some argue that a Roth IRA is more advantageous than a traditional IRA. The tradeoff concerns the timing of when the taxes are paid: up-front (Roth IRA) or later (traditional IRA).

If you expect higher tax rates in the future, you should put your money in a Roth IRA or Roth 401(k). In contrast, if you expect lower tax rates during your retirement, you should put your money in a traditional IRA or 401(k). Exhibit 1 summarizes the alternative savings and investment plans.

Exhibit 1: Differences among Retirement Saving Plans

	401(k)	Roth IRA	Traditional IRA
Tax Treatment	Retirement income taxed, but contributions during working life have tax advantages	Qualified retirement income tax free, but no tax advantages from contributions	Retirement income taxed, but contributions during working life have tax advantages
Employer of Individual	Employer sets up this plan	Individual sets up this plan	Individual sets up this plan
Contribution Limits	Employee contribution limit of $17.5K/yr for under 50 in 2013; $23K/yr for age 50 or above; limits are a total of pre-tax traditional 401(k) and Roth 401(k) contributions.	$5.5K/yr for age 49 or below; $6.5K/yr for age 50 or above in 2013; limits are total for traditional IRA and Roth IRA contributions combined. Cannot contribute more than annual earned income.	$5.5K/yr for age 49 or below; $6.5K/yr for age 50 or above in 2013; limits are total for traditional IRA and Roth IRA contributions combined. Cannot contribute more than annual earned income.

The Role of Social Security

Social Security can be a valuable supplement to your retirement savings, but it typically will not provide a comfortable lifestyle once you have stopped working. Although you may choose to begin receiving benefits at age 62, you get bigger monthly benefits by waiting until your full retirement age. If you can wait

even longer, your monthly benefits go up with each year of waiting up to age 70. For retirees of normal life expectancy, waiting is a good deal, because the total benefits collected during retirement will be greater. Social Security looks like an investment account in that you pay in during your working years and collect later, but the government does not actually invest what you pay in. Some political observers think Social Security will continue indefinitely; others disagree. Regardless of where one happens to fall in this debate, benefit formulas may be adjusted to reduce payouts in future years.

3. Don't leave money on the table.

Despite people's best intentions to save and invest regularly, and despite the incentive provided by employer-provided matching funds, many employees do not participate in employer-provided investment plans. For example, although 65 million workers participate in 401(k) plans, about 35 percent of eligible workers decline to do so. Moreover, people sometimes borrow money from 401(k)s for emergencies. The opportunity cost of such withdrawals is high. That money no longer grows, and it must be paid back to the plan. In 2011 the median size of a 401(k) for people over 55 was only $64,000—not enough for a comfortable living standard during one's golden years.

Why is it important to get started early? Let's use an investment calculator to address this question. A survey from the National Association of Colleges and Employers reported that in 2013, the average starting salary of a college graduate was $45,327.[5] Assume that a 22 year old college graduate invests 5 percent of her starting salary in a 401(k), 403(b), or IRA. Her employer does not match her contribution. This would be $2,266.25 per year (or $188.87 per month or $43.58 per week). If this account earns an annual return of 8 percent and if she does not touch the money until age 65, it would be an amazing $806,738 close to $1,000,000, even if she does not get an employer match or save more as her

income rises. This can easily be computed using the Dave Ramsey Investing Calculator online.[6] It may seem redundant when we keep saying "just do it!" (*Common Sense Economics*), but simply starting a savings and investment plan is hugely beneficial. If you can just get started, you can become much wealthier over your lifetime.

The U.S. stock market has had an average annual return of nearly 11 percent (or about 7 percent, after correcting for inflation).[7] Of course, these historical numbers do not guarantee similar results in the future. This is the risk of investing.

4. Diversify your investments.

The key to investing wisely is understanding that there is a trade-off between risk and return. The greater the risk, the greater the potential return. Risk is the chance that an investment will earn less than anticipated or will even lose money. Diversification means replacing a single risk with a number of smaller risks. Diversification is the practice of spreading money among different investments in order to reduce risk. If you choose your group of investments carefully, you may reduce risk and volatility without sacrificing much in the way of return.

When deciding how much risk to take on, you should consider your tolerance for risk and your time horizon. Risk tolerance is your ability and willingness to lose some or all of your investment in exchange for potentially greater returns. People who lie awake at night worrying about their investments have a low risk tolerance. Thus, they may want to settle for a lower return. On the other hand, entrepreneurs have a high risk tolerance. They may risk everything to pursue a new business or investment opportunity.

The amount of risk you are willing to take on also depends on your time horizon, which is the number of months or years you plan to keep the investment. The longer your time horizon, the more risk you can take. Longer-term investments can be volatile. As noted, the average annual percentage rate of return on stocks is about 7 percent after correcting for inflation. However, stocks lose

big—as much as 40 percent—in some years. Even the stocks of large companies lose money about once out of every three years on average.[8] If you need to take money out of an investment in a bad year, you could be in trouble. But if you are invested for the long term, you can ride out this volatility.

There are many types of investment risk. We'll look at market price risk, business risk, inflation, risk, political risk, interest rate risk, and fraud risk.

- Market price risk is the chance that the price of an investment will decrease because of changes in supply—or more likely, changes in demand for that security. Few investors can consistently predict the ups and downs in securities markets.
- Business risk is the chance that a business or government will fail or be less profitable than expected. Because the federal government can print money, federal debt is considered safe. The same cannot be said for state or local government debt or for corporate debt.
- Inflation risk is the possibility that the return on an investment will be less than inflation, the general rise in the price of goods and services. For example, federal government bonds have no business risk, but their annual rate of return can be less than the annual rate of inflation.
- Political risk is the risk that a government action such as a change in corporate taxes, regulations, wars, or a change in trade restrictions will hurt an investment.
- Interest rate risk is particularly relevant for bonds. When interest rates rise on new bonds, the value of existing bonds decreases because investors switch their money to newly issued bonds to receive the higher yields. The demand for existing bonds decreases and thus the price of existing bonds falls.

- Fraud risk is the risk that a seller misrepresents the facts about an investment. If an investment seems too good to be true, it probably is. So, if an investment promises a large gain with little pain, watch out.

Low-Risk Savings Choices

When you save, you want to be able to access your money quickly and without penalty. While these choices give you safety, the trade-off is that the interest rates are low:

- **Bank and credit union savings accounts:** These accounts are safe and flexible. In 2015, the accounts were insured by the federal government up to $250,000.[9] You can withdraw your money at any time without penalty. The trade-off is the interest rates are low—in recent years lower than the rate of inflation.
- **Certificates of deposit (CDs):** These accounts are also federally insured, but in order to earn higher interest, you must give up some flexibility. You must tie up your money for a specific time period ranging from a few months to six years. If you withdraw your money early, you must pay a penalty. In recent years the interest rates of CDs have been low, although they are higher than regular savings accounts.[10] A good way to improve your interest rate is to search on a website such as Bankrate.com for the highest rates. You can open a CD online at any federally insured bank. You will find that many online banks offer higher interest rates than the brick-and-mortar banks in your community.
- **Money market mutual funds:** Mutual funds pool money from many customers to make investments. Money market mutual funds invest their customers' money in short-term debt securities such as U.S. Treasury bills and commercial paper. Corporations sell commercial paper to meet short-

term debt obligations of less than 270 days.[11] Although money market mutual funds are not insured by the federal government, very few people have ever lost money in them. However, it is not worth the small increased risk unless money market mutual funds pay higher interest rates than federally insured savings accounts.

Longer-Term Investments

An investment is designed to grow your money over the longer term. Stocks and bonds are the most popular investment vehicles. It is important to understand the differences between the two.

- **Bonds:**

  A bond is a loan to a government, government agency, or corporation. The bond pays you interest at a fixed rate. It has the date when the principal of the loan will be paid back; this is called the maturity date. Let's say you buy a $10,000 corporate loan which pays 5 percent interest and has a maturity date of 2035. The bond will pay you $500 a year in interest, and in 2035 you will receive your original $10,000 back. You do not have to keep the bond until 2035; you can sell it to anyone who wants to buy it.

  Bonds have two kinds of risk. First, the government or corporation you lent your money to can fail. The federal government will not fail, but the trade-off is that its bonds pay the lowest interest rate. Second, if interest rates go up, the value of your bond will decline. You can keep the bond until its maturity and receive the principal, but you will sacrifice future interest on new investments. On the other hand, if interest rates decline, the value of your bond will increase. Hence, it makes sense to buy a long-term bond when interest rates are high.

Bond-rating firms such as Standard & Poor's (S&P) and Moody's give bonds safety ratings. Bonds with good ratings pay lower interest rates than poorly rated bonds. As the financial upheaval in 2007-2008 illustrate, these ratings are not always reliable.

- **Stocks:**

  Stocks are riskier than other investments (such as bonds), but stocks have the highest overall annual rate of return over the years. As individuals near retirement, they should begin to shift their investments from stocks to bonds to reduce risk. When you buy a stock, you become a part owner of the corporation. You can make money in two ways. First, as a part owner, you share the profits of the corporation with the other owners, who are called shareholders. The profits from stocks are paid out in the form of dividends, or kept by the corporation to grow it—or (most often), both. Also, as the value of a corporation increases, the price of its shares of stock may rise too. The value of shares of stock is determined by supply and demand and is affected by multiple events and attitudes. If the value of your stock goes up, you may want to sell your shares and get capital gains, which is the difference between the amount you paid for the stock and the amount you sold it for. If the value of your stock goes down and you decide to sell it, the difference in prices is called a capital loss.

Mutual funds provide a popular vehicle for investment in both bonds and stocks. A mutual fund obtains a pool of money by accepting payments from thousands or even millions of people. The mutual fund company invests this money in financial assets such as stocks and bonds. By buying small amounts of many different securities rather than just a few stocks and bonds, mutual

funds allow people to diversify their investments. If the securities held by a mutual fund rise in value, all investors will share in that capital gain. If the stocks held by the mutual fund pay dividends, all investors will share them. If the bonds pay interest, all investors will share the interest payments. The amount an investor gains or loses depends on the number of shares owned. The current share prices of most mutual funds are published daily.

The question is, which of the more than 18,000 mutual funds should you buy? There are more mutual funds than stocks. There are different types of mutual funds: equity funds, bond funds, sector funds, regional funds, small company funds, energy funds, international funds, and index funds. There are funds that charge a sales commission called a load, and there are no-load funds which do not charge a sales commission. Some funds have large expenses while others have very low expenses.

Investing Wisely

The process of saving and investing may seem complicated, frightening, and time consuming to a new investor. In the readings, videos, and assignments in this module you will see a lot of information. The good news is that the advice can be summarized in these three tips:

1. Try to save as much as you can each month. Build your emergency fund by opening a regular savings account at a bank or credit union or by opening an account with a money market mutual fund. Compare the interest rates of savings accounts and money market mutual funds and go with an account with the highest rate. As your savings grow and you feel your emergency fund is sufficient, you may want to buy a CD or open a mutual fund account to get a higher rate of return. Money in these accounts will be for intermediate savings goals.
2. Start to fund your retirement. Find out if your employer offers a 401(k) or 403(b) plan, and if so, whether your

employer will match some or all of your contributions. Take full advantage of the match. If your employer does not offer a 401(k) or 403(b) plan, open a traditional or Roth IRA. A Roth IRA is better for young people because the many years of contributing to it will allow you to accumulate a large pot of tax-free money. Although you must pay income taxes on your contributions, you will pay no taxes on money withdrawn after age 59 ½.[12] If you can afford it, invest in both a 401(k) and a Roth IRA.

3. Invest for your retirement and other long-term goals with a broadly based, low-cost, equity index mutual fund. The managers of index mutual funds buy and sell stocks by the rules and do not actively manage the funds. Evidence over the years, summarized in *Common Sense Economics*, shows the average annual rate of return on index funds beats almost all actively managed funds in the long run. Two types of index funds to consider are funds that track the Standard & Poor's 500 stock index (S&P 500 funds), and funds that track the total stock market (total market index funds).

When researching index funds, check the funds' track records and expenses. Buy index funds with low expenses because every dollar you pay in expenses is a dollar that is not compounding for you. A few large funds to look for are:

- Vanguard Total Return Stock Index Fund
- Fidelity Spartan Total Market Index Fund
- T. Rowe Price Total Equity Market Fund

There are many more. The key is to get started as soon as possible.

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[1] See footnote 5 of part 4 for the Rule of 70 in *Common Sense Economics*: Part 4: Element 8.

[2] "Investing Calculator," *Dave Ramsey*, accessed June 12, 2015, http://www.daveramsey.com/blog/investing-calculator/#/entry_form.

[3] "How much do you need to retire?," *Fidelity Investments*, accessed June 12, 2015, https://www.fidelity.com/viewpoints/retirement/8X-retirement-savings.

[4] "IRA FAQs - Distributions (Withdrawals)," *IRS*, accessed June 12, 2015, http://www.irs.gov/Retirement-Plans/Retirement-Plans-FAQs-regarding-IRAs-Distributions-(Withdrawals).

[5] "Salary Survey," *National Association of Colleges and Employers*, accessed June 12, 2015, https://careers.washington.edu/sites/default/files/all/editors/docs/2013-september-salary-survey.pdf.

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[7] "The Callan Periodic Table of Investment Returns," *Callan*, accessed June 12, 2015, https://www.callan.com/research/files/989.pdf.
[8] Ibid.

[9] Geffner, Marcie. "FDIC insures bank deposits to $250,000," Bankrate, accessed June 12, 2015, http://www.bankrate.com/finance/savings/fdic-insures-bank-deposits-to-250-000-1.aspx.

[10] Lerner, Michele, "CD rates to slowly rise in 2015," *Bankrate*, accessed June 12, 2015, http://www.bankrate.com/finance/cd/cd-rates-forecast.aspx.

[11] "Definition of Commercial Paper," http://www.investopedia.com/terms/c/commercialpaper.asp.

[12] IRA FAQs - Distributions (Withdrawals), accessed June 12, 2015, http://www.irs.gov/Retirement-Plans/Retirement-Plans-FAQs-regarding-IRAs-Distributions-(Withdrawals).