

The Stan Clark Financial Team

Asset Allocation: Your most important investment decision

With investing, your first and most important decision is how to divide your money into different types of assets. This is called *asset allocation*. Here we will discuss what asset allocation means, the various types of assets, and how they differ. Then, we'll look at how to decide the best asset allocation for you.

There are many ways of classifying assets, so it can be confusing. The most basic division is by *asset class*. Almost every investment can be broken down into one of two basic asset classes: *equities* or *fixed income*. If not one of these, it is usually a blend of the two. These two asset classes are also called *stocks* and *bonds*, different words for essentially the same thing.



Equities and fixed income differ greatly and the balance between them dramatically affects the risk and return of your portfolio. Because the balance is so important, you need to focus on this first. To do so, it helps to know what equities and fixed income are – and how they compare.

Equities represent *ownership in a business*. The value of a stock is the value of a business, less any debt the business might have. Owners of stocks own a share of the profits of the business; these future profits ultimately determine the value of the business.

With **fixed income**, rather than being an owner, you are a *lender*. Usually with fixed income, you are paid a fixed rate of interest. The income and principal can be guaranteed by a government, or an obligation of a company. Fixed income can also vary by the *term*, meaning how long before your money is supposed to be returned to you. Fixed-income investments include things like Treasury bills (T-bills), bonds, savings accounts and term deposits.

Risks and returns of equities vs. fixed income

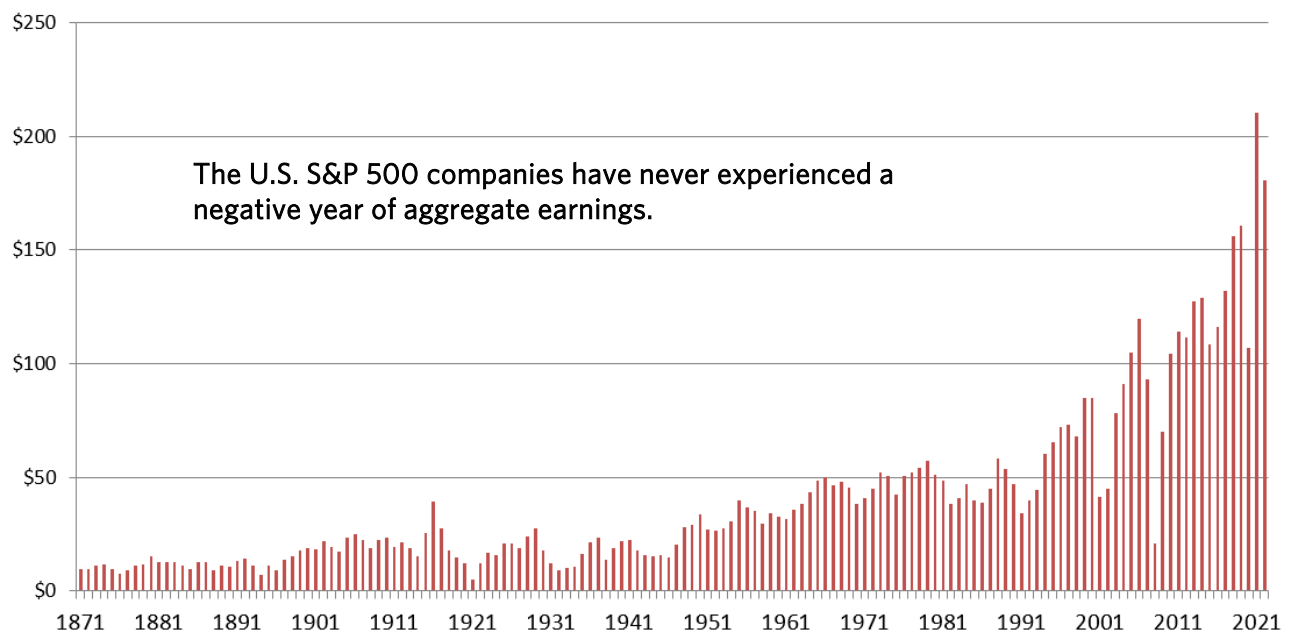
The main source of returns for equities is the profits or earnings those businesses make. For any company, future profits are very uncertain. Every company faces competition. It's a dog-eat-dog world – and often it's hard to know who will be the diner and who will be the dinner!

However, if you look at all companies *together*, the total profits are much more stable. One company's decline is usually another company's gain.

The earnings of the entire economy or for a diversified group of large companies are much more stable and reliable than those of any individual company.

In fact, as shown on the following page, according to Nobel Prize winner Robert J. Shiller, since reliable data became available in 1871, **the U.S. S&P 500 companies have never experienced a negative year of aggregate earnings.**

S&P 500 - Real Earnings 1871-2022



Still, aggregate earnings do fluctuate. One of the main causes of this is the *business cycle*: the ebb and flow of the economy as it expands and contracts. The normal course of the economy is expansion. Contractions usually last six to nine months, and occur two to three times in a decade. That means 80% of the time, the economy is expanding.

Company profits tend to fall when the economy contracts. But aggregate declines are usually limited and they typically recover quickly. This is because companies can adjust to contractions and restore profits by cutting costs. Over longer periods, profits can rise at a different pace than the economy, depending on how the economic pie is split between wages, profits and taxes. Improvements in productivity are a key to increasing profits faster than the economy.

Stocks trade at prices that are a multiple of past or expected future earnings, commonly known as the *price-to-earnings ratio* (P/E). Over the past 152 years, this multiple has averaged around 16.0 times past earnings, according to the data by Shiller. During optimistic times or when interest rates on fixed income are low, stocks trade at a higher multiple. During pessimistic times or when interest rates are high, stocks trade at a lower multiple. Add human psychology to the mix, and you can get huge swings in stock prices from one year to the next. Over the longer term – five to 10 years or more – the swings mostly cancel each other out. This levelling leaves equity investors with longer-term returns linked to the overall profits the companies have made.

With fixed-income investments, your returns are usually set when you invest. For government bonds, the returns tend to be just slightly above the expected inflation. The risk is that the *actual* inflation may be higher than expected, maybe even higher than the entire return of the bond. Here, you would lose purchasing power. For fixed-income investments which are *not* government-guaranteed, the interest rate is usually higher – allowing for the risk that the principal and interest might not be paid back.

Stocks vs. bonds over the past 152 years

In Aesop's fable *The Tortoise and the Hare*, slow and steady wins the race. But for investing, slow and steady can be a recipe for near-certain losses.

Let's look at stocks vs. bonds returns for the past 152 years¹. Think of *The Tortoise and the Hare* as a story about asset allocation: of fixed-income investments, which appreciate slowly and appear reliable; and of stocks, which can appreciate strongly and quickly, but appear risky. Which is your best bet? The answer depends on what kind of race you're running.

The past 152 years have been wildly volatile: inflation, deflation, two global financial crises, the Great Depression, two World Wars, embargoes, assassinations and two worldwide pandemics. We often forget how frightening these things seemed at the time. Although the world may seem scary now, it's likely that the period ahead won't be all that different from some periods we've experienced in the past. History often repeats itself to some extent; you just don't know which part of the past you will get! But the past can inform the future. By studying longer-term history, you can get a good feel of the range of possible outcomes going forward.

The data show that, over the past 152 years, with stocks you would have enjoyed average annual growth of 9.5%, and an inflation-adjusted (real) return of 7.4%. Over the same period, fixed-income investments averaged 4.5%, or real returns of just 2.4% per year. So, on an annual basis the real returns from equities were three times higher than those of bonds. If you started with \$100,000 in bonds, this would have grown by about \$49,000 after 20 years, using real returns. That same amount invested in stocks would have grown by \$306,000 – more than six times as much.

Here's a table showing the growth in stocks vs. bonds over the past 152 years:

152-Year Returns			Growth in stocks vs. bonds 1871 to 2022				
	Average Nominal Returns	Average Real* Returns	Average real growth from \$100,000**				
			1 Year	5 Years	10 Years	15 Years	20 Years
Stocks	9.5%	7.4%	\$7,393	\$47,101	\$112,165	\$187,523	\$308,811
Bonds	4.5%	2.4%	\$2,401	\$10,023	\$19,953	\$30,459	\$49,129
Inflation	2.1%						
Difference in growth (\$)			+\$4,992	+\$37,078	+\$92,212	+\$157,064	+\$259,681
Difference in growth (x)	2.1x	3.1x	3.1x	4.7x	5.6x	6.2x	6.3x

* "Real" returns are nominal returns after subtracting inflation

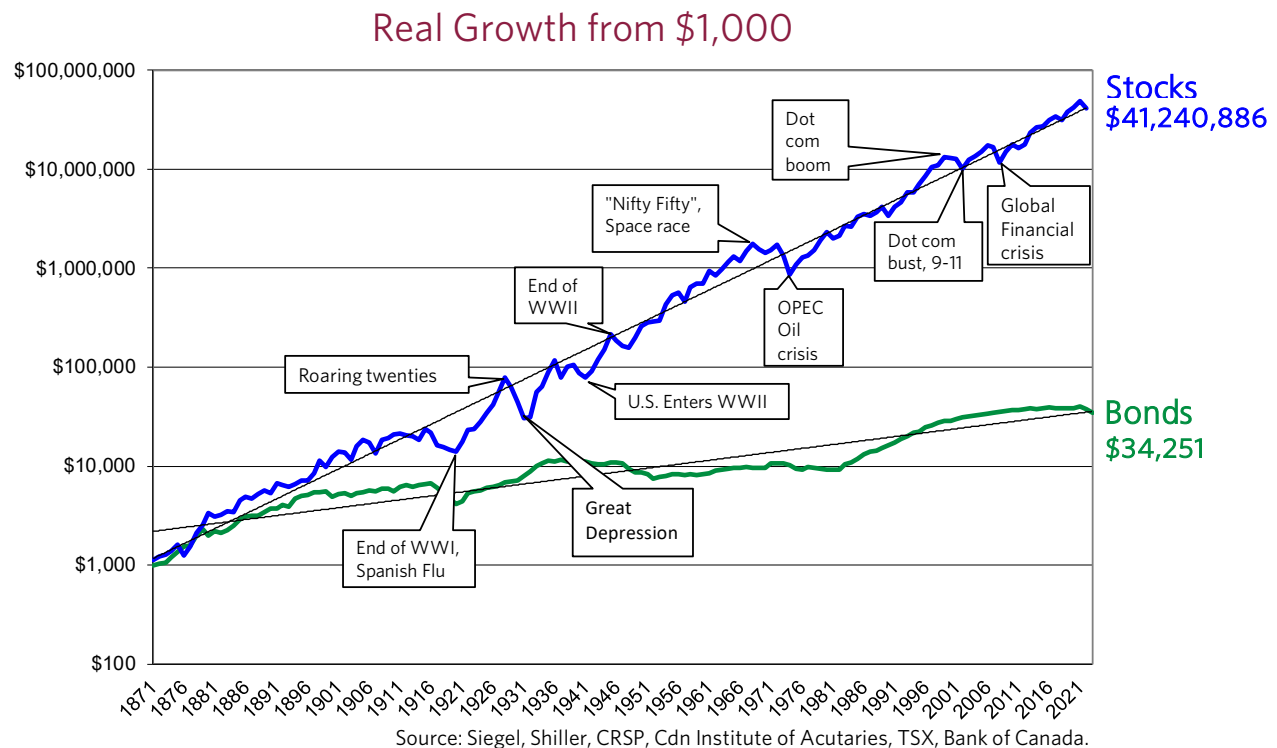
Source: Siegel, Shiller, CRSP, Cdn Institute of Actuaries, TSX, Bank of Canada.

** "Real growth from \$100,000" for 5 to 20 years is the median real growth, showing the effect of compounding.

You may be asking: "But aren't stocks much riskier than bonds?" Yes and no. The stock market is volatile in the short term, making stocks seem risky. But if you invest for the longer term, say 10 years or more, history shows that up markets have almost always more than offset down markets, giving reliable returns for stocks after inflation. We'll look at this in more detail below.

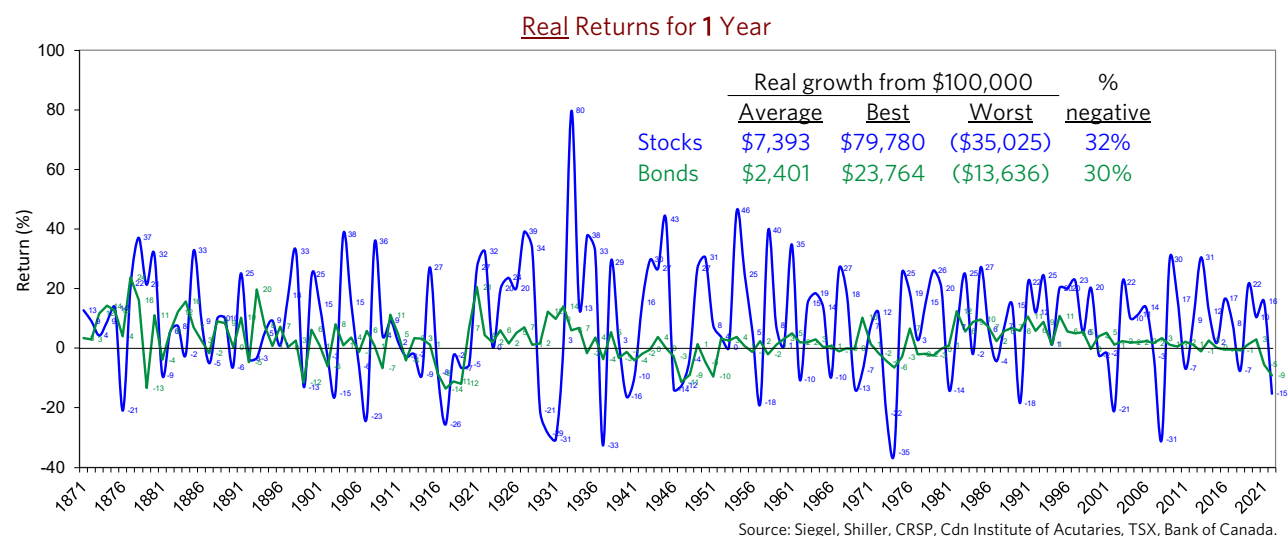
¹ Accurate data on U.S. stocks are available going back to 1871; and on Canadian stocks to 1924. See Appendix for more information on data sources used in this paper.

Here's a graph showing 152 years of growth in stocks vs. bonds:



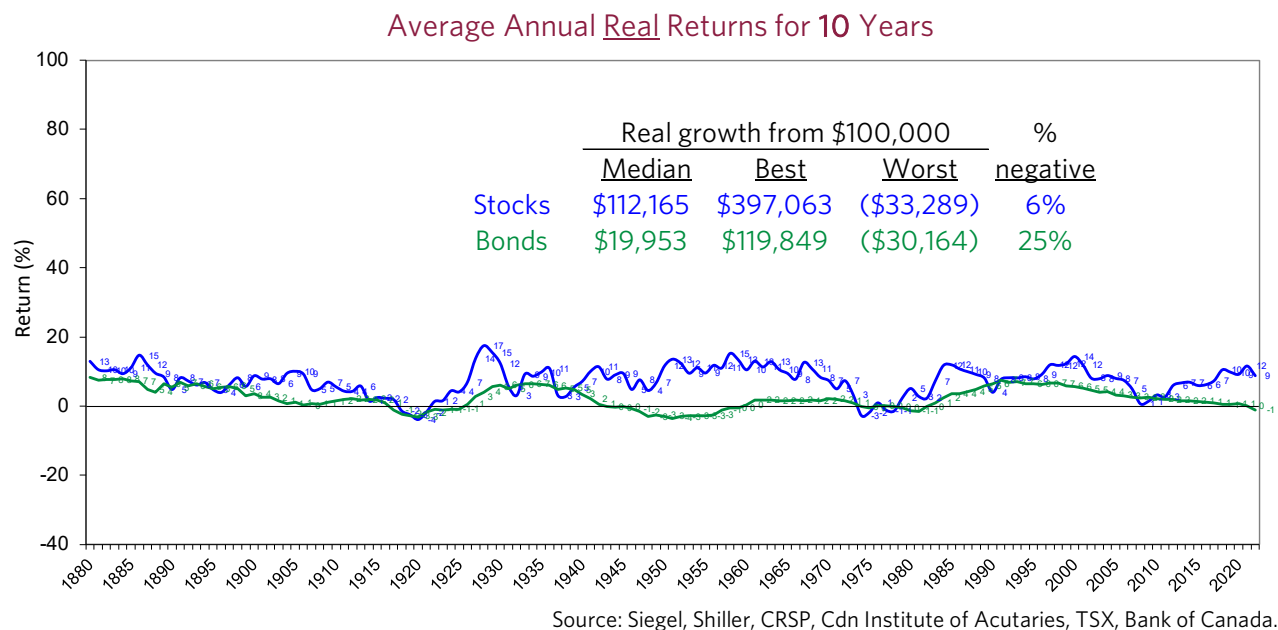
The 152-year perspective above shows the huge difference in returns over time from stocks vs bonds. You can also see that stocks fluctuate more, although the fluctuations don't look too bad over this long period.

The chart below shows the same 152 years of real returns, but over one-year periods to display more clearly the variation in short-term returns:



When you look at one-year periods you can see that returns from stocks vary much more than those from bonds. So yes, stocks are indeed more risky over one-year periods. However, when you look at slightly longer terms, as on the next chart, you find the variation falls as most down years with stocks are more than made up for with the up years.

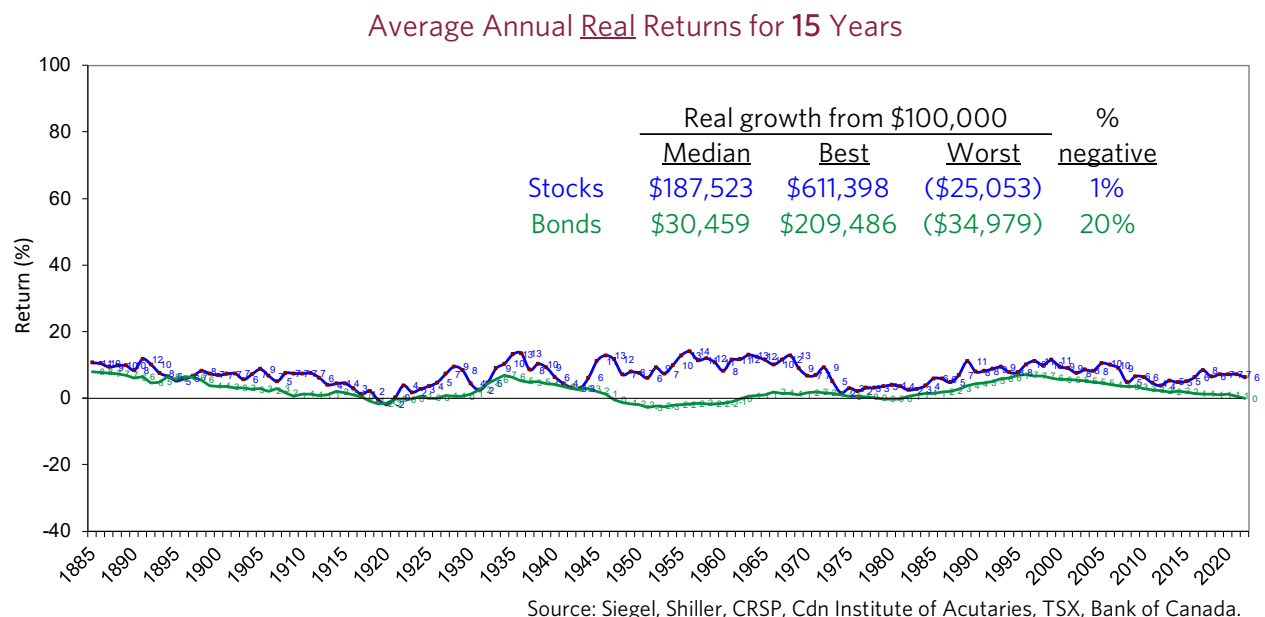
The following chart shows real returns over 10-year periods:



Here you can see a couple of things. First, the likelihood of not beating inflation fell considerably with stocks but remained high with bonds. The chance of losing money over any 10-year period was about four times greater for bonds than it was for stocks ("% negative" column). Second, you can see that the potential losses from bonds are nearly the same as stocks over 10 years ("Worst" column), while the average returns are only a third as much ("Median" column).

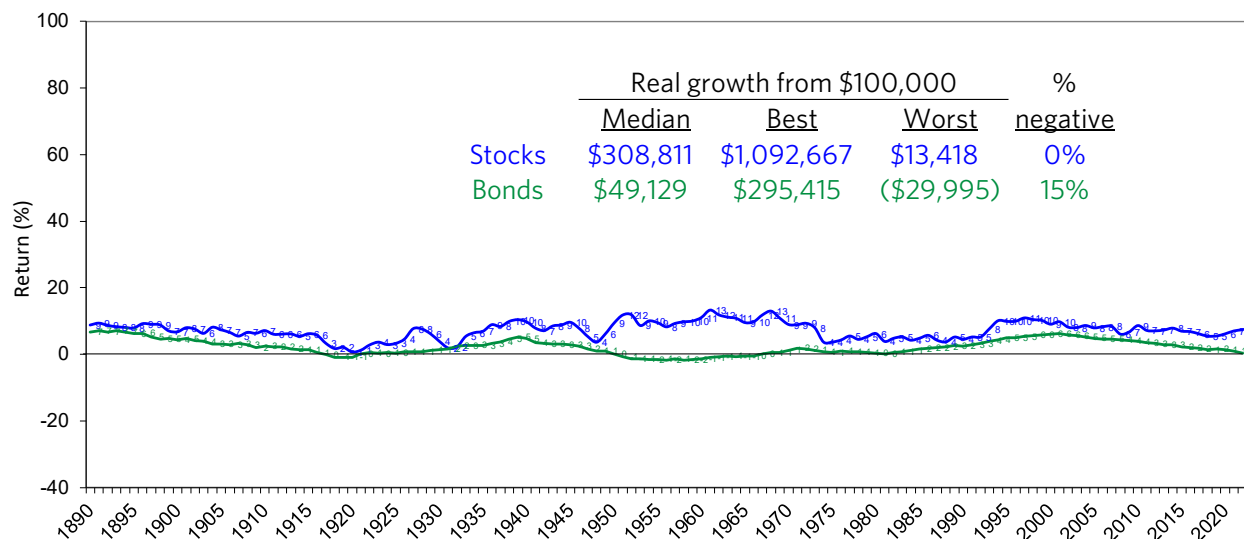
Remember these are *real* returns, which means returns *after* inflation. Inflation is what makes bonds riskier over longer terms.

For 15-year periods (below) the worst return for bonds was 40% lower than the worst period for stocks. The chance of losing to inflation was 20 times as high.



And over 20-year periods (below), these differences became even more pronounced. The worst return for stocks over 20 years was a profit of \$13,000 above inflation, compared to a nearly \$30,000 real loss for bonds.

Average Annual Real Returns for 20 Years



Source: Siegel, Shiller, CRSP, Cdn Institute of Actuaries, TSX, Bank of Canada.

So, based on history, the longer your investment horizon, the less risky stocks are, and the riskier bonds become by comparison. At the same time, the extra returns from stocks vs. bonds grow dramatically.

In summary, depending on your needs, both the tortoise and the hare can be ideal. The key takeaway here is that one type of asset isn't always better than another. **How long you can invest for is critical in determining the right mix for you.** If you have only a few years to invest, then your money should be mostly in fixed income. If you have savings earmarked for needs five to 10 years or more from now, consider investing more in stocks.

The best asset mix for your needs

So we now know that money you need in the short term should mostly be in fixed income, and money you don't need for a long time can go mostly into equities. But life is more complex than just now vs. a long time from now. Fact is, people have needs throughout their lives. What about those times in-between?

The Stan Clark Financial Team has developed a process we can use to calculate an overall best mix for you based on the time horizon of each and all of your future needs. Here's how our process works:

First, based on the last 152 years, we analyze in detail the risk and return of various mixtures of stocks and bonds. We then examine these mixes over all time horizons, ranging from one year to 30 years. From this work, we determine the "best mix" for each year depending on whether your goal is simply to minimize risk, or if you are willing to take a little more risk for higher expected returns. Then, we match those best mixes each year with how much you expect to need from your portfolio each year. We get those expected needs from your personal financial plan.

This process tells us exactly how much we should keep in fixed income to provide for near-term needs, and how much can be allocated to equities to provide growth and inflation protection for longer-term needs. **The resulting overall mix is optimal for you, based on your own specific future plans.**

Here's an example. Let's say you are planning to retire in three years and you expect to need \$50,000 from your portfolio in that first year of retirement. If you carved off a separate portfolio to fund that need, how would you invest that portfolio? Three years isn't far away, so we wouldn't want to put much of it into equities. For a conservative investor, our system might suggest putting about 10% into stocks to fund this specific need.

Let's say you need more the next year: \$52,000. This would be four years away. You would have an extra year to recover from a downturn, so you could put a bit more into equities for this need. Our method might suggest 20% in equities for this bucket.

Our algorithm does this for every year for the rest of your life. It then adds up all the money you should keep in fixed income and all the amounts that can be invested in equities to meet your needs. The result is an overall best mix for your total portfolio. In this example, if most of the money isn't really needed until later, it might come out to 65% in equities. We call this the ***Best Mix Equities Target***.

This is the mix that makes the most sense, based on objectively looking at history and your future needs.

Finding your comfort level when stocks fluctuate

But we also need to consider how comfortable you would be having that percentage in equities. Markets will always be volatile. It is important to understand your comfort level with fluctuations to avoid setting a mix that will cause you too much worry if a temporary downturn occurs.

To assess your comfort level with fluctuations, we take you through a series of questions. Although your personal comfort level is subjective, we try to make it measurable by using a clear process. We score your answers and use an average of those responses to determine your overall tolerance to volatility.

The questions are divided into four sections, each providing a different perspective on your comfort level with volatility:

1. Rules-of-thumb: The first section consists of some fairly simple rules-of-thumb. Although everyone is different, we can categorize people into general groups. For example, people in their 20s would typically have a higher allocation to equities. Those in their 70s would have a lower allocation. Another example: People more interested in high long-term returns would have a higher equity mix. Others who prefer to avoid short-term price swings would typically want less in equities.

2. Risk behaviour: The second section consists of questions about your comfort level with risk in different areas of your life. For example, do you like to take play games of chance? Have you ever borrowed to invest? Do you tend to speed when driving? People who like to take chances will usually be more comfortable with the fluctuations associated with equities.

3. Attitude towards volatility: This section evaluates more directly your attitude towards fluctuations in your portfolio – and the trade-off between volatility and return. For instance, are you willing to accept higher-than-minimum volatility for slightly higher returns? Or, do you prefer your portfolio to be very stable, not risking any principal in the short term, even though this may cause low long-term returns? People with an accepting attitude toward volatility can have more of their portfolio invested in equities.

4. Financial capacity: The final section examines your financial ability to withstand fluctuations in your investment portfolio. For example, if the markets were down, how long could you go without drawing money from your portfolio? Would you have enough income to cover an unanticipated expense, or would you need to dip into your long-term investments? People with a greater financial capacity to withstand fluctuations can have more invested in equities because they won't be forced to sell during down periods.

Each of these four sections provides us with a different estimate of the percentage of equities you could best tolerate. We then average these to come up with what we call a ***Volatility Tolerance Equities Target***.

Your Equities Target – Putting it all together

We now have the results from two distinct approaches to figuring out your right mix. The first method, your *Best Mix Equities Target*, is numbers-oriented. It considers each of your future needs, such as retirement, education expenses, vacations, etc. Then, based on when those needs occur, it determines your best mix to meet them. The second approach gives us what we call a *Volatility Tolerance Equities Target*. This is more feelings-oriented. It bases your mix on your comfort level with price fluctuations.

Each method produces a suggested asset mix. Then we combine these two mixes to come up with your overall *Equities Target*. Think of the numbers-based method as what you should do if you were completely objective. Think of the feelings-based method as what you can actually do, given that being comfortable with your investments is also important. You can now see that your ideal mix combines the two: It's as close as possible to the mix you *should* have – but limited to what you *can* have.

Let's go through an example. Say Dave and Sally are both 57 years old and planning to retire at age 65. They won't need any money from their portfolio until then. After retirement they will receive some government pensions and will need an extra \$30,000 per year from their portfolio. Because most of these needs are fairly far into the future, when we do the calculations the Best Mix comes out to 80% in equities.

Dave and Sally also completed the volatility tolerance questions. Based on the couple's answers, their volatility tolerance came out to only 60% in equities – meaning they are less comfortable with stocks than their Best Mix suggested. So, their overall Equities Target should be somewhere between 60 and 80%.

In talking this over with Dave and Sally, we might suggest simply averaging the two numbers together – but within reason, so we don't go too far above their volatility tolerance. Here, we might agree on an overall Equities Target of 70%.

Best Mix Equities Target: 80%
<u>Volatility Tolerance Equities Target: 60%</u>
→ Overall Equities Target: 70%

Once we agree on an Equities Target, we suggest staying disciplined and trying to stick close to that target. This is very important. Doing so can help you take advantage of market fluctuations by responding in the right way: adding when markets are low and reducing when markets are high. Your chances of success improve if you respond this way, rather than trying to time the market or react to changes the wrong way. Various studies have shown that the average investor loses between 1.5% and 2.5% per year through poor market timing.

In conclusion, when you consider asset allocation, decide on an Equities Target right for you based on the timing of your needs and on your tolerance for volatility. This ensures that your investment strategy is properly customized to you. Then the key is to stick closely to the chosen target so you can make volatility work in your favour rather than against you. Remember that things change over time, and your ideal Equities Target can also change. That's why it's important to have regular reviews of your financial plan to make sure you stay on track.

So, what's your Equities Target?

To learn more about CIBC Wood Gundy, The Stan Clark Financial Team and how our asset allocation process can help you, please feel welcome to call us at 604-641-4361. You can also reach us by email at StanClarkFinancialTeam@cibc.ca, or visit us online at www.stanclark.ca.

Appendix: Information sources on historical returns

Stock returns: 1871-1923: U.S. stocks only. 1924 onward: 50% U.S. stocks and 50% Canadian stocks.

U.S. stocks: 1871-1926: S&P 500 Robert Shiller. 1927 onward: Data are the equal weighted average of the top 8 deciles by market capitalization of stocks followed by the Center for Research in Security Prices (CRSP), sourced through Kenneth French from Princeton University. In 2022, this would include the approximately 1,890 U.S. stocks with market capitalization over U.S. \$770 million.

Canadian stocks: 1924-1949: Canadian Institute of Actuaries. 1950-1955: Montreal Exchange and Toronto Stock Exchange Market Review. 1956 onward: S&P/TSX Composite Index.

Bond returns: A mix of 40% longer-term bonds and 60% T-bills.

Longer-term bonds: 1802-1870: U.S. bonds, Jeremy Siegel. 1871-1923: U.S. bonds, Robert Shiller. 1924-1980: Government of Canada bonds with 10yr + maturity until 1980, then FTSE TMX Universe.

T-Bills: 1802-1933: U.S. Government T-Bills, Jeremy Siegel. 1934-1949: Govt Canada T-Bills, Canadian Institute of Actuaries. 1950 onward: FTSE TMX 91 Day T-Bills.

Inflation: 1802-1870: U.S. CPI, Jeremy Siegel, 1871-1923: U.S. CPI, Robert Shiller. 1924 onward: Canadian Consumer Price Index.

All returns are shown in in Canadian dollars.

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The Stan Clark Financial Team
Where planning, investing and behavioral finance meet

Phone: 604 641-4361 | Toll-free: 1 800 661-9442 | Fax: 604 608-5211 | Email: stanclarkfinancialteam@cibc.ca | www.stanclark.ca