Concentrated Stock Positions

A Sterling Advisor Guide

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Concentrated Stock Positions

Executive Summary

Holding a concentrated position in a publicly traded stock requires the holder to bear excess risk. Excess risk is risk for which the holder cannot expect to be compensated. We examine a number of reasons people continue to hold concentrated positions despite the excess risk. Perhaps the most frequent and compelling reason is the desire to avoid, or at least postpone, tax. We examine nine commonly discussed solutions, and find that one of two solutions – outright sales and *stock diversification trusts* – are the most appropriate solution in most cases. We also explain the often confused concepts of hedging and diversification.

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Case Study

Robert and Tammy Wheeler had lived their entire lives in California, where Robert was a teacher and Tammy an office manager. They were both fairly conservative investors, and the bulk of their investment assets were in retirement plans. Bob's plan was a 403(b) and Tammy's a 401(k). With the help of a good advisor, they stayed pretty fully invested and have done quite well.

And in addition, they have Bob's teacher pension, which alone pays them \$74,300 and adjusts for inflation. They felt comfortable enough to play with some "mad money" which they invested in favorite stocks. One of these turned out to be a company called Gamestop, where one of the their kids had worked decades ago.

They bought, and acquired through dividend reinvestments, over 6000 shares of Gamestop by the mid-2000s. They Bob and Tammy didn't worry too much about the wealth represented by their Gamestop, mainly because they didn't think about it much, but also because they were well diversified not worried about market fluctuations.

That changed when their advisor called them in January of 2021. "You remember that Gamestop you've been sitting on? Well, it traded over \$400 a share today! I think you should diversify. Can you make time to discuss it?"

Unfortunately for Bob and Tammy, they took a couple of days, and those were some of the most volatile days in Gamestop stock history. By the time they sat down with their advisor the following week, the stock was down to "only" \$90.

Bob and Tammy had missed the \$400 peak, but their shares were still worth over \$550,000, with a gain of about \$500,000. They wanted to sell, but didn't want to pay tax.

Their advisor suggested a stock diversification trust. Within days, Bob and Tammy had their trust in place, and funded it with 6121 shares of Gamestop. Almost before the ink was dry on the trust, Gamestock shares soared again. This time, with their advisors' help, Bob and Tammy's trust sold into the run-up.

The trust netted \$1,481,000, and paid zero tax. In addition, because of the way that the Wheelers and their advisor structured the trust, they will be entitled to receive, but not required to receive, \$74,000 a year starting in the second year. And on top of that, the Wheelers received an income tax deduction of abut \$55,000 when they funded the trust.

One of the many beauties of the arrangement is that the Wheelers don't need the income, and so they plan to let the trust build for the eventual benefit of their children, and in the distant future, their grandchildren.

Remarking on the lack of an overall plan that led to this great result, Bob commented, "I've heard it's better to be lucky than smart." To which his advisor replied, "Bob, luck favors the prepared mind. In your case, you both were smart and lucky."

Se Po

Section 1: Definition of a Concentrated Position

The principle of diversifying one's investments is at least as old as the Biblical book of Ecclesiastes. There (11:2) we read "Invest in seven ventures, yes in eight; you do not know what disaster may come upon the land."

If we read this verse as diversification advice, to divide our investments into eight equal parts, each investment would represent 12.5% of the whole portfolio.

Today, in a world of tens of thousands of stocks, bonds, REITs, and thousands of other investment opportunities, most people would consider a portfolio that held only eight companies under-diversified.

But a portfolio that held equal amounts of eight well chosen investments would probably be more diversified than a portfolio that held a hundred stocks, but held one large, concentrated position.

A concentrated stock position is a position in a single stock that represents "too much" as a percentage of the entire portfolio.

Perhaps surprisingly, there is no universal agreement regarding what percentage is a single issue is "too much." The Financial Industry Regulatory Authority (FINRA) talks about concentration, and warns against it,

but doesn't define it. The Securities and Exchange Commission (SEC), has a number of rules about concentration, and different definitions in different rules. In some places, the SEC says that 5% is the maximum, and in other places 25%.²

Arguments Against Holding a Concentrated Position

Excess risk is the most important argument against holding a concentrated position. There are at least two ways to look at the risk entailed by holding a concentrated position. The most obvious risk, and the most important for most people, is the risk that the stock will suffer a severe loss in market value.

The risk of a stock, even the stock of a great company, suffering a severe loss may be considerably higher than you think. Even great companies, with long, excellent track records, can and do experience large, usually unexpected, losses. Here are a few examples that you might remember or recognize.

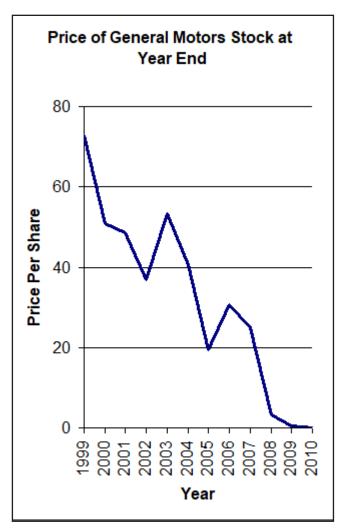
General Motors, in the decade between 1999 and its demise, suffered three separate periods where it dropped by 50% or more. And it eventually went to zero.

In 2022, Netflix lost nearly 80% of its value in less than a year. After making many shareholders rich, Netflix in the year to mid-

¹ New International Version translation.

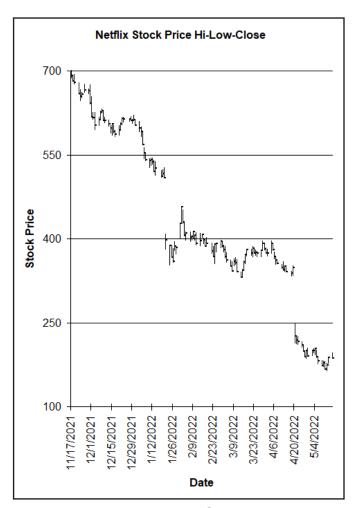
² See, e.g. https://www.sec.gov/rules/final/33-7512r.htm

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2022 suffered multiple periods of catastrophic losses.

In 1988, the most valuable company in the world was Nippon Telephone and Telegraph, which at its peak was worth more than the combined value of Exxon, General Electric, IBM and AT&T. The stock then collapsed, and lost more than 80% of its value. NT&T slowly recovered, though never to its 1988 highs, and more than doubled in the boom of the late 1990s. Then, from its 1999 high, it again lost over 80% of its value!



Even great companies like General Electric can be very risky. For decades, General Electric was a "widows and orphans" stock par excellence. For decade after decade, throughout most of the 20th century, General Electric was a safe, relatively steady dividend payer.

In 1993, General Electric became the most valuable company in the world. Around the year 2000 General Electric reached its all-time high. It has been a rocky, painful downhill ride for stockholders ever since. As this is written, the stock is down between 70% and 80% since the start of the 21st century.

And as risky as giant companies can be, for small companies, the odds are even worse. According to one study, between 1980 and 2020, 44% of the stocks in the Russell 3000 experienced at least one episode of "catastrophic loss" in which they dropped by 70% or more.³

The risk that a stock, in which you hold a large position, will fall sharply, is one very real way of looking at concentration risk.

Portfolio Theory View of Concentrated Position Risk

Finance theory doesn't focus on the risk of a single stock or investment. Rather, it looks at the overall risk of a portfolio. Finance theory provides a way to calculate how much risk you have to take to get a certain level of expected return. Or, looked at another way, portfolio theory is the science of diversification.

Finance theory has developed over the past couple of generations. It is based on the idea that capital markets – for stocks, bonds, real estate, and the like – are pretty efficient. That is, it is hard to "beat" these markets. That makes sense, because every day there are hundreds or thousands of very smart, motivated, and well capitalized people who are competing with each other to find the profit opportunities.

As soon as one of these people finds a profit opportunity, they buy the asset if it's cheap, or sell it if it's expensive. That means that when profit opportunities do appear, they tend to disappear quickly.

One result of all this competitive activity is that it is difficult to earn "excess" returns investing in publicly traded assets including stocks and bonds.

By "excess" returns, financial theorists mean returns greater than those that can be earned by owning the broad market. For example, in 2021, about 20% of the mutual funds in the US earned returns higher than the S&P 500. Those 20% generated "excess" returns.

Excess Risk

Just as most people would like to earn excess returns, few people want to incur excess risk. Excess risk is risk that you take that is greater than the amount of risk you would have if you owned "the market." In the case of the U.S., the S&P 500 is considered representative of "the market."

Financial theory measures risk in a variety of ways. One the most common ways is called the standard deviation of return. The standard deviation of return is a mathematical measurement of volatility, or how much returns bounce around.

The chart on the next page illustrates two assets that have the approximately the same long run return, but different volatilities.

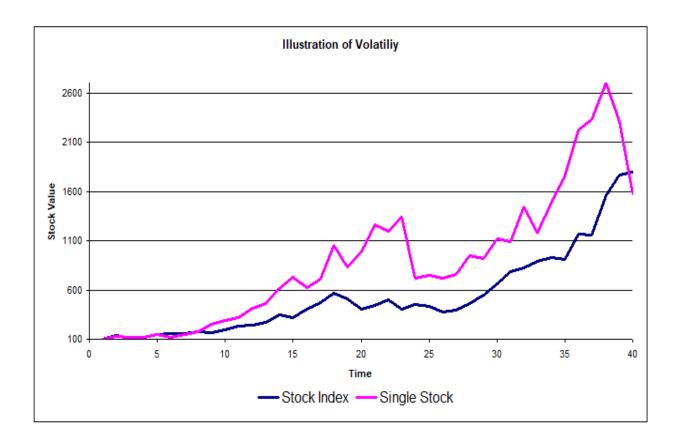
The value of the stock index bounces around much less than that of the single stock. While not every stock carries excess volatility, most do.

Using the math of finance theory, it can be proven that a concentrated position results in

³ Michael Cembalest, Eye on the Market Special Edition, JP Morgan, March 15, 2021.

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a portfolio that carries excess risk. Excess risk, in financial theory terms, is risk that you could diversify away. For example, instead of owning one stock that constitutes 20% of your portfolio, if you adjusted your portfolio so that no stock constituted more than, say, 3% of your portfolio, you would get rid of the excess risk without giving up any excess expected return.



Section 2: Why Do People Hold Concentrated Positions?

While there are probably as many reasons for holding concentrated positions as there are investors who hold them, we have identified four main reasons people hold concentrated positions. These are

- Expectation of Outsize Gains
- Aversion to Taxes
- Control
- Status Quo Bias

Outsize Gains

It is a fact that many of the great fortunes of history have been made by people who owned concentrated positions, usually in a single stock. Examples range from famous 19th century industrialists like John D. Rockefeller and Andrew Carnegie, to 20th century entrepreneurs like Henry Ford and Bill Gates, to 21st century tech founders like Mark Zuckerberg and Elon Musk.

These owners, and many others like them, may have felt more comfortable keeping large positions because they had, as CEO, controlling shareholders, and/or Chairman, a significant amount of influence on the business.

Nevertheless, many or most of them choose at some time to take a large amount of money off the table. That is, they reduce the size of their concentrated position, exactly so that they can diversify their portfolios. In 2021, for example, Zuckerberg sold about \$4.5 billion of stock in Facebook; Jeff Bezos sold over \$9 billion of his Amazon stock; Elon Musk sold an estimated \$11 billion.

The hope of earning further above market gains is the main financial reason people hold concentrated positions.

Control

Control, and the desire to maintain control, is another reason many people hold concentrated positions, even if doing so potentially exposes them to excess risk. Control investors who wish to reduce their positions may have alternatives that are beyond the scope of this discussion.

Aversion to Taxes

In the United States, the sale of an appreciated stock holding will trigger capital gains taxes. In addition, 41 states tax capital gains, on top of the federal tax. As of this writing, the effective top federal capital gains tax rate is 23.8%. State income tax rates go as high as 13.3% in California, with San Francisco adding another 0.38% to bring the rate up to almost 13.7%. But the highest rate in the nation is found in New York City, where the combination of state and city income tax exceeds 14.7%.

Thus, people who live in New York or California can face capital gains taxes approaching 40%. The average state income tax rate

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is about 6%, meaning that the average top capital gains rate in the US is 30%.

The desire to not pay 20%, 30% or more of your gain is a powerful reason for people to hold onto concentrated positions, even though they know they lack control, and even though they know they incur excess risk by holding the concentrated position.

Breakeven Takes "Forever"

Suppose you are in the fortunate position to have a large gain in a concentrated position. For the sake of discussion, suppose that the overall value of your portfolio is \$10 million, and you have a single position that is worth \$2 million. And suppose your tax cost for that \$2 million position is \$100,000. That's a very nice gain.

Using portfolio theory, and some basic assumptions about the volatilities of the average stock, we can calculate that the concentrated position is adding about 1.5% per year of risk (standard deviation) to the portfolio. Or, looking at it the other way, diversifying the concentrated position would reduce the risk of the portfolio by about 1.5% per year.

That might not sound like much, but the way the math of compound returns works, everything else equal, higher volatility of a portfolio equals lower returns.

However, that math is more than we want to go into here (and probably more than you want to read about). For the sake of this discussion, we'll just say that the reduced risk corresponds to an increase in expected return of about .06% per year.

However, the portfolio will shrink, because of the capital gains tax. As Shakespeare said, "Aye, there's the rub."

At 30%, the tax on the capital gain from selling the \$2 million position would be about \$570,000. Thus, the overall portfolio after such a sale would be \$9,430,000. The lower risk portfolio will have a slightly higher return. But it would take over one hundred years for the higher return to make up for the tax hit.

Prospect Theory

Nevertheless, people are often willing to pay the tax to reduce the risk. The bigger the concentrated position, the greater the willingness, because the bigger the position, the bigger the downside.

If you have \$40 million, and it's mostly in one company, and that company hits the skids, your life will change a great deal for the worse.

For most people, a large loss hurts more than a gain of the same amount feels good. For example, if you have a net worth of \$10 million, it is likely that you would feel more pain from a \$2 million loss than you would feel pleasure from a \$2 million gain.

Most people feel this way, and the psychologists Amos Tversky and Daniel Kahneman became famous partly for documenting this fact in a number of experiments.

But you don't care how other people feel. You

care about how you feel. And if you'd feel more pain from a large loss than you would pleasure from an equal size gain, that's a strong reason to think about reducing a concentrated position.

Status Quo Bias

Almost everyone can recall a situation in which they failed to take advantage of some obvious opportunity, even when the cost of acting was low, the risk was low or zero, and the potential for gain big. All of us, it seems, are sometimes afflicted by the desire to "don't do something, just sit there!"

You can probably recall at least one such situation.

If so, you're not alone. In fact, researchers even have a name for it. They call it the *status quo bias*. Most people have a tendency to prefer what they have, whatever that is, over alternatives, simply because they already have whatever it is. For example, in one study, researchers found that test subjects valued a coffee mug much more highly when they already had the mug compared to when they didn't already have the mug.

A variety of carefully conducted studies⁴ have found that even very smart people, who are very successful, frequently make this kind of decision. The researchers call such behavior *irrational*. Here's a quick example of why. You'll see that when it's explained, people usually abandon their irrational behavior in favor of more rational behavior.

Consider a study done at Simon Fraser University. Researchers kept everything else the same, except that they gave one set of subjects a mug, asked another set how much they'd be willing to pay for a mug, and a third set got the choice between a mug and cash. The subjects who were given the mug (on average) wouldn't sell the mug for less than \$7.12, while the other two groups valued the mug much lower, at \$3.12 and \$2.87.

Investors also can be subject to status quo bias. For example, you might be unwilling to buy a stock that has already gone up a lot, but if you already own it, you might continue to own it.

If you are willing to own a stock that has gone up a lot, but you wouldn't buy the stock at that price, that could be a case of status quo bias.

The good news is that you, when you are aware of status quo bias, can overcome it more easily.

Solutions

We have seen that in most cases, holding an appreciated concentrated position means bearing risk, sometimes tremendous risk, without any compensating expected return. Concentrated positions generate what financial columnist James Grant has jokingly referred to as "return-free risk."⁵

There are a variety of methods of reducing or eliminating the risk of a concentrated position. These methods fall into two broad categories: hedging, and diversification.

⁴ See, e.g. Kahneman, Knetsch and Thaler, *The Endowment Effect, Loss Aversion and the Status Quo*, Journal of Economic Perspectives, Winter, 1991.

⁵The joke is that many finance academics and professionals like to talk about the "risk-free return" from T-Bills.

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Each of these alternatives may have its own costs, benefits, and tax consequences. We'll examine each.

Hedging	Diversification			
Publicly traded put options	Outright sale			
Collar	Sales over time			
Private issue put options	Exchange fund			
Prepaid Variable Forward	Prepaid Variable Forward			
Contract	Contract			
Single stock futures	Stock diversification trust			

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Section 3: Hedging vs. Diversification

Although the terms hedging and diversification are sometimes used interchangeably, in reality, the two terms refer to different areas along a spectrum. That spectrum is the correlation of returns.

HEDGING

In plain English, *hedging* refers to the process of holding one asset, say a stock, and then also buying another asset, say a put option, that offsets the risk of holding the first asset. The hedging asset should have a strong negative correlation with the asset you are hedging.

A "perfect" hedge will remove all risk, and all return. Financial hedging in the modern world traces its history back to the 1840s. The Great Plains were being settled, and farmed. Grain was being grown for the Eastern markets. Farming is a very risky business, and the price of grain is, and always has been, very volatile⁶. Farmers have enough risk, associated with weather and the growing of crops, that they don't also want price risk.

Grain buyers (for example, bakers, millers, and grain merchants) also ran businesses that had enough of their own risks that they didn't want to bear the risk of grain prices.

Being "long" a commodity means owning the

commodity and bearing the risk of the price of the commodity falling.

Being "short" a commodity means having sold (or sold forward) a commodity that you don't own, and bearing the risk of the price of the commodity rising.

Farmers were (and are) naturally long grain. Grain buyers were (and are) naturally short grain.

In the 1840s, farmers and grain buyers got together and founded the Chicago Board of Trade and developed first futures markets in the western world ⁷

A "perfect" hedge, then, for a long holding would be to hold a contract to sell exactly that amount, at some future date, at a fixed price.

Producers and users of commodities often want their hedges to be as close to perfect as possible.

Commodity producers and users, for the most part, seek to earn profits from factors other than the price change in the commodity they produce or use. So, they are happy with perfect

⁶ Ancient grain price records exist that allow us to see that price volatility is as old as the records of prices.

⁷ There were futures markets in Japan from about 1730. But there was extremely limited interaction between Japan and the rest of the world until 1853 when Commodore Perry sailed his fleet of warships into Tokyo Bay. The stated purpose of the visit was to return return shipwrecked Japanese sailors to Japan, and seek the return of westerners who had been shipwrecked in Japan.

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or near-perfect hedges that remove that price risk.

But few stock investors even desire a perfect hedge. One major reason is that a perfect hedge removes not only risk, but return as well. Stock investors, for the most part, hold stocks precisely to earn the return from the holding. A perfect hedge would mean that return was also given up.

Stock Hedges

But a hedge can be intentionally not perfect. The idea is to limit risk without limiting return. Hedge funds, at least in their classic form, attempt to hold long positions in stocks that they think will go up more than the market, and then hedge against general market moves by selling short either an index representing the market, or by selling short a portfolio of stocks that the fund manager believes will generally underperform the market.

Hedging the Concentrated Position

Some advisors recommend holding the concentrated position, but hedging it to reduce the risk. While such strategies can be appropriate in limited circumstances, hedging strategies are rarely long-term solutions.

Hedging can be appropriate when there is a need to reduce risk for only a relatively short time. For example, senior executives may have concentrated positions that they must hold, for legal or contractual reasons, until some specific date or event. Or a stockholder might have only a short remaining life expectancy, and wants to hold the concentrated position until death so that the

estate gets a stepped-up basis for income tax purposes. Or, conceivably, a stockholder who is not an insider might have knowledge about some pending event that could cause the stock to fall sharply, but probably won't happen. A not-so-uncommon example might be a court case, particularly a Supreme Court case. Daniel Katz and colleagues studied the stock market effect of 79 Supreme Court cases during the years 1999 to 2013.8 In one of the cases, the court ruled against Mazda, causing a \$5 billion drop in the market value of the company.

Stock Hedges are Usually Some Form of Option

The simplest way to hedge a concentrated stock position would be to own a put option on the stock you want to hedge. A put option gives the owner the right, but not the obligation, to sell a stated number of shares (usually 100 per option for exchange traded options) at the strike price, any time until the option expiration.

Exchange-Traded Options

There are three main reasons exchange-traded put options are of limited use in most cases of concentrated positions, and a fourth that often rules them out.

The three main reasons are cost, short term to expiration, and the potential to convert long-term capital gain into higher-taxed short term capital gain. The cost of an option is a function primarily of three factors: the strike price relative to the market price of the stock; the remaining time until option expiration; and the volatility of

⁸ Daniel Martin Katz & Michael J Bommarito II & Tyler Soellinger & James Ming Chen, 2015. Law on the Market? Abnormal Stock Returns and Supreme Court Decision-Making, Papers 1508.05751, arXiv.org, revised May 2017.

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the price of the underlying stock.

As you would probably guess, all the things you as a hedger of a concentrated position would want make the option cost more. Everything else equal, the longer the maturity of the option, the more it will cost; the closer the strike price to the market price (assuming the strike price is below the market price), the more the option will cost; and the higher the volatility of the underlying stock price, the higher the option price.

And options are not cheap. For example, as this is written, Microsoft last traded at \$252. A three-month put option to sell Microsoft at \$250 last traded at \$16.10. Suppose an owner wanted to use these options to limit downside. To protect the downside for just three months would cost close to 6.5% of the value of the position. There are options that have about a year maturity, and those options would cost about 12.5% to hedge the whole position. (Note also that the longer maturity options markets tend to be thinner, meaning that the transaction cost to trade them can be even higher than indicated by quoted market prices.)

The fourth reason is that not all stocks have exchange-traded options.

Privately Issued Options

Many banks and investment banks will be happy to sell you a put option tailored to your situation. In fact, they'll usually be thrilled to do so, because they can make a lot of money selling options. Hard data is difficult to find, but estimates made on exchanged-traded options

of S&P 500 stocks suggest that the transaction cost is about 8.5% of the option price.⁹

Furthermore, it is likely difficult or impossible for a non-professional to evaluate whether the offered price of a privately issued option (which is likely to be one-of-a-kind) is a good price.

Taxation of Option Hedges

Consider the Microsoft stock example above. Suppose you own 10,000 shares of Microsoft that you bought when the stock was at \$25 in 2009. You are sitting on a gain of \$2,270,000. If you sell the stock and take your gain, you would pay capital gains tax at the Federal rate of 23.8%, plus any state tax.

Alternatively, suppose you hedge by buying puts with a strike price of \$250 on 10,000 shares. The value of the puts will go up approximately one dollar for every dollar that Microsoft drops in price.¹⁰

Now suppose Microsoft drops by 10%, or \$25 per share. You're protected because for each dollar you lose on the stock, you earn a dollar on your option position.

But here's the rub. You can't hold your option position forever. You'll have to either close it out, or roll it to an option with a later expiration. Either way, you'll have to sell your put options (unless they expire worthless). And unless you've held the options for more than a year, the gain you take on the option will be short term capital gain. Congratulations. You've just

⁹ Neal Pearson, *Option Trading Costs Are Lower Than You Think*, Review of Financial Studies, 33, 2020.

¹⁰ Not quite exactly dollar for dollar, but for simplicity we're going to ignore the non-linearity here.

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converted long term capital gain, taxed at 23.8% into short term capital gain, which is taxed at 40.8%. 11 Your hedge was worse than simply selling the stock. As noted above, there might be unusual circumstances that would make it worth hedging this way even though the hedge will result in higher tax rates if the stock goes down. But most of the time this kind of option-based hedge isn't much use.

Collars

Some banks and investment banks sell an option-based hedge strategy called a collar. Though the details are likely to be complex, the essential elements of a collar are the purchase of puts with a strike price below the current market price, and the sale of calls bearing a strike price above the market price. If this sounds complicated, that's because it is.

The tax consequences can be complicated, too, and not necessarily to your advantage. The full complexity of the tax treatment is beyond the scope of this article. However, you should know that a collar has a significant probability of converting some of the gain you are trying to protect from lower-taxed long term capital gain into higher-taxed short-term gain.

With a straightforward put hedge to protect the downside, if the stock goes up, there is no need to do anything. In the Microsoft example, if the stock goes up, the option expires worthless, and the owner is worse off only by the cost of the puts. The main selling point, emphasized by the banks and brokers who sell collars, is that a collar can be structured to be "zero cost." It's not really zero cost, but again, the complexity is too great to explain in detail here.

While there are probably situations in which a collar would be appropriate for a concentrated position, in over thirty years, we've never seen a situation where a non-investment professional had a concentrated position and a collar was the best way to go.

Single Stock Futures

A single stock futures contract is a contract requiring the buyer to buy, and the seller to sell, a certain number of shares (usually 100 shares) of a specific stock, on a certain date. As of this writing, there are no publicly traded single stock futures in the United States. However, there are European exchanges that may offer futures on some stocks that Americans might have a significant position in.

For example, there are single stock futures on Shell Oil. Suppose you have a concentrated position in 100,000 shares of shell. In theory, from an economic point of view, you could have a perfect hedge by selling futures equal to 100,000 shares of Shell.

In practice, there are a number of reasons that you probably wouldn't want to. These include the limited liquidity of the markets (meaning

But a collar can force you to act if the stock goes either up or down, and acting usually has tax implications. With options, you can be forced to act at a time not of your choosing.

¹¹ Tax rates are current as of this writing in May, 2022.

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you might have large bid-offer costs), the US tax treatment of such a transaction, and the fact that most of the existing single-stock futures are cash settled. That cash settlement "feature" means that you cannot deliver your stock to settle your obligation when the futures contract matures. In effect, such a hedge could force you to sell, causing a taxable event.

Secondly, and perhaps just as important for most investors, a "perfect" hedge under US law could trigger the realization of the capital gain on your concentrated position.

Overall Rule on US Taxation of Hedging Transactions

There are complex US tax rules relating to hedging transactions. Here is a key piece of the rule, from an IRS Revenue Ruling:¹²

Section 1.446-4(a) provides that a hedging transaction as defined in § 1.1221-2(b) must be accounted for under the rules set forth in § 1.446-4. Section 1.446-4(b) provides that the method of accounting used by a taxpayer for a hedging transaction must clearly reflect income. Section 1.446-4(b) further provides that to clearly reflect income, the method used for a hedging transaction must reasonably match the timing of income, deduction, gain, or loss from the hedging transaction with the timing of income, deduction, gain, or loss from the item being hedged.

If that's not perfectly clear to you, you're

not alone. The tax law surrounding hedges is complex, and is the domain of specialists. If you are considering a hedging transaction, you should find a tax expert who specializes in this complex, niche area of the tax law.

DIVERSIFICATION

As described above, a perfectly hedged portfolio would offer no return.¹³ On the other hand, a well diversified portfolio can offer a significant expected return, while still not taking any excess risk.

Most people who hold a concentrated position will be better served by diversifying the concentrated position than by hedging it.

How and Why Diversification Can Reduce Risk Suppose that you were offered the opportunity to bet \$1000 on a coin flip. If the coin comes up heads, you get \$2100, and nothing if it comes up tails. The expected value of this bet is \$50.14 Your range of possible outcomes is wide: you will end up either with a loss of \$1000 or a gain of \$1100.

Now consider betting the same \$1000, but this time by making 1000 one dollar bets on separate flips of the coin. Each bet pays off \$2.10 if the coin comes up heads, and zero if it comes up tails. The expected value of each little bet is \$.05, (calculated as follows:) and the expected value of 1000 bets is just 1000 times the expected value of each bet, for a total expected value of \$50. So the expected value

¹² Rev. Rul. 2002-71

¹³ We are oversimplifying a bit, as there is in the real world the possibility that there can be a positive "riskless" return that could, in theory, be earned by a perfectly hedged portfolio. 14 Calculated as follows: 1/2 x 2100 + 1/2 x 0 - 1000 = 50.

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of the thousand smaller bets is the same as with the single big bet. But the range of likely outcomes is much narrower. We'll skip the math here, but now the chance of actually losing money is less than 7%, instead of the 50% chance with just one bet.

Correlation and Independence

We assume that the outcome of any coin flip is independent of the outcome of any other coin flip. That is, the probability of any flip coming up heads (or tails) is 50%, regardless of how the previous flips came up.

One way of stating this independence in statistical terms is that the outcomes of successive flips is uncorrelated.

If we have the opportunity to make unlimited number of identical small bets, we can in theory make the range of probable outcomes as small as desired.

Stock Returns are Positively Correlated

Unlike the outcomes of coin flips, the returns to different stocks are (generally) positively correlated with each other. That is another way of saying that stocks tend to move up and down together.

But they are not perfectly correlated. A statistic used to measure the amount of correlation is the *correlation coefficient*. A correlation coefficient can range from perfect positive correlation of +1, to perfect negative correlation of -1. Independence, as in the example of coin flips, is a correlation of zero.

The correlations among the returns of various stocks are not constant. Over time, it has varied from very high, that is close to 1, to low, but still positive. The long run average is close to .6, or 60%.

Because stock returns are positively correlated with each other, no matter how many stocks you own, you cannot get rid of all the risk. When you are fully diversified, the remaining risk is called *systematic risk*.

When you are under-diversified, your portfolio has excess risk. According to finance theory, you cannot expect to be compensated for excess risk.

Why Diversify

The answer to the question "Why diversify?" is easy: to stop taking risk that you're not getting paid to bear.

Why Not Diversify

Taxes are the main stumbling block to diversifying a concentrated position. Diversifying a concentrated position will usually require the sale of all or part of the concentrated position, and without special planning, that will usually trigger capital gains tax.

Potential Methods of Diversification

We have identified four approaches to diversification, and consider the tax and other likely consequences of each of them below.

Outright Sale

If you hold a concentrated position in a publicly traded stock, the simplest way to diversify is to

¹⁵ In the statistical literature there exist more than one correlation coefficient. The most common correlation coefficient is the Pearson Correlation Coefficient.

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sell the stock, and reinvest the proceeds in a diversified portfolio. If you own the position in a taxable account, the sale will trigger capital gains tax. Depending on where you live, as we discussed above, that tax could be as high as 38%.

If the concentrated position you own is in an actively traded stock, you probably can sell even a large (for you) position without worrying about the effect on the stock price. Microsoft, for example, has recently been averaging trading volume of about 33 million shares a day. That's enough liquidity for most people. If there is doubt about whether trading volume is sufficient, a knowledgeable stock broker or investment advisor should be able give you good information. It might take several days or weeks to sell a large position in a thinly traded stock without affecting the market price too much.

Either way, liquid or thinly traded, if you sell all at once or over the course of days or weeks, you'll trigger capital gain tax.

Sales Over Time

Some advisors suggest spreading out the sale over multiple tax years. While this might be a good idea in theory, it would have limited application in the real world. There are two reasons that limit the usefulness of spreading the sale of a concentrated position over multiple tax years. These are excess risk, and limited tax benefit.

For example, one author suggests spreading the sale of a \$5 million gain over seven tax years, by selling about 15% of the position each year. That strategy would reduce the risk a little, but for most of the time you'd still have most of the position. It would also have the potential to reduce the tax bill, if your income from other sources were low enough that you could take advantage of the lower tax rates on lower income amounts. Your accountant should be able to advise you on this question.

Prepaid Variable Forward Contract

A prepaid variable forward contract is a relatively complex contract between a seller and a buyer. The seller is usually the holder of a large appreciated stock position and the buyer is usually a bank or investment bank. Here is a description from an IRS paper.¹⁶

The taxpayer owns appreciated stock in a publicly traded corporation. To monetize its position the taxpayer enters into a VPFC through a stock purchase agreement ("SPA") with an investment bank (hereinafter the counterparty). In exchange for an up-front cash payment, which generally represents 75 percent to 85 percent of the current fair market value of the stock, the taxpayer agrees to deliver a variable number of shares at maturity (typically three to five years). The VPFC usually has a cash settlement option in lieu of delivering the underlying shares at maturity. The purported economic benefits of the VPFC structure are as follows: (1) downside protection represented by the amount of the unrestricted payment to the taxpayer, (2) limited upside growth participation as reflected by the maximum share value

¹⁶ Coordinated Issue Paper, LMSB-04-1207-077

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price, (3) the potential for diversification by reinvesting the up-front cash advance, and (4) tax deferral of the gain to the maturity date of the VPFC.

Under the terms of the SPA, the taxpayer is required to deposit the maximum number of shares that may be delivered under the VPFC into a pledge account and to grant the counterparty a security interest in the pledged securities. The parties to the pledge agreement are the taxpayer (as pledgor) and the counterparty (as pledgee). In most instances, the SPA will contain a provision that allows the counterparty to hedge its position under the VPFC by giving it the right to sell, pledge, rehypothecate, invest, use, commingle or otherwise dispose of, or otherwise use in its business the pledged securities. During the life of the SPA, the counterparty has the right to transfer and to vote the pledged shares but may be required to pay certain distributions received on the pledged shares to the taxpayer.

From an economic point of view, a prepaid variable contract is a combination of a collar, which hedges the risk, and a loan, which provides the cash to the stock holder. These are complex transactions.

The history of prepaid variable contracts has been mixed. In 2010, the IRS won a case¹⁷ against Philip Anschutz, who according to Forbes had a net worth of \$10.6 billion in

2021. The court ruled that Anschutz' prepaid variable contract was in fact a current sale, and didn't accomplish the tax consequences that Anschutz had sought.

Many experts believe that prepaid variable forward contracts can be structured so that they work. Obviously, if you want to proceed in this area, you need expertise not only in the financial area, but also in the legal and tax aspects.

Exchange Fund

Do not confuse the term *exchange fund* with the similar term, but very different entity, *exchange-traded fund*. The exchange fund goes back to at least to the 1970s, when they were described in a law journal article.¹⁸

An exchange fund is a partnership or limited liability company specially designed for owners of large, concentrated positions. A fund sponsor, typically an investment bank, will seek a group of people who hold a variety of different positions, and have them all contribute their appreciated stock to form the exchange fund. If done right, your contribution is not a taxable event.

This gives rise to the name "exchange fund." You exchange your appreciated stock for a minority interest in a more diversified fund. There are a number of potential drawbacks. Among these drawbacks are generally the following:

- Fees
- Lock-up period
- Lack of liquidity
- Limited investment flexibility

¹⁷ Anschutz Co., 135 TC 78, Dec. 58,275 (2010), aff'd, supra

¹⁸ John A. DiCicco, Exchange Funds: The Tax Consequences of a Transfer of Appreciated Stock to a Partnership or Mutual Fund, Delaware Journal of Corporate Law, Vol. 1, 1976

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· Little or No income

Fees

Exchange funds usually aim to mimic some index, but charge fees that are more in line with actively managed funds. Funds typically have an up-front charge, which may run 1.5% or more, and annual fees, which are generally in the neighborhood of 1%.¹⁹

Lock-up Period and Limited Liquidity

To gain the benefit of an exchange fund, you have to agree to at least a seven year lock-up period. Thus, you give up liquidity. When you invest in an exchange fund, you give up your liquid stock for illiquid shares in the exchange fund. There is generally no market for exchange fund shares, and whether you can get access to your value before the seven years is up will depend on the terms of the specific fund.

Limited Investment Flexibility

Exchange funds, to provide the tax benefit, operate under a number of burdensome investment restrictions. One such restriction requires the fund to hold at least 20% of its assets in illiquid investments such as real estate or commodities, which may or may not otherwise be good investments.

Adverse Selection

Adverse selection is a term from economics. It describes the situation in which one party to a transaction has information, usually about value or risk, that the other party doesn't

have, and uses that information to either buy cheaply (e.g. insurance) or sell expensively (e.g. exchange funds).

In the case of exchange funds, the "seller" is the owner of the concentrated position, and the "buyer" is the fund management. Consider the incentives of each party. Everything else equal, the owner of a concentrated position is likely to want to sell or diversify that concentrated position when its market value is high. Fund management, on the other hand, mainly wants to gain assets for the fund, and has little incentive to try to get assets that are cheap instead of assets that might be expensive.

Thus, we should expect that, everything else equal, on average, the concentrated positions that are offered, by you, and by the other contributors to an exchange fund, will be relatively expensive compared to the market. In other words, it is rational to expect that exchange funds will underperform the market.

Little or No Income

There is usually little or no income distributed from an exchange fund, either because little is earned by the fund, or much or all of what is earned is consumed by management expenses and the need to fund the illiquid investments, such as real estate.

Estimate of Total Cost

The total cost of an investment in an exchange fund is not only the annual fees. Much harder to estimate in advance is the investment drag (i.e. underperformance) that might result from both the limited investment flexibility required by the rules, and the process of adverse selection that

¹⁹ Source: Morgan Stanley *Wealth Management Perspectives*, EXCHANGE FUNDS | CRC 3009607 (03/20)

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occurs when a fund is formed.

There is some historical evidence. For example, the Blackrock Exchange Portfolio, which seeks to track the S&P 500, returned an average annual pre-tax return of 13.39% for the ten years ending 12/31/21. For the same period, the pre-tax return on the S&P 500 was 16.55%.²⁰

That is a difference of 3.16%. If 1% of that is fees and costs, the other 2.16% might be attributed to the investment drag and adverse selection inherent in the exchange fund concept.

We believe that such a high cost drag makes exchange funds a poor diversification strategy in most situations.

²⁰ Source: Blackrock Exchange Portfolio, April 29, 2022.

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Section 4: Stock Diversification Trust

Atrust. Contributions of appreciated stock to a stock diversification are tax-free, and the trust can then sell the stock, immediately, with no tax due. The trust then can reinvest the entire proceeds into a diversified portfolio. Furthermore, as long as the assets remain in the trust, there is no tax on income or capital gains realized by the trust. In addition, the contributor of stock to a stock diversification trust will generally receive a tax deduction for at least ten percent of the value of the assets contributed.

Consider the case we looked at earlier involving \$5 million of Microsoft stock. If the owner contributed the \$5 million of Microsoft stock to a properly structured stock diversification trust, the trust could immediately sell the stock, recognizing the entire \$5 million. The trust would owe no tax, and so it would have \$5 million to invest in a diversified portfolio of assets. In addition, the contributor would receive an income tax deduction of at least \$500,000 in the year the stock was put into trust.

To qualify as a tax-exempt trust, the trust must meet certain rules.²¹ Key among these rules is that the contributor may retain the right to an income stream, not less than 5% per year, from the trust for a period that can last a very long time, but generally not more than about

sixty years. The contributor gives up the right to the trust principal, and keeps the right to the income stream. At the end of the trust term, which will usually be well after the end of the contributor's life, the balance remaining in the trust can be used to establish a charitable legacy for the contributor.

Asset Protection

In addition to the tax benefits of a stock diversification trust, because it is a trust, a stock diversification trust can include a spendthrift clause which under certain circumstances will protect the trust assets from any claims that might be brought against the trust income beneficiaries. This extra benefit comes for free if the trust is properly drafted

Ability to Provide For Children, Grandchildren

A stock diversification trust can be structured so that after the original contributor and spouse die, the contributor's children can receive the income. In some cases, even the contributor's grandchildren can be in line to receive income. There is no stated maximum possible term for a trust, but the expected life of most stock diversification trusts would be in the range of fifty to sixty years.

Payouts and Trust Term

The stock owner who contributes stock to a stock diversification trust can decide who

²¹ The full rules are in §664 of the Internal Revenue Code. These rules have been present since 1969.

is eligible to receive payouts from the trust. Typically, the owner will retain the right to receive payouts, usually 5% of the trust value each year, for life. The owner's spouse can also be a beneficiary, and in the vast majority of cases the trust can last for at least the longer of the spouses' lives.

In addition, in most cases, the owner and/or spouse can also name one or more children, or nieces or nephews (or anyone, really) to be a successor income beneficiary. In some cases, depending on the ages involved, grandchildren can also become beneficiaries after their parents and grandparents are no longer living.

The expected term of most stock diversification trusts is determined by the length of the lives of the beneficiaries, and by reference to actuarial tables. In the typical case, the expected life of the trust will be 50 to 60 years. At the conclusion of the trust term, the trust assets can be used to fund a legacy charitable endowment, which can be administered by the owner's grandchildren.

Deferral Option

A properly constructed and properly managed stock diversification trust can provide a period of tax-free deferral during which no payments are made to the beneficiaries, and instead the assets grow, inside the trust, tax-free.

When this deferral is in place, the trustee maintains a bookkeeping account called an accumulation account. Each year while deferral is occurring, the amount that would have been eligible to be paid, but wasn't,

is added to the accumulation account. For example, if a trust could have paid out \$50,000 a year, but is in deferral mode for five years, after five years there would be \$250,000 in the accumulation account. If after five years deferral was no longer desired, this accumulated amount could then be paid, in whole, or in part, in one year or over multiple years. In addition, the annual payment from the trust could be paid on top of the accumulated amount.

Professional Management

Stock diversification trusts should be managed by professionals. The management is frequently split between a trustee who attends to all the trust-specific compliance, accounting, reporting, and tax returns, and an investment manager who handles the investments.

Tax Reporting

A stock diversification trust is a separate taxreporting entity. Even though the trust itself is tax exempt, it must file tax returns. These returns might be quite complex, but such complexity does not affect the income beneficiary.

Each income beneficiary will receive a tax form k-1 from the trust. These forms are typically one page of information.

Tax Treatment of Payments

Section 664 provides that a stock diversification trust keep track of four "buckets" of income. These buckets, roughly speaking, are 1) ordinary income 2) long-term capital gains 3) tax-exempt income and 4) trust capital.

When a trust earns income, that income goes (in an accounting sense) into the appropriate

bucket. When the trust makes a payment to an income beneficiary, the tax law says that those payments are deemed to come first from ordinary income, until that bucket is empty, then from long-term capital gain until that bucket is empty, and so on.

Limitations

The income beneficiaries of a stock diversification trust do not have access to trust principal. For example, if an owner contributes \$1 million to a trust, that owner will have the right to the income payout, usually 5%, for life, and the life of a spouse, and then potentially the lives of one or more children, and even grandchildren. But the trust principal itself is no longer belongs to the owner.

In other words, after the owner contributes stock to the stock diversification trust, the owner goes from owning the stock outright to owning the right to a stream of payments from the trust. This stream of payments is a capital asset. There is a secondary market for streams of trust income, and under some circumstances it is possible to sell this right.

Costs

The costs to create a stock diversification trust can vary from about \$1000 if the trust is prepared by someone with a great deal of experience and efficiency, up to twenty thousand dollars or more for a lawyer working on a bespoke trust. Ongoing costs will generally include both a trustee fee and an investment management fee. A 2019 survey by the Trust Advisor reported that the average annual fees charged by ten trust companies on trusts up to five million was 0.53%, with

an annual minimum of \$5210. Those fees have likely risen since then.

Key Decisions

Once you've decided to use a stock diversification trust, there are only four, easy, decisions to make:

- 1. Do you want to be an income beneficiary?
- 2. Do you have a spouse who you want to be a successor income beneficiary?
- 3. Who do you want to be income beneficiaries after you and/or your spouse?
- 4. What property (e.g. shares of stock) do you want to contribute to the trust for the trust to sell, without tax, and reinvest?

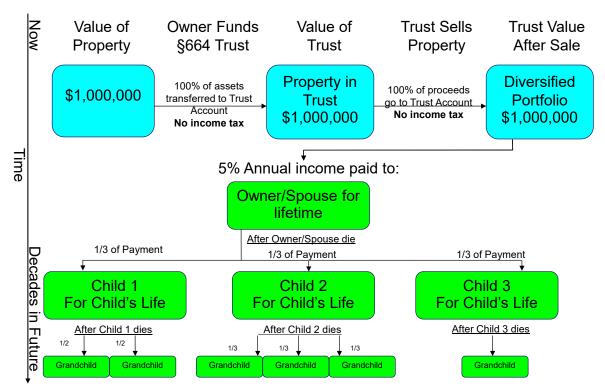
Timing

When you use experienced advisors to create your stock diversification trust, your trust can be created easily and quickly, in no more than a few days.

Example

The following flowchart shows an example assuming a husband and wife fund a stock diversification trust with \$1,000,000 of appreciated stock.

Example Use of §664 Trust for Real Estate Diversification



This is an example only, and does not necessarily represent any specific client situation. At the conclusion of the life of the last beneficiary, or the final term of the trust, the remaining assets will go into a donor advised fund account. The term of each trust will be a function of the ages of the beneficiaries living at the time of the client's death, and the applicable IRS tables and rules.

Choosing a Solution

For most holders of concentrated positions, the following set of questions and answers will help identify the most appropriate solution. These questions and answers are visually represented as a flowchart on the subsequent page.

Is there excess risk from a concentrated position?

NO — No action needed.

YES — Continue to next question.

Is the risk temporary or permanent?

TEMP — Consult hedge and tax experts to see if hedging is right for you.

PERMANENT — Diversify. Continue to next question.

Is the amount greater than half a million dollars?

YES — Continue to next question.

Are there rare or special circumstances?

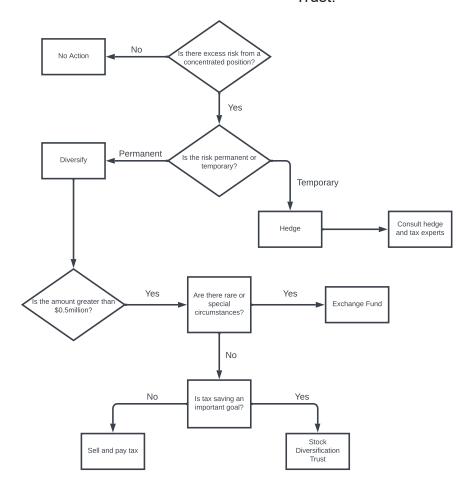
NO — Continue to next question.

YES — Consider an exchange fund.

Is tax saving an important goal?

NO — Consider selling outright and paying tax.

YES — Consider a Stock Diversification
Trust



COMPARISON OF DIVERSIFICATION ALTERNATIVES

Strategy	Income Taxes	Asset Protection	Control	Non-Tax Financial Costs	Liquidity	Time Frame	Tax Reduction
Outright Sales	High	None	Complete	Deminimi	Complete	Immediate	Max
Sales Over Time	High	None	Phased in	Deminimi	Phased in	Phased in	Limited because phase in
Exchange Funds	Deferred until finds withdrawn	None	None	Varies. Est. 1.5% up- front plus ~ 1% per year	Limited	Must last at least seven years	May be funded with overvalued securities
Prepaid Variable Forward	Deferred until funds withdrawn. May have tax risk.	None	None	Variable to high, and difficult or impossible to know in advance	Depends	Typically 2-5 years, then must renew (at cost) or pay tax	Good if done right, but temporary
Stock Diversification Trust	Deferred until funds withdrawn + upfront income tax deduction	Yes	Very high	Small up- front. ½% per year	Limited	From 20 years up to fifty to sixty years	Very high, because trust may invest in a very wide variety of assets

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