

CHAPTER 1

Why Trade Options?

I am frequently asked, “With so many places to invest and with the complexity of the markets, wouldn’t I be better off letting a professional manage my money rather than trying to trade options myself?” Couple that with money managers asking, “You wouldn’t do your own brain surgery, would you, so why manage your own money?” I understand one’s reluctance to enter the world of self-directed investing. But after 33 years in the business world and over 26 years in trading, I can assure you that no one cares for your money like you do. Many money managers go through a three-to six-month training program and they are off and running trading your hard-earned savings. Compound that with the fact few managers beat the S&P 500 returns (after fees and commissions) on a consistent basis, and you should begin to wonder why you have not been investing your own capital all along.

The next questions that arise are “But options are so complex, am I not better off just trading stocks?” and “How could I possibly compete with the options professionals?” As a long-time professional options trader who now trades “retail” right along with self-directed investors, I have much to say on this topic. So, let’s begin by looking at the nature of options.

Strategic without Being Directional

If you put three or more market professionals in the room and ask, “Which of you can predict market and individual stock direction the best?” you better be ready for the heated argument that will ensue. The economist will explain that she can, because she understands the mechanisms that drive the market in the long term. The fundamental analyst will tell you that everyone knows the market goes up in the long run but he can differentiate which stocks will go up the most. The technical analyst will say, “Hey, people, the market moves in two directions. And I can tell you when you will be near support or resistance levels, and when the Fibonaccis have retraced.”

Though always a hot topic of debate, research shows that market movement is mostly random in the long run. And this premise of random (Brownian) motion is actually at the heart of every option pricing model. If markets move randomly, then how does anyone make money in the markets? Well, markets actually move randomly, but with a “positive drift.” This means that in the long run almost everyone who owns a diversified stock portfolio should make money. And that amount should be around what is known as the “risk-free rate of return.” Over the past 50 years, that has amounted to a bit over 6.2 percent per year. Now, that’s a fair bit of change, so you could do worse with your money. But you can also do better—a lot better, actually.

As the technical analyst said, the market moves in two directions. In fact, over the past 50 years, the market (as represented by the S&P 500 index) has gone up on 52.89 percent of the days and down on 47.11 percent of the days. So why try to make money by guessing which stock will go up the most? Options allow you to profit from movement in either direction or from no movement at all! In other words, options are strategic without being directional. You can make money from virtually any scenario if you craft your trade properly.

A Word about Leverage

Leverage is a concept that is often vilified. Yet when leverage is used appropriately, it is one of the most powerful means of enhancing portfolio returns available. Why are we talking about leverage and how does it relate to options?

Leverage is when you use borrowed money to enhance the return on your investment. And before you ask, yes, leverage increases risk to your

portfolio. But if you are to be successful at trading, you must understand that risk can be a positive concept. All financial instruments are merely means of transferring risk. (Even the “risk-free rate of return” causes the bond purchaser to incur the risk that our federal government cannot pay its debt. And that risk seems to be a bit higher of late.) As long as you are “paid” more than you perceive your additional risk to be, risk becomes your means of making money. In other words, you need to stop thinking of risk as something to be avoided and start embracing risk as your means of making money. It is half of the risk versus return trade-off that should play a part in every trade you make. By means of illustration, let’s look at the prospect of selling hurricane insurance. If I offered to pay you \$4,000 to insure my \$1,000,000 condominium on the coast of Florida when a hurricane is bearing down on it, would you do it? If you answered “Yes,” you may want to rethink your answer, or rethink taking up trading. But if I offered you the same \$4,000 to insure my Chicago area home against hurricanes, you should jump all over the deal. In this case, the return was the same, but the risk differed. Now, if I offered you \$900,000 to insure my Florida condo and \$4,000 to insure my Chicago home, we have a different picture. Here we have differing risks for differing returns. Each of those insurance policies is different. Which is better? I would consider the Chicago home “free money,” or as close to free as could be. Chicago has never seen a hurricane to the best of my knowledge. But if I believe the chances of the condo being damaged are 50 percent and the amount of any damage exceeding \$900,000 as being very slim, the condo might be the better “trade.” Even though the risk is higher, the return may be more than commensurate with the risk. The increased risk led the insurance buyer to pay too high a price, in your eyes. Of course, all risk is not good risk. The types and amounts of risk you take on in your portfolio should depend on your particular situation. Inputs to this decision include how old you are, how capable you are of withstanding drawdowns (and replacing those lost funds), how well you understand riskier trades, how much edge you perceive in the trade, and on and on. One powerful piece of information options tell you is how much risk the options market participants as a whole perceive in a given trade. So, you have millions of investors’ collective opinion at your disposal to aid you.

Getting back to leverage, you don’t remember saying you wanted to borrow any money, do you? Maybe your credit rating is not up to snuff. Or maybe you just do not want to make those monthly payments. No worries! You have two means of achieving leverage with options without having to submit yourself to a credit check each time you borrow and without receiving those fat coupon books in the mail. First, when you open a margin or

portfolio margin account, you are in fact setting up a mechanism for borrowing money. You do not even need to ask to borrow from then on. If you exceed the capital in the account, your broker will automatically lend you additional funds and charge your account only for interest on the amount utilized. How much can you borrow? You can borrow quite a bit, actually. We will look in more detail at that later.

More to the point is that options are levered instruments in and of themselves. If you want to purchase 100 shares of GOOGL (Google) stock (\$590) in your IRA (no leverage), you would currently have to come up with around \$59,000. But for a mere \$3,300, you could command the same 100 shares for the next 189 days, by purchasing a Mar 15 600 Call option. Sure, the option has a different risk profile and profit and loss profile, but above a certain price (\$633), you will fully participate in the stock's upside. After those 189 days, you will either need to cough up the remainder of the money to hold the stock, or sell out your options to lock in your profit without ever having to come up with the additional money. Now, that's leverage! Where else can you borrow that kind of money without a credit check? And have you tried to borrow money lately? Even my sister requires fingerprints and a full financial statement for me to borrow \$20.

Going a bit deeper into what options leverage means to your returns, let's say GOOGL stock moves up to \$650 at expiration of the options. While it is true you will make more money with stock in this example, let's examine the ROC (return on capital) for each trade (see Table 1.1).

As you can see, the nonannualized ROCs for the two strategies are 10.17 percent for the stock purchase and 51.52 percent for the purchase of the call options. Quite a difference! And one that may make a trade in GOOGL possible, considering not everyone has \$59,000 to plunk down for 100 shares of stock! This is the power of leverage that options provide. Multiply that power by the loan you automatically receive in your margin or portfolio margin account and you have the framework for some handsome returns!

TABLE 1.1 Return on Capital for Google Stock versus Call Options

	Price	Cost	"Strike"	Breakeven	PnL at \$650	ROC
Stock	\$590	\$59,000	\$590	\$590	\$6,000	10.17%
Options	\$33	\$3,300	\$600	\$633	\$1,700	51.52%

Options Are a Decaying Asset

You know the old saying that a new car loses 30 percent of its value the second you drive it off the lot? Though that might be exaggerated a bit, the concept is clear. Options are much like cars, though an at the money option's depreciation starts out slow and accelerates the closer it gets to the end of its "life." At least you can make use of cars while they depreciate, but you can't drive your option to the store to buy a gallon of milk or a cup of yogurt. So, what good are options? To the owner of an option, its decay leads to a bit of impatience in hope of seeing your option grow in price before the decay "gets you." But to the seller of the option who took on the risk of the short option, decay is their friend. So why would you ever purchase an option if you know it will decay away over time and serve no useful purpose while doing so? Well, options are not quite that simple. There are two parts to the value of an option, and they are called intrinsic value and extrinsic value. We will discuss this in more detail later, but for now, you need to know only that extrinsic value decays, whereas intrinsic value does not. So, back to the car analogy: Sometimes your option ends up in the junkyard and other times it becomes a collector's item! It all depends on the option's intrinsic value at expiration.

One other point needs to be made about the decaying nature of an option. When you purchase an option, you are paying more than the option is (intrinsically) worth at that time. In other words, you are paying some premium (often called time premium or insurance premium) for the right the option provides. Let's look at an example. Let's say XYZ stock is trading for \$48.50 and the \$47 call is trading for \$2.25. If you bought the call, exercised it immediately and sold the stock out you received from the exercise, you would receive \$1.50 for your trouble, exclusive of fees. Let's walk through this. When you exercise the \$47 calls, you get to buy the stock for \$47 and sell it out at the market price of \$48.50. That means you keep \$1.50. This is your intrinsic value. But you paid \$2.25 for that call, so you are still out \$0.75. This is the extrinsic value, or time premium, which you paid for. It is this amount of \$0.75 that will decay away unless the stock rallies. And if you purchase an out of the money option, it is all extrinsic value by definition. This means that if you buy an option, your probability of profiting from it is less than 50 percent. So, why purchase it? A long option has limited loss (what you pay for it) and unlimited profit potential. Does that make it worth the money or should you be selling options instead? For the first part of that discussion, we will examine the nature of long and short options in a bit more detail. But there will be much more of this discussion to come later in the book!

Insurer or Insured?

Have you ever wished you could make money like insurance companies do? Rather than paying for insurance each month, you could figure out how to collect enough premiums over time to pay for the catastrophic events that might occur plus a bit extra (or a lot extra) as profit? Or are you content to pay those premiums so you do not have to worry about things, even if it proves to be a bad financial decision? Once again, as we have discussed, every trade is about transference of risk. When you buy an option, someone is taking on your risk and collecting a fee for their trouble (much like you buying insurance). More often than not, that seller will be the one profiting from the transaction (much like an insurance company). And that profit maxes out at the premium you paid (and they collected). But at times, you get to cash in on your policy in a big way. So, over time, who comes out ahead? The answer is a definite, unqualified “It depends!” Wouldn’t it be nice if you could figure out the probabilities of an event occurring and its cost beforehand? Just like an insurance company utilizes actuaries to calculate the probabilities and costs of losses and sets premiums accordingly, option sellers do the same thing! But you may feel like you will never be able to figure that out. The math is daunting and the concepts beyond reach. Thanks to some incredibly powerful and easy-to-use software provided free of charge by a good broker, it is actually pretty easy! Thus, if a trader feels the option is too cheap and that the expected value of the trade over time gives her a profit, she can buy it. And if she feels it is too expensive, she can sell it, take on someone else’s risk, and hope to profit from it (just like an insurance company). In essence, you can choose to be the insurance company or the insured, and switch roles at any time, based on your assessment at the time.

Probability of Making Money

One of the most amazing qualities of options is that you can quantify the probability you have of making money on any given trade before you make it! That sure makes things easier, don’t you think? Although it is definitely a huge advantage, making money trading options is a bit more complicated than that. In fact there are at least three more major moving parts that we need to discuss. We will introduce the concepts here and drill down much deeper later.

If you are able to make money on 60 percent of your trades, does that guarantee you will make a profit? What if you lose twice as much on your losing trades as you make on your winners? Using a quick example, let’s assume you make

10 trades and you make a profit of \$1 on 6 of them, giving you a probability of profit of 60 percent. That gives you a total of \$6 in winnings. But on each of the four losing trades, you lose \$2. You now have \$8 of losses, giving you an overall loss of \$2 on your 10 trades. So, we can see it is not just the probability that leads to profitability. It is also the ratio of our average winner to our average loser.

The first thing you learn in a beginning statistics class is that probabilities have merit only if there is a large sample size. In other words, if I flip a (fair) coin 1,000 times, I can expect to get about 500 heads and 500 tails. I will not be off by much because I have a 50/50 chance of achieving either result. But if I flip the coin twice, I have only a 50 percent chance of achieving one head and one tail. In 25 percent of the cases, I will flip two heads and 25 percent of the time I will flip two tails. In other words, the probabilities have little hold over my results when the number of occurrences is few.

Probabilities also have something to add to the discussion of how large your trades should be. Trade size, in fact, is one of the most frequently overlooked subjects when learning to trade. Let's look at an example. Let's say you have \$1,000 and bet \$250 on each of four successive flips of a coin. What is the probability that you will lose all four flips and be completely out of money? The math is " p^x ," where " p " is the probability of the event occurring and " x " is the number of sequential times you are testing for the event to occur. Thus, in a coin flip, where you have a 50 percent probability of losing, the probability of losing four times in a row is $.50^4$, or 6.25 percent. If your probability of losing each individual event were 30 percent (you win 70 percent of the time), you would go broke after four occurrences $.30^4$, or 0.81 percent of the time. If your probability of losing each event were 70 percent (you win 30 percent of the time), you would go broke after four occurrences $.70^4$, or 24 percent of the time. Based on these results, betting \$250 is too large a bet for my comfort, especially if my odds are less than 50 percent. Translating this to trading, if 25 percent of my account size is too much to risk on each trade, what size is optimal?

Once again, the answer is "it depends." Since there is not a simple answer and because the answer hinges on a number of inputs, we will save that discussion for later also.

Market Efficiency

You may be asking yourself, "Even if I can learn all this, how can I possibly hope to compete against professional traders?" I have good news for you on that front! Though professional traders and retail traders are "watching the same picture" and trying to profit from the same theoretical edge, the types of strategies

employed differ greatly. As such, the retail trader is actually in a better position to profit thanks to the existence of the professional trader. Let me explain.

We will start by looking at a few of the more common professional trading strategies. First, we look at options market makers. Market makers are traders who get better treatment in several ways due to the fact they provide liquid, two-sided markets in all options for all stocks they are assigned, or choose. There are rules for how far apart the bid and offer can be placed based on the price of the option. So, when a retail trader wants to buy or sell an option, the market maker is out there providing liquidity to facilitate the trade. The market maker can “skew” his quotes so the trader is more likely to buy or sell, based on his opinion. But the market maker has to take whichever trade accepts his market. That is, if someone wants to buy the market maker’s offer or sell his or her bid, the market maker is obligated to make the trade. The retail trader, on the other hand, has the advantage of choosing his trades! We can shop for the best bid or best offer for the exact trade we choose to make. Do not underestimate the advantage that gives us!

The same liquidity argument can be made for HFT (high-frequency trading) scalpers. HFT scalpers are persons or firms who quote markets at hyper-speed using complex computer algorithms. All you really need to know about them is they make tight, deep markets of which retail traders can take advantage, but trade only in the stocks they choose. This is in sharp contrast to market makers, who have an obligation to always make markets in all their stocks.

Another professional strategy is that of volatility arbitrage. Proprietary traders, who buy volatility they deem cheap and sell that which they feel is expensive, typically use this strategy. Of course, for “vol arbs,” most stocks’ options are typically cheap or expensive at the same time. For example, if VIX is 12.50, most equity options trade for a relatively low implied volatility (IV). When VIX is 40, most equity options are expensive, as their implied volatilities are rich also. So, the operative word for vol arbs is “relative.” They will always be long option premium they deem cheap compared to the rest and will be short option premium they consider rich compared to the rest. Though they will run a short premium or long premium book (portfolio) based on their opinion of the overall volatility in the market, they will often be on the other side of trades the retail trader wants to make, thus facilitating our trades.

Though there are many other strategies employed by the professional trader that often finds him on the other side of the retail trade, there are two points I would make about each and every strategy:

1. This does not mean the professional is right and the retail trader is wrong. In fact, since each trader could be doing something different with a trade, both could be wrong or both correct.

2. The most important point to be made is that the professional trader supplies liquidity to the marketplace that the retail trader must have in order to be profitable. Without the professionals, the retail traders would be out of business! It is a symbiotic relationship that is to be nurtured, not feared! The professionals keep markets tight and deep. We term this “liquidity” and it means you can buy or sell any liquid option with very little slippage in price. If you think the offer for a particular SPY call is too expensive at \$1.78, you can probably sell it for \$1.77. This is the sign of an efficient marketplace, without which this book would have been one sentence that stated, “Do not trade options.” Instead, I have yet to figure out why everyone who has the capital and the desire to learn does not trade options. It is perhaps the most efficient, level playing field the financial markets have ever known.

Tired, Worn-Out Metaphors

It is time for two tired, worn-out metaphors to make their appearance. Why? We will discuss them because they are accurate and illustrative. The first one we just discussed. But I want to reiterate it because it holds the key to successful, profitable options trading. Let's think about an insurance company and how they price their products. An insurance company takes in (relatively) small amounts of premium from each customer on a regular basis in order to cover large amounts of risk for the customer. They hire a staff of actuaries, highly trained in math and probability theory, to look at the probabilities of disaster occurring, amount of average loss, and so on. They determine the amount of premium they need to charge to give the firm a certain percentage profit in the long run while protecting the firm from catastrophe in the short and long run. They know that a certain number of their customers will make large claims (meaning occasional large costs for the insurer). These are the same things we do as options traders. If we are premium buyers, we are the insured, buying a policy from our insurance company. We generally pay more than the option is worth for the protection or, in the case of options, unlimited profit potential it provides. If we are a premium seller, we are the insurance company. We sell options for more than they are worth, win on a high percentage of trades, but have an occasional larger loss as part of our trading life. In general, short premium is the winning strategy for options trading, just as most insurance companies make money. The small amounts of premium consistently collected more than make up for the occasional large loss.

The other metaphor is one I hesitate to use as it can easily be misconstrued. I will try to make it clear. If you go to the casino every month for the

next 10 years and play craps, roulette, or the slots, you will almost certainly come up a loser. The term “gambler” in my mind points to a person who is playing “against the odds.” That is, they do not have the odds in their favor but are nevertheless hoping to overcome them. Though this can be done in the short run, it is highly unlikely you will do so in the long run. Using this definition, casinos do not gamble. Rather, they have the probabilities working for them and they know if they do one thing correctly, they will be profitable. What is that one thing? Sizing bets made in their casino properly. My guess is if you were to walk into a casino and slap \$1 billion on the pass line of a craps table, the casino would not take the bet. If they have the odds on their side, why wouldn't they take the bet? Odds work only if you have a high enough number of occurrences. So, for a single bet, the casino would not risk losing that amount of money. Now, if the same gambler came in and wanted to bet that same \$1 billion in \$100,000 chunks, that would be a different story entirely. The casino would take all 10,000 \$100,000 bets. In fact, the pit boss would probably be looking at a nice bonus if he got you to split up your bets that way and stay at his casino. Why the difference? He is not gambling. He is going to win because the odds are in his favor *and* the number of occurrences facilitates the odds getting to work their magic. Also, the casino is now able to withstand the maximum drawdown it might incur while the odds have time to “do their thing.”