

PART I

The Uniqueness of Zero-Sum Markets

CS. Lewis is one of my favorite authors. In his book *Out of the Silent Planet* (the first part of his science fiction trilogy), Lewis tells the story of Dr. Ransom. Ransom studies languages and, through a series of events, is kidnapped by two unscrupulous former colleagues and taken in a spaceship to the planet Malacandra, which is in fact Mars. The story is told as a narrative by Dr. Ransom. One intriguing literary license taken by Lewis is how Ransom sets the stage for the narrative. Ransom says that it is impossible to communicate to the reader or even hope that the reader will remember the pervading sense of danger he felt on Malacandra. Part of what makes the story so interesting for me is putting myself in Ransom's place, knowing that he was scared out of his wits most of the time, even though he learned that inhabitants of the red planet were not only benevolent but wanted to see him return to his own world. He was literally in a whole other world, and he found that frightening. Ransom learns the language of this alien world and, in the process, finds that the universe is full of unexpected things that

make his own life much more complicated. I assume that was frightening for him too.

In my view, the issue of trading well is a study in self-awareness. Trading can be done only in the context of understanding how different zero-sum markets are and how we must change to exploit them. In this book, the reader will gain a more complete understanding of time compression and how it is disclosed using multiple time frames if he or she can remember that the concept is based on knowing what a zero-sum market is and how we must adapt to it.

Part I provides a complete look at what a zero-sum market is and the parts that make up the market. This part also looks into how we as human beings process information and take action. How we process information and take action is the cornerstone of what creates time compression. This is crucial to creating a winning trade approach. You need to focus on the bedrock issue that zero-sum markets are not what you think they are. Much like Ransom's experience on a strange new world, learning what "zero sum" really means and what we need to do to exploit zero-sum markets may be frightening. But in the end, that is the knowledge we need to succeed.

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CHAPTER 1

Basics of Zero-Sum Markets

If you want to buy a stock, ask who is selling it.

—Old trading adage

In the book *Slaughterhouse-Five*, the author, Kurt Vonnegut, tells the story of a man who (among other things) is kidnapped by aliens and put on display in a zoolike setting. At first, the man is lethargic and not much fun to watch; evidently he is unhappy with captivity. The aliens decide that something needs to be done to make the man more viable and active. They install a stock ticker in his habitat and make him a proposal. They say that they have opened a stock trading account back on Earth and that the stock ticker is for him to keep track of what is happening in the stock market. He is free to buy or sell anything he wants, and those trades will be placed in his real account back on Earth. If he begins trading, they promise, once his account balance reaches a certain amount, they will let him go. He will be free and rich once he returns to Earth. Of course, the man does not know that the prices on the stock ticker are false and that there is no real account. The aliens watch with fascination as the man makes and loses vast sums of money; the random prices that appear on the ticker drive him through every human emotion possible. At this point, they have a very interesting zoo specimen.

I think Vonnegut's use of the stock ticker, money, and the promise of freedom is one of the funniest things an alien race could

use to stimulate human behavior and emotions. Aren't money and freedom what we all want from our personal trading? The book also shows a nontrader's point of view on the markets quite clearly. Trading stimulates the best and worst of our emotions, but it does so because we really don't know the game very well or how to play it. Once we do, we have more control over our emotions, but that is a matter I'll go into later.

In Part I, we are going to discuss the trader issues we face from the perspective of how they create both the market and our urge to action. We need to know some important ground rules about the zero-sum environment because zero-sum becomes the playing field for us and how we play the game determines the price action we are trying to exploit. We—every one of us—create the market we trade. *How* we do that determines price action.

As we get started understanding time compression, I want to set the stage well for the process of drawing all this together at the end of the book. We want to start and finish with the issue of what motivates the trader's urge to action. In this chapter, we will see what makes zero-sum markets different from other kinds of markets. It is this difference that brings the issue of urge to action to the forefront of time compression. Nothing happens in a zero-sum market unless a trade is executed. The issue of *who placed that trade and what he or she was thinking* is the bedrock to understanding a time-compressed market. Let's start with the basics.

WHAT IS A ZERO-SUM MARKET?

As I said in the preface, very few traders really understand the full implications of trading in a zero-sum market. A zero-sum market is one where no transaction results in an exchange of money between the buyer and seller. Transactions are done by either buying or selling the current price in the market. Both the buyer and the seller must be present at a traded price, and both assume the risk of price action for or against the current price in the market. Money actually changes hands when the buyer/seller liquidates the open long/short position by doing an opposite transaction at some later time. No money is ever made or lost in the market; it changes hands based on the difference between the traded prices to the individual's personal account. In other words, say 100 accounts have a total of \$100,000 at

the start of trading. After trading is over and the market has changed in price, the total amount of money those 100 accounts have is *still* \$100,000. A certain number of the accounts will have more than they started with; that amount will be *exactly* the amount that the losing accounts will show as a loss. For illustration purposes, I am assuming no fees/commissions in this case.

Futures, options on futures, options on stocks, global cash foreign exchange (FOREX), and options on global cash FOREX are all zero-sum markets. (Equities are not considered zero-sum markets.) When a transaction happens in any of these markets, the buyer and the seller agree to obligate themselves for a specified amount of a particular something at the last traded price. For most zero-sum markets (except global cash FOREX; you can hold those positions forever), there exists a “day of reckoning” when the transaction must be settled (although you can liquidate any time prior to that day). If the price has changed from the initial executed price, the difference in price is calculated as a cash profit due or a cash loss due based on the size of the transaction. Both sides are obligated to this cash settlement, win or lose.

Most zero-sum transactions are done under the authority of an exchange that guarantees performance for the obligation from both sides. This ensures that those traders with a loss will pay it and those traders with a gain will receive it. Global cash FOREX is done in the same manner but between competing banks without a central clearing relationship.

The important and most vital part of this environment is that in order to buy something, there *must* be a willing seller at that price. In order to sell something, there *must* be a willing buyer at that price. No matter who you are and how much money you have, you cannot participate in this environment *unless* there is an equal yet opposite position on the other side of the market. You cannot buy unless another trader sells to you. You cannot sell unless another trader buys from you. This is always the case regardless of whether you are trying to get into or out of the market.

WINNERS AND LOSERS

For the sake of illustration, suppose you believe that the price of corn will rise over some period of time. At this point, we aren't concerned

with why or how you think that will happen; only that you decide to buy corn. If you are trading corn futures on the Chicago Board of Trade, you are trading in a zero-sum market for corn. At the exact moment when you place your order into the market, the only way you can buy corn is if another trader somewhere is willing to sell corn at the same price and enters an exact order to sell. If your order to buy is matched with an order to sell, a trade is transacted. At this point, the exchange authority steps in and confirms that one of you bought the market at the last price and one of you sold the market at the same price. For illustration, I am assuming one contract was bought and sold.

So you now own some corn at the price you requested. Someone else sold it to you.

Once you own some corn, the issue of zero-sum markets takes on a completely different character. One hundred percent of all the analysis, study, education, and research attempts to address the issue of what happens next and how to benefit from it or how to prevent the worst from happening. At this point, though, we are concerned only with the function of the market, not how to exploit this process.

So now you own some corn, which somebody sold to you. What happens next?

After those two orders are transacted as a trade at a particular price, one of you will win and one of you will lose. If the price rises, the buyer (you) will make the money and the seller (the other trader) will pay you. You need to really get this point: If the price rises, the buyer will make the money, and it is the seller who will pay the buyer—not the “market,” the exchange, or anyone else. The trader on the other side of the market, who holds the losing transaction, pays the money to the winner.

This is the critical thing about zero-sum markets that makes them different from any other markets and what makes the issue of finding the “right price” when you decide to participate so important. If you are wrong, your money belongs to someone else right now; the trader on the other side of your order (whoever that is) has your money. *The winners get paid by the losers.* No money is ever made or lost through the transaction itself; it is made or lost when the price moves for or against your particular trade entry price. You cannot make money unless someone else loses theirs. That is the bottom line.

A MARKET OF PEOPLE, NOT PRICES

That, in essence, is what zero-sum markets are about. But that is really not the issue when we trade. When we trade, the issue is: Why are you doing this trade and what if you are wrong? Most traders don't understand that in a zero-sum market, other dynamics in play create the traded prices and make those prices move. The market itself is only a machine. All the market itself will ever do is provide a place for people to come together and choose to enter an order from one side or the other. It is the *nature* of those orders that we have to be concerned with. We need to know their nature because once we have entered a trade, the only way we can get paid is if someone else loses; and the only way someone else can lose is if the orders *after* us are larger from the same side we are on; that is what creates the price change we are attempting to exploit. Orders *after* us create our profit or our loss. This means that *other* traders decide if you win or lose, not you.

Let me give you an example of how the prices move. Let's say that there are 100 orders to buy the market at a certain price—say \$3.00 per bushel for corn. At the *exact* moment those 100 orders to buy enter the market, there will be some number of orders to sell at that price. Let's suppose orders from the sell side total only 80. Therefore, 80 orders to buy are filled; there are now 20 orders that haven't been filled to buy corn. So the market goes looking for sellers to match with those buy orders. Now what does a seller want? He wants a high price. And what does a buyer want? She wants a low price. Therefore, the \$3.00/bu price was seen as "low" by a certain group of buyers and "high" by a certain group of sellers. In other words, one group of traders came to the exact equal yet opposite conclusion about the \$3.00/bu price: "It is time to do something, and the price is too low/high right now." However, none of the buyers or sellers likely knows each other or whether their combined orders are evenly matched. Nobody knows what the next group of orders will be or how large those orders will be. But the fact is that some group of traders working in the markets concluded that \$3.00/bu for corn was "too high" and some concluded it was "too low." Each group chose to act on that conclusion.

But there were 20 more orders to buy left over from that conclusion at that particular moment in time. That is a fact. If the sellers

knew that, they would have waited to sell, and here's why: The market is going to go looking for sellers to meet those remaining buy orders. That means the market will look for sellers *above* \$3.00/bu. Suppose the market doesn't find any sellers until the price rises to \$3.10/bu, and there it finds 20 sellers? The remaining buyers who wanted to buy at \$3.00/bu have to pay \$3.10/bu. The buyers from \$3.00/bu have a gain, the sellers from that price have a loss (except the new ones @ \$3.10/bu). As time goes on, some sell orders come in at \$3.10/bu; but there are no buy orders yet. So the market goes looking for buyers and finds 10 new orders at \$3.05/bu as it drops back in price. As the orders keep coming in all day and all night, a handful are always left over at each price as the machine keeps processing the new orders that show up at the last price. The bottom line is that as the price changes, it affects all traders' equity, no matter which side they started on or from which price they started. The order flow is never balanced, and there are always some orders left over at each traded price, which is why the market fluctuates in price all the time.

Just keep playing that scenario over and over in your mind and you will understand how price moves in a zero-sum market happen. The only thing the market is doing is processing those orders as they come in over time and matching them with orders from the other side over time. The market doesn't rise or fall in price for any other reason; it is just processing the orders as they come in over time. The market matches buy and sell orders. If there are any left over from one side or the other once orders at the current price are filled, the market goes looking for more orders, creating a price change. That is all there is to the *deus ex machina* (Latin for "God from the machine").

All the other things that go on all day long in a zero-sum market are a reflection of this order flow. In the case of the buyers/sellers at \$3.00/bu, as the order flow was larger on the buy side at that \$3.00/bu price, the market went higher. Once the order flow changed to be larger on the sell side, the price dropped to fill those orders. That's it. The winning buyers on the price rise from \$3.00/bu to \$3.10/bu had a profit *because the order flow was larger from that side*, not from any analysis about what will make corn more expensive, what prices traded last week, what increase in consumption is likely, or who said what on television. The price rose higher because the orders were larger on the buy side for that particular period of time. Now, if the order flow were to change suddenly and become quite large on the sell side, the market would drop, looking for more buyers to fill

the unmet sell orders. If those buy orders never got placed, which direction do you think the market go, and for how long? That is the issue of time compression, but I'm getting a little ahead of myself.

Here is the part of zero-sum markets that must be very clear to you: The order flow was created by individuals trying to answer the question *Is the market too high or too low?* The order flow came from individual account holders doing whatever it is they do to answer that question. They believed they had found an answer, so they placed themselves at risk by placing an order. *That* is the market, nothing else. In order to profit, after your particular order is placed and filled, there *must* be more orders from the *same* side coming into the market after you. If you are a buyer, you can profit only if there are more buy orders entered into the market *after you* are holding your filled order in your hand. That means someone else must come to the conclusion that it is time to buy, and he has to find a seller to disagree with him too. If the sell orders are smaller as the buy orders come in, it is other people who make your trade work, not you. Therefore, you must be concerned with what other people are likely to do and when they will do it; otherwise, you have no hope for a profit. If you don't know what the probability is, trading becomes a game of chance for you.

Time compression attempts to answer this question *What will cause a significant change in the order flow?* Because the market doesn't move for any other reason no matter what we choose to think about the markets, all we need to do is find the change in the order flow to win. The price can't rise unless buy orders are larger than sell orders. The price can't fall unless sell orders are larger than buy orders. One hundred percent of all analysis, no matter what it is or how it is done, is attempting to find prices where the order flow will change, causing a change in the price direction. Except for one thing: All commonly used analysis tools use price and calculate signals without considering the person on both sides of the market who has to place those orders. *What is causing those traders to act and place orders right there, at that particular time? Price analysis cannot predict human behavior, and human behavior is what creates the order flow.*

Earlier, I hinted that the real issue is coming to a conclusion so you can place yourself in a trade. Now is the time to define the real issues in trading, but we need to keep the issue of order flow very fresh in our mind. A zero-sum market exists and moves in price as an

imbalance in the orders causes the market to fluctuate as the market seeks to balance the order flow. As the price changes, half the positions active have a gain and the other half have a loss. That is all there is to the actual market itself. But real people are placing those orders. And the fact is, no trades would be done at all if nobody thought they could profit. This leaves us to determine how those people who placed their orders concluded that it was time to do something. How could half of them think a price rise is coming and the other half think a price decline is coming? This is where the issue of analysis gets so convoluted; all the analysis in the world can't explain how two groups of people can come to *equal yet opposite conclusions*; one group expects a price rise and the other a price decline. The groups square off at the exact same starting point, but the winning half won't be known until more orders are processed. And it is this incoming order flow that creates the price action that will benefit one group and hurt the other, not some form of analysis.

Now that we understand that zero-sum markets present some challenging issues, we can begin discussing how the trader is involved. How prices change and how traders earn a gain or suffer a loss comes from their conclusion-making process. The conclusion-making process becomes the order that creates the price change. Since the market is only a machine that does nothing but process those orders, we need to know how the order got into the machine. It is time to start looking at the critical question that creates the market:

What is the urge to action that creates the order?

How this urge to action plays out in creating the order flow is where the potential for a market to become time-compressed actually comes from. The critical thing to remember is that the market is made of *people*, not *prices*.



THE TRADER'S LIFE

I believe that trading is a *lifestyle* more than an activity you do. It is learning to think and behave a certain way rather than simply buying or selling because you are bullish or bearish. When developing a different kind of thinking regarding zero-sum markets, some critical observations helped me understand what I was involved in when I trade. For people who are just learning what zero sum really means, one of my observations might be helpful.

Think of zero-sum markets as a tug-of-war while equities and other markets are a game of musical chairs. In a zero-sum market, whoever has the force in the market will ultimately determine where prices will go. In equities, whoever is holding the shares (or product) when the music stops is left holding the bag. You can own a share of stock until it reaches zero no matter how many people owned it before you or how much they made as the price changed. In a zero-sum market, you eventually have to let go of the rope or you might be liable for a huge amount of money as your positions change in value. Later, when we discuss leverage and forced liquidation, how the difference between a tug-of-war and musical chairs plays out in price action will become clearer. In musical chairs, there is one eventual loser: the last buyer. In a tug-of-war, everybody on the wrong side of the market force loses.

Part of what helped me develop a better understanding of how this market force plays out was a thought experiment I did trying to answer the question *Who is the force in the market? This dramatically changed how I saw prices and what those price changes mean.*

Suppose there are two groups of people in the market, the professional traders who can do size (meaning a lot of contracts at one time) and everybody else. Let's say there is one trader who can do a 100-lot position. At the same time this trader decides to buy the market, there are 99 one-lot traders who wish to sell. It is unlikely that all 99 one-lot traders will wish to enter the market at the same time, so the large trader has to be content with putting the position on one contract at a time. In order to draw in all 99 one-lot traders, the price will need to decline so that the one-lot traders believe they are seeing a trend develop lower. So the 100-lot trader keeps buying a little at a time as the market falls in price until all the little traders are committed to the short side.

At this point, the large trader likely has an open trade loss as the average position has been bought in a declining market. However, a few of the early small traders will have an open trade gain. At this point, the large trader (who is the dominant force in the market) has the advantage. The reason is simple: The large trader is not going to sell the position; the large trader intends to wait out the smaller trader.

As the first group of smaller traders decide to buy back their shorts, their buy orders are not met with a sell order from the larger trader. Hence, the market goes looking for more sell orders above the market—but there are none. So the market rallies higher, erasing the open trade gains of the small traders. The late small sellers are holding losses. Because the one individual holding all the size in the market has decided not to sell,

the 99 small traders are not in control as they all seek to liquidate. Once the price reaches a level where the large trader has an open trade gain and all the small traders wish to buy back their losing shorts, the large trader sells the 100 contracts one at a time to all the losing traders. In the end, the large trader who controlled the size determined where the market would go in price. It was when the small traders all decided it was time to take their losses that the market had buy orders for the large trader to sell against. Obviously, in an active and liquid market, there are always buy and sell orders coming into the machine, but the basic premise is the same.

If you think this through, you will begin to see that trading a zero-sum market is not about the price but about the people who control the size. When we get to market structure, in Chapter 3, we will discuss the difference in the people who control size and everybody else.

After I learned to see a zero-sum market as a tug-of-war, it became very clear that I needed to understand volume and professional activity. Learning to see the market differently led me down a different path to analysis.
