12 Coping with Contingencies in Equity Option Markets: The "Rationality" of Pricing

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12.1 Introductory Overview

Though this chapter is largely engaged in an empirically grounded account of equity option pricing practices, it does so in an attempt to address broader issues bearing on how prices are determined as a consequence of coping with new types of contingencies associated with emerging derivative markets. These "new" forms of contingencies are tied not only to the inherently complex and abstract character of financial derivatives but also to the highly technological and global nature of these markets. In focusing on some of these "new" forms of contingencies, the chapter seeks to expand upon our understanding of the ways in which ambiguities, uncertainties, and contingencies are actually addressed in ongoing practices. More concretely, as the chapter will attempt to document, actual pricing in these highly contingent pregnant markets tends to reflect a range of adaptive strategic actions rather than theoretically grounded attempts to calculate inherent value.[1]

The decision to focus upon equity option markets is due not only to the highly contingent nature of these markets but also to the fact that they tend to be more accessible cognitively and methodologically than most derivative markets, grounded as they are upon equities; they are also the derivative markets that the author has most intensely studied. The descriptive materials garnered from these markets' trading practices and presented here, however, are not intended as documentary verification of the theses presented, but rather as particular illustrations intended to elucidate the broader theoretical arguments

[1] This focus upon actual pricing practices is linked to the decision not to embed this discussion in any serious manner with existing theoretical texts that might be seen as associated with this discussion. On the one hand, both the markets and the concrete practices being discussed have not been subject to the specific types of concerns presented in this chapter; on the other hand, the general theoretical themes that are introduced in the discussion tend to have such lengthy and diverse histories that any reasonable set of citations is not likely to be helpful in either clarifying the texts or properly placing this discussion within its broader theoretical context. The particular citations made represent cases where the author feels that the reader might obtain further clarification to specific points made in the text or closely related to other discussions bearing on similar issues, though often from quite different perspectives.

being forwarded, which relate to the ways in which contingencies in general are handled. Given that these markets nevertheless still remain comparatively esoteric, despite being highly publicized since the 2008 financial meltdown, some introductory descriptive comments would seem to be appropriate.

12.2 Equity Option Markets and their Management

Despite the fact that equity option markets have recently been subject to a great deal of discussion and analysis, bearing on a wide range of subjects including the 2008 financial meltdown, they remain highly opaque and obscure to all but a relative few. This is not surprising given that options are not only inherently complex and quite esoteric financial instruments but are also utilized in a variety of complex and esoteric ways within financial markets. Fortunately, most of these complexities need not be addressed here given this chapter's much more limited objective, which is exploring how equity options are actually, not theoretically, priced within equity option markets. Broader questions dealing with underlying theoretical/mathematical issues, the legitimacy or overall impact of these options on the economy and society at large, as well as technical discussions bearing on their proper usages are not subjects of this chapter. Insofar as this chapter does have a broader concern, it is, as noted above, with exploring the ways in which the equity option pricing practices speak to certain broader issues bearing on the "rationality" of pricing practice and hence the social construction of meanings and values in general.[2]

Given that the exponential growth in option markets since the 1980s has been due in large measure to the general acceptance of the Black-Scholes-Merton option-pricing model, this stated objective might sound minimally incongruous. Most financial options and their various markets only exist in a very real sense by means of these pricing models. Without these pricing models, it is highly unlikely that these markets would exist in their present vibrant form. What is commonly overlooked, however, is that while practically all equity options are "theoretically" priced in accordance with Black-Scholes-Merton and related pricing models, in actuality they are continually priced and repriced in the marketplace, that is, through market transactions.[3] Admittedly,

[2] To ward off any possible misunderstandings, it should be emphasized that given this focus, this chapter deals with price-setting practices in auction markets, not production markets.

[3] The literature bearing on how options are priced, most of which does not speak to the issues under discussion in this chapter, falls into a number of different categories. The largest of these is probably the vast "how to trade options" literature written for the investor/speculator sellers and public. Most of this literature seeks to explain and show how options and various option strategies can be applied profitably in the marketplace. As such, this literature generally builds on the mathematical economic literature generated by mathematical and behavioral economists expanding upon and modifying earlier treatises on this subject. See for example McMillan (2002, 2004) and Natenberg (1994). The economic literature ranges from numerous quite technical mathematical economic treatises and articles to more political

"theoretical" prices play a role in determining transaction prices, but only, as I will attempt to show, in a quite secondary and general manner. To understand this difference, it is necessary to understand how equity options are actually traded in contrast to the way they are theoretically defined.

Equity options are "rights" to buy (calls) or sell (puts) particular stocks or other equity financial instruments at a particular price (the strike price) within a particular time period (expiration date).[4] Whereas the buyer of such options acquires the right to buy or sell the stock in question, the party that sells such rights assumes the "obligation" to deliver or accept the stock in question if the buyer elects to exercise his/her right in accordance with its specified conditions. The Black-Scholes-Merton and other pricing models are theoretical/mathematical models for determining what any particular option is theoretically worth in terms of various factors including its strike price, the present price of the underlying financial instrument, the length of time until its expiration date, present interest rates, and, perhaps most importantly, the past volatility of the underlying financial instrument. These models are used to compute the "premium," which is in effect the theoretical price for that particular option.

Such options are commonly presented as means for limiting losses due to unexpected major price moves of the underlying equity, or as means of generating additional income without incurring any major risk. Theoretically, this can be done in a variety of ways. An owner of stocks, by buying a put—usually at a modest price—below the present price of the stock, can guarantee his or her ability to sell the stock at the put strike price within the time period specified. On the other hand, this same person could elect to sell calls above the present price of the stock and earn additional income without major risk because he or she already owned the stock that would have to be delivered if it did exceed the strike price of the call before the option expired. In both cases, the closer the strike price of the option to the present price of the underlying stock, the greater the cost of the option and the more likely that it would be exercised. Both of these cases are commonly referred to as "covered" transactions, though the proper name for the put transaction is a "protected" transaction.[5]

One can also buy and sell options without owning the commensurate stock. This is referred to as buying or selling "naked." There is little financial danger in buying calls or puts naked except for the money spent in buying them; the

economic volumes, all of it quite unconnected to the themes and issues of this chapter. The economic sociological literature by and large does not address equity options; that which does, however, relates to some of the themes raised in this chapter though it tends not to be similarly empirically grounded (see particularly Mackenzie 2006; Mackenzie and Millo 2003). For related economic sociology literature empirically grounded in markets, see Stark (2009), Beunza and Stark (2003), Knorr Cetina (2003, 2007), Knorr Cetina and Bruegger (2000, 2002), Smith (2007*a*, 2007*b*), and Zaloom (2006).

[4] All financial options function in basically this manner, differing only in the types of financial instruments to which they are linked.

[5] The difference in terminology is because the term "covered" is properly used to designate a situation where one possesses the underlying stock necessary to cover an obligation to buy or sell, whereas in the put situation there is no obligation to sell the stock at the strike price. One rather has purchased the "protective" right to do so if the stock declines.

profit possibilities are, in contrast, quite high, though less likely, if the underlying stock has a significant move in the right direction before the option expires. A call costing $1, with a strike price of $105 for a stock presently trading at $100, for example, would increase ten times in value if the stock went to $115. The situation would be the same if one elected to buy a put similarly below the present market price and the stock went down in a similar manner. Not surprisingly, as noted earlier, the probabilities of losing one's initial investment in such situations tend to be higher than making a substantial profit. One would lose one's entire "investment" not only if the stock went in the opposite direction but also if it stayed pretty much the same or moved only slightly in the desired direction.

One can also sell puts and calls naked. In these situations, one automatically receives the present premiums that constitute the option price sold.[6] Doing so can be very dangerous, however, since the seller becomes liable beyond the strike price of the options sold if there is any movement of the underlying equity before the option's expiration date. If, for example, one elected to sell either the call or the put in the cases above and the stock then went against the seller by 25 points—up in the call case or down in the put case—the seller would lose $20 for every $1 taken out. A substantial amount of collateral is therefore required in order to make such "naked" sales. An important added factor if this occurs is that the amount of collateral required increases if the underlying stock moves against the seller.

While a substantial number of option contracts are bought and sold individually as in the various examples just noted, such transactions make up only a percentage of options traded.[7] A high percentage of option contracts—nearly all informed estimates being in excess of 50%—are bought and sold as part of a variety of "linked" option strategies, in which different option contracts are traded in combination with other contracts. For all practical purposes, the various contracts that constitute such strategies tend to be "naked," though by the very nature of these strategies different contracts offset/hedge the risks entailed in other contracts. A number of the more common such strategies have names including "spreads," "straddles," and "butterflies," each of which can take a number of different forms, including what are often referred to as "legged" transactions that entail different expiration dates. If these do not serve to indicate how complex such strategies can become, it should be noted that there are other even more exotic strategies that often combine these strategies in a variety of ways. (Complex option strategies can also be used in setting up various arbitrage strategies, which function quite differently than

[6] Since in the examples given, the strike prices are not in-the-money, the price of the options is pure premium. The phrases "in-the-money" and "out-of-the-money" refer to whether the strike price has or does not have any inherent value at the moment based on the price of the underlying financial instrument.

[7] Unfortunately, there is no hard data on what this percentage is since it is not possible to document the various "links" among all transactions. Knowledgeable estimates range from 30 to 80%; the most knowledgeable fall between 50 and 60%.

what has been referred to as managing a position strategy. This difference will be described in greater detail later.)

What further complicates matters is that the various option contracts that make up these multi-part strategies can not only have different expiration dates but can also be initiated at different times. New strategies are added and old strategies are closed down or allowed to expire. As a consequence of this, traders do not manage particular strategies per se but rather ongoing "positions" made up of a variety of interlinked contracts "opened" (begun) at different times with different expiration dates. The equity option market is itself in large measure constituted by the ongoing management of such "positions," which include not only monitoring various combinations of linked transactions but also continuing the buying and selling of contracts. Given that these new transactions, like most transactions entailed by the various option strategies, are entered into by means of "limit" orders, even the acts of buying and selling need to be monitored while being executed.[8] These demands are such that it becomes practically impossible in these situations to properly price specific options and as a consequence this is seldom done. Since the individual price of any given option within this ongoing process is unimportant in contrast to the net cost or price difference of the encompassing strategy, this does not cause a problem. Even the net cost of a particular strategy is likely to be secondary to an even more encompassing overall market position. As such, even the net cost—within reason—of a particular strategy may not be as significant as the need/desire to put it into place to protect a larger overall market position.

To further complicate matters, one's overall market position is subject to other factors such as one's margin position, buying power, tax situation, and other things, all of which are influenced by changes in price of the underlying equities of the options. Faced with all of these constantly changing and linked factors, it is not only difficult to price individual option contracts at any given moment but also unreasonable. The relationship between pricing and initiating the various linked transactions that constitute managing a complex auction position is the reverse of that common to most auction markets; transactions govern individual pricing rather than vice versa. As such, these transactions also speak to another deeper issue, namely the difference between knowing and doing and the privileging of one over the other.

To see meanings as emerging from practices rather than guiding these practices requires rethinking the normal ways we see meanings and practices as related.[9] It also requires us to rethink what we normally understand to be the function of meanings, particularly prices. In the process of wrestling with

[8] Unlike a market order, which accepts whatever the market bid or ask is at the moment, a limit order sets a limit, usually somewhere in between the bid and ask offer, on what price it will accept.

[9] The sociological literature bearing on the relationship between "meanings" and "practices" encompasses numerous works in the sociology of knowledge, social constructivism, pragmatism, ethnomethodology, and critical realism, to name just a few perspectives that address some of the issues raised in this chapter, too numerous to be noted in a chapter such as this, let alone discussed. As a consequence, the citations made in what follows are at best highly selective and limited to a few that

these issues, I was drawn back to a response I received from a highly respected, very knowledgeable stock market trader many years earlier to one of my opening questions: "How do market professionals make sense out of the market?" With a mischievous smile, he responded, "Every professional on Wall Street can give you a great explanation of why the market did what it did yesterday, but none of them can tell you what it is going to do tomorrow." In essence, he was saying that one's ability to cope with the market was not dependent upon one's ability to "make sense *of* the market." It depended upon one's ability to "act sensibly *in* the market." This distinction between "making sense of something" and "acting sensibly in particular situations" has its own lengthy history, grounded as it is in the very old philosophical conundrum of the deep disconnections between meaningful accounts of particular realities, how these realities are experienced, and how these realities can be managed.

12.3 **Acting Sensibly versus Making Sense**

The inherent tensions between explanatory accounts and experienced reality can be traced back to the pre-Socratic philosophers, particularly Parmenides, Zeno, and Heraclitus. This tension is linked to a number of classical philosophic disputes bearing on the relative importance of universals versus particulars, reasoning versus sensations, stability versus change, and ideations versus materialism, to mention just a few, all of which overlap each other in various ways. In the context of option markets and auction markets in general, these factors tend to manifest themselves primarily around the consequences and significances of uncertainties and contingencies, a matter succinctly caught in Kierkegaard's often quoted line that echoes what the trader told me: "Life can only be understood backwards, but it must be lived forwards." Or perhaps even more pointedly, given the underlying intention of the trader quoted, by the nastier saying, "Those who can, do; those who can't, teach"; or, to stay with the trader, "advise and make recommendations."

Markets are, of course, not the only situation in which we confront contingencies and uncertainties.[10] We confront them pretty much everywhere. In doing so, we rely on a variety of means for coping with them. "Making sense," which commonly takes the form of finding, creating, and imposing some sort

have shaped this discussion in one way or another. Three particular works and their authors, however, clearly deserve to be minimally noted here: Mead (1934), Garfinkel (1967), and Bhaskar (1979).

[10] In using the words "uncertainties" and "contingencies," I am here underscoring the extent to which my market trader understood equity markets as being subject to "uncertainty" rather than statistically predictable "risk" (Knight 1921). In this respect, he clearly reflected the dominant view of financial market traders in contrast to that of the majority of mathematical economists associated with option valuations. It is also the view that governs the "acting sensibly" modality that is central to this chapter.

of ordering narrative account on events initially experienced as chaotic, is probably the most common way of doing this. Another fairly general method is to engage in one or another familiar "routine or performance." While "making sense" entails imposing some sort of cognitive order, "routines and performances" entail imposing some sort of behavioral order; habits commonly fulfill this task. "Acting sensibly," in contrast, is a less widely utilized method and does not seek to impose an overall order; it is rather a method for handling the disorder. Though used with different frequency, all three methods work in different situations where different objectives are desired. The "where, when, and by whom," however, varies considerably. Such is clearly the case when we examine financial markets.

Successful registered representatives such as brokers, financial advisers, and financial commentators not only make their living by being able to "make sense" of the market to their respective constituencies but are also expected to do so (Smith 1981, 1999). Most individual lay investors, in contrast, do best by adopting a limited number of traditional investment routines and performances, investing a set amount of money in a set distribution of types of investments at regular intervals and then regularly recalibrating. They tend to do better not trying to "master" the market but rather by sticking to well-worn paths (Smith 1981, 1999). It is only a relatively few active traders who successfully utilize "acting sensibly" as a central coping method. And even these few tend to utilize this method primarily in the most fluid, contingency-prone markets, such as the equity option market. Given that it is with this market that we are primarily concerned, it is on this method that we intend to focus. So what goes into acting sensibly that it enables a practitioner to cope with contingencies?[11]

12.3.1 COPING WITH CONTINGENCIES BY ACTING SENSIBLY

The major difference between "acting sensibly" and the other two major strategies for coping with contingencies, "making sense" and "routines and performances," is that acting sensibly accepts contingencies as ontologically real. The "disorder" and unpredictable outcomes are not seen to be due merely to ignorance of one sort or another. Such disorder is seen rather to be rooted in ontologically grounded conflict of one form or another; the coming into contact with each other—becoming contingent—of different systems for example. The problem is not simply an instance of not "understanding" what is happening that can be covered up/denied by imposing a post hoc account on it or ignoring it through "staying the course." Real contingencies, in the form of disjointed events, require us to actually confront and manage

[11] While the "acting sensibly" modality plays a secondary role in most financial markets, as it does in most relatively stable situations, it is and has been favored by some, who are generally referred to simply as "traders" (Smith 1981, 1999). They are, in a very real sense, the poets of the market and like most poets, to quote James Dickey, they are those who "stand outside in the rain hoping to be struck by lightning."

them. Most of us do not do this very well. Fortunately, we are not normally confronted with these situations and when we are, we can generally distance ourselves from them.

There are some people, however, who for one reason or another—generally because of the nature of their jobs—confront such situations regularly. For these people, learning how to act sensibly is a matter of survival. Market traders are a prime example, as are certain types of surgeons, litigators, and kayakers, to name a few other examples that I have spent some time studying; they tend to function in one way or another on the edge (Smith 2005). Relatively little in the way of a general overview of what goes into such behavior has been presented for reasons that hopefully will become clearer. In essence, however, this absence is due to the fact that there are few if any obvious tangible commonalities in the ways that "acting sensibly" is utilized in different situations. Having been wrestling with this problem for some time, however, let me try to suggest a few.[12]

12.3.2 THE FIVE BASIC ELEMENTS IN ACTING SENSIBLY

Let me start by simply listing and giving a brief summary of each of what I would suggest are the five basic elements that go into acting sensibly. After doing that and before going into much detail regarding each, I will attempt to describe in more detail some of the conditions and elements that apply in equity option markets. This should better enable us to see how these various strategic steps are applied in these particular markets.

1. Identifying and Prioritizing Objectives

The key point here is to recognize that in acting sensibly there is no single objective. The constant changing conditions that generally apply require one to hold simultaneously a number of different objectives, which need to be continually reprioritized.

2. Monitoring Manifest and Potential Markers

In acting sensibly, the major difficulty is not simply that there are numerous markers that must be monitored but that these markers come and go. The crucial task here is not to become fixated on any given set of markers at any given time, since new markers of importance are apt to appear suddenly while others are likely to disappear.

3. Identifying and Juggling Rules of Thumb

The need to identify and juggle a range of "rules of thumb" underscores the fact that in acting sensibly one needs continually to make modest adjustments,

[12] The various steps of acting sensibly that I want to suggest grow out of qualitative ethnographic research projects of different "acting sensibly" activities over the past decade or so, particularly financial option markets and to lesser degrees online/search engine markets, high-risk surgeons and litigators, and kayaking.

with the emphasis on "modest." Grand strategies seldom, if ever, work. It is necessary to match appropriate practical minimalist actions to particular situations.

4. Adjusting and Correcting One's Course

The need to adjust and correct one's course is linked to identifying and juggling rules of thumb. The emphasis here, however, is upon recognizing the ways and extent to which previous actions or lack of actions need to be addressed to successfully attain one's present objective(s).

5. Maintaining an Escape Route

The principle of "Maintaining an Escape Route" completes the circle back to "Identifying and Prioritizing Objectives," since a viable escape route is always an alternative objective. The underlying assumption here is that when all else is said and done, survival remains the objective of last resort. What might constitute a viable escape route at one moment, however, may not constitute a viable escape route later. As such, monitoring and maintaining a viable escape route commonly also entails identifying and locating new escape routes as conditions change, much as is the case in identifying and monitoring markers. Most importantly, however, electing to utilize an escape route represents a clean break from "Adjusting and Correcting One's Course." It requires that one abandon ship.

It is time to see how these elements play out in equity option markets, particularly how they affect pricing. Before doing this, however, it is necessary to return briefly to the different dynamics of the arbitrage strategies noted earlier and the dynamics of what has been labeled "managing one's position," which is our present focus. This difference is of particular importance since it highlights the crucial differences between pricing built on making-sense foundations and pricing built on acting-sensibly foundations.

While both of these strategies entail complex and generally serial purchases and sales of mixtures of call and put contracts, they differ in the types of signposts and markers that guide these transactions. Arbitrage strategies are generally tied to discrepancies in market prices and theoretical prices generated by pricing models (Natenberg 1994). These discrepancies are such that they are only observable when portrayed in electronic graph and chart form. In this respect, these strategies are like managing position strategies, in that they are also sensitive primarily to differences between and among prices rather than individual prices per se. These differences, however, as just noted, are linked to theoretical values/prices, which are generated by governing narratives and accounts that claim to provide a theoretical basis for making sense of these prices. These strategies, in short, are inherently "chartist" strategies.

Chartist strategies are clearly not new to financial markets. If anything, they have tended to be the dominant strategies proposed by the "how to become rich in the market" books and services offered to the public. There is a twist to these particular chartist strategies within option markets. First, unlike the chartist strategies in other financial markets that are normally dismissed and snubbed by market professionals, these arbitrage strategies are pretty much limited to floor traders and market makers in option markets for the simple reason that the discrepancies tend to be small and short term, making it practically impossible for others to profit from them. There is another deeper problem that is difficult to resolve that speaks to these strategies, namely whether the success of some market makers employing these strategies is due to the discrepancies between the actual and theoretical values of particular contracts or merely the gap in the bid and ask prices of the contracts to which market makers have access. Given my skepticism as to the utility of any form of making-sense coping mechanisms in the highly contingent character of option markets, I am inclined to favor the latter position, though such strategies cannot be ignored. It is the managing of one's position strategies, however, that I would suggest is the best evidence of the dominant successful coping strategies prevalent within equity option markets. It is to these strategies and the five components of acting sensibly as they apply to these strategies, therefore, that we return.

12.3.2.1 Identifying and prioritizing objectives in managing option positions

Ask most people why anyone would invest in any equity instrument, be it an equity option contract, an equity index fund, an individual stock, or pretty much any other type of equity financial instrument, and you are likely to be told that the reason is "to make money." If only it were that simple. Making money may well be an objective of most people invested in equity markets of one sort or another, but is rarely the primary reason that they became invested initially, nor is it usually why they are invested at any given moment. They are invested in financial markets because they had and have money and they needed and need a place to put it. There are of course banks, bonds, mattresses, and other places where they could put their money, and they often do, but equity markets are the places where most people are inclined to put at least some of their surplus funds.

Naturally, there are other reasons to put funds into these markets, such as excitement at being part of the market, sharing experiences with other investors, self-image, etc. (Smith 1981, 1999). First and foremost, however, one needs to have some funds. Even then, and ignoring the other reasons that might have played a role in directing funds into equity markets rather than under the mattress or toward government bonds, the stated objective of "making" money grossly oversimplifies what normally becomes a much

more complex and changing objective, which tends to mirror the overall feel and flow of the market. In bullish/up markets, objectives are often simply to make money; in less bullish conditions, however, one is likely to be satisfied with making a little money and in a bearish market not to lose any money or perhaps too much money. In a crash, one might be quite happy simply not to be wiped out.

Just as important as the fact that objectives will change is the fact that such changes are likely to circle back on each other as the overall market and one's own position change. As such, the task is seldom to pick one objective but to continually evaluate and rank a multitude of objectives. In doing this, it is not so much what one would like to choose, but what choices are possible and reasonable. The decision, especially when dealing with option contracts, is not simply, "Do I want to become more aggressive or more defensive," but "How can and how should I do this?" It is not, as when dealing with stocks, the simple question of whether to buy or sell, though even then one must decide what to buy and what to sell and how much of each. When dealing with options, the choices are much more numerous and varied, as indicated earlier.

For example, one might want to "protect" a particular strategy by building underneath it another strategy. Let us assume, for instance, that one has earlier set up a SPY 10-by-20, 5-point put spread starting 5 points below a market price at that moment of 105 that had 11 weeks to run before expiring, for a net credit of $350.[13] Next, let us assume that with two days left before expiration of these contracts, the SPY has dropped 8 points, which is 2 points above our trader's bull's-eye—the price where he or she would make the most money possible from this particular spread ($5,350—the $350 taken out to begin with, plus the $5,000 on the 5-point spread). If the SPY closed at this price, the trader's profit would be $3,350—the $350, plus $3,000 on the 3-point spread. At that particular moment, however, his strategy is likely to be worth considerably less, perhaps as little as $600. The reason for this is that the premium of his in-the-money 100 put would have shrunk to very little, while the premium of his out-of-the-money 95 put would still be fairly high. While our trader would no doubt want to maintain his position in the hope of getting the full benefits of his present position, he knows that he is quite vulnerable to a significant loss if the SPY continues to decline. He might decide to convert this spread into a quasi butterfly strategy by building another 10-by-20, 5-point put spread underneath his present position.

[13] SPY is the symbol for the main S&P index fund. A 10-by-20, 5-point put spread, five points below the market at 105, would be a strategy in which ten 100 put contracts were purchased that allowed the buyer to sell 1,000 SPY shares at $100, and twenty 95 put contracts were sold that obliged the seller to purchase 2,000 SPY shares at $95. Assuming a 2.75 price to buy at 100 and a 1.55 price to sell at 95, this would generate a net credit of $350. If the SPY goes down less than five points before the options expire in 11 weeks, the trader will get to keep this $350. If the SPY goes down between 5 and 15 points, the trader will make between $350 and $5,350, with 15 points down as his bull's-eye of $5,350. Once the SPY goes down over 15 points, however, the trader will begin to give back this $5,350 at the rate of $1,000 for every point the SPY goes down. At 30 points down, he would have lost $9,650.

To do this would probably not cost him much, and it would protect him: he then would not lose any money until the SPY dropped another 6 points. He would still have his bull's-eye at 15 points below where he started, but would now not start losing money until the SPY dropped 26 points, rather than 20. One major problem, however, would be that at 26 points down, he would be losing $2,000 per point rather than $1,000. With one week to go, coupled with the significant drop that has already occurred in this scenario, our trader might want to build this additional put spread. Unfortunately, he might find that he has not got the resources to do so, even though the actual cost of the additional 10-by-20 spread would be minimal, because there is insufficient margin power to cover this new spread that results in part from the additional margin liability generated by the first spread. His choices might be limited to closing the spread he has and forfeiting the opportunity for a significant gain, or risking a major loss by doing nothing. He could also elect to buy back some or all of the puts he was short of and sell other puts at a lower price but with a later expiration date (what is called going "down and away"), for little if any additional costs, but then he would have to maintain this position for a longer length of time. He might also elect to sell some "out-of-the-money calls," namely calls with strike prices above the present price of the underlying stock, in an attempt to offset possible losses that a further decline might entail. Depending upon the size of this particular strategy, he could also elect to do a little bit of each of these additional strategies. In making this decision, our trader will also be influenced by whatever other positions he or she is holding at the moment. The bottom line is that in such situations, our trader is apt to be much more focused on staying afloat and managing the various positions than in attempting to impose some sort of ordering account on the situation. This requires being highly focused on one's condition and environment, which brings us to our second component of acting sensibly.

12.3.2.2 **Identifying and monitoring markers in managing option positions**

The key difficulty with monitoring markers when acting sensibly is, as noted earlier, that a given marker, no matter how important it might become, is not always there. When one is acting sensibly, markers have a tendency to come and go. In equity option markets, traders are normally permanently aware of things like the established highs and lows of both the market and the individual stocks that they are following, as well as recent trading ranges. The markers that come and go, however, tend to be the most important element: changes in volatility, narrowing and widening of differences between bid and ask prices for a given instrument, changes in differences between theoretical and actual prices, differences in premiums between puts and calls, differences in trading volume levels, changes in various sentiment indicators, and overall "noise" level.

In asserting that these markers both come and go, I do not mean to imply that they actually disappear but rather that their presence is not noted given their low profile under most conditions. Much the same can be said for the ways in which the flow of news, or more accurately the way the market responds to such news, is treated.[14] Even the most significant market markers over time are likely at any given moment to remain sufficiently dormant as not to be noticed. A further complication is that some key markers take the form of "the" expected not happening: these markers make their mark by continuing to remain dormant when one would expect them to materialize. The "dog that didn't bark" evidence made famous by Sherlock Holmes is an example of this. The absence of any increase in the trading volume or volatility of a stock or even market sector after experiencing an unexpected earnings jump or decline would be a market example.

Equally, if not more significant than the comparatively quiescent nature of many markers, is the fact that in acting sensibly it is crucial that one not over-fixate on such a marker in the expectation that it will become more salient. Succumbing to such temptations can serve to make one miss the emergence of some other marker. The line "I may not know what I am looking for—or even better, what will catch my attention—but I'll recognize it when I see it," aptly describes the proper orientation when it comes to monitoring markers, and successful traders try hard not to allow themselves or others to disrupt this studied and disciplined form of inattentive attention. In their case, the line might be expanded to include "…and don't try to tell me what it is."

When a marker appears, it still needs to be interpreted within the existing context. The very emergence of most markers, given that most tend to be dormant most of the time, normally indicates a change of some sort; in themselves, however, they seldom indicate the nature of the change. For a marker to be useful, it not only needs to be recognized, it needs to be properly interpreted. Ideally, it should indicate something about a probable or possible near-term market change of some sort. Unfortunately, grasping what type of change is often difficult. This is true even for private, personal markers, such as one's own intense emotional response, which are important markers for acting sensibly in all circumstances with which I am familiar. A sudden adrenaline rush or an increase in one's irritability nearly always means something significant is happening, but it does not really indicate precisely what this is in any particular situation. If all does become "clear," and one has a sense of the type of action that should be taken, there is still the question of exactly what, if anything, to do, which brings us to our third component.

[14] News by itself, such as analysts' reports and recommendations, does not in and of itself constitute a "market marker" as the term is being used here. Traders cannot avoid giving such items attention, especially when media hype is involved. It is primarily the response or lack of response of the market that could act as a significant market marker for the trader, rather than the news itself.

12.3.2.3 Juggling rules of thumb in managing option positions

As with "objectives" and "markers," when it comes to "rules of thumb" there is always more than one rule that deserves attention, and these are often contradictory to each other in one or more respects, which explains the need to juggle. As in managing "objectives" and "markers," this juggling normally also requires resources of varying sorts; proper timing is also generally important. As implied above, the decision to apply this rule or that rule occurs within a specific context and in response to particular markers being monitored, which requires continuous monitoring; it is also necessary to give special attention to whatever feedback signals arise in response to what one has done or is doing. This often requires one to reverse or minimally change gears, if not direction. Throughout all of this, it is usually also important to keep one's interventions as simple as possible: do not overreact, do not oversteer, do not drop the reins, and do not panic or celebrate.

When it comes to specific market-oriented rules, different players have different proclivities. A representative list of some of the more popular rules, however, would include the following: when buying or selling, particularly in combination, limit oneself to small spreads between bid and ask prices; when uncertain about taking any action, consider doing half of what was contemplated; when in serious doubt, get out; never fall in love with any position; try to sell naked puts in down markets and calls in up markets; be patient; be disciplined; establish reasonable "stops," both up and down, where you need to take some action; be prepared to go "down and away" with your puts and, with care, "up and away" with your calls; be prepared to take a short loss. There are many more, and each can take various forms. The central point here, however, is not so much in the details of what each rule requires but rather that each rule is quite limited in what it requires. There are no grand strategies built into these rules individually or collectively. There is, however, a governing rule of sorts, which brings us to the fourth component of acting sensibly.

12.3.2.4 Adjusting and correcting course in managing option positions

The need to correct course in order to avoid veering into dangerous territory occurs in many situations and sounds like a fairly easy thing to do, at least when compared to generating a completely new course. Unfortunately, this is not always or even usually the case, since we are commonly disinclined to make small adjustments. We generally prefer either continuing in the same direction—what is sometimes called "holding one's course"—hoping that somehow we will return to less dangerous territory; turning around; or stopping where we are. Another quite common response is to convince ourselves that we never intended to follow "that" course in the first place. This response commonly entails attempting to locate ourselves in a quite

different place than we actually are, often in terms of a representational model of some sort. It is similar to trying to find a location on a map that seems to correspond to where one thinks, or would like, one to be, in contrast to seriously exploring one's present location and adjusting one's course from there. It is this latter type of adjustment of correction that goes into acting sensibly, not the former.

In the market, this means examining and evaluating the positions one actually holds, not the market in general or positions one might have held if one had previously done something different. It requires one to determine what to hold, sell, and buy, generally in combination with one another; it also requires examining and evaluating one's available resources. It means focusing on what is actually happening, not what could happen, not what might happen, and not what one would like to happen. It is not an easy thing to do. It usually means accepting some losses that one had not initially expected, with little positive in return. It is primarily a process of limiting more costly later losses of one sort or another. With "corrective" actions, less is nearly always better than more. It is important to avoid jumping out of a frying pan only to land in the fire.

Most of the actual actions taken belong to the choices described in the "Juggling Rules of Thumb" section in response to the "markers" of one sort or another noted in the "Identifying and Monitoring Markers" section: reducing one's position; building upon an existing spread or other type of strategy; buying back part of a strategy and selling an "equivalent" part "up and away" or "down and away," depending on the situation; "taking in" equity or buying equity to offset a position; etc. There is also a very real sense in which any adjustment or change in course also entails reprioritizing one's objectives. In the more dire situations, the objective that is apt to be most prioritized is simple survival. In order to insure survival, however, more is often required than correcting course. There are times when it becomes necessary to close down or exit a position, which brings us to the fifth component in acting sensibly.

12.3.2.5 **Maintaining an escape route in managing option positions**

In acting sensibly, maintaining and monitoring an escape route functions as the "prime directive." Survival is what acting sensibly is all about. As such it is not surprising to realize that escape has in many ways already been built into the first four components. While generally not an explicit "objective," for example, it is always an implicit, fallback objective when objectives are being identified and monitored. Similarly, in monitoring markers, there is often what might be called a catastrophe warning tag. The tag signals major potential danger that may demand an escape route. Markers with this tag take priority over all other markers. Much the same situation holds true when it comes to juggling rules of thumb, in which rules that demand at least a

change of some sort, if not an outright escape move, nearly always take priority when activated. Finally, escape also functions as the ultimate course correction insofar as it entails abandoning the present course entirely.

There is a somewhat ironic twist to all of this, however, in that as latently omnipresent as such escape routes might be, they can become lost among other objectives, markers, rules, and corrections. Escape exits and routes seldom come in bright red lights as do the exit signs in theaters, or with blinking lights as do the exit paths in commercial aircraft. There is similarly no map that designates "escape routes," for the simple reason that in situations such as option markets, where acting sensibly tends to be the coping process of preference, viable escape routes and exits tend to change continually. As a consequence, attempts to preselect an escape route are likely to be counterproductive.

In a highly ordered system where making sense is generally the coping strategy of preference, emergency exit signs can generally be usefully posted, but not in the twisting, rushing currents of situations like those that are characteristic of equity option markets. As a consequence, "maintaining an escape route" in these situations is more a matter of attention and intention than locating a place. What distinguishes such escape routes from "course corrections" is that escape routes are not intended to lead one to a safer course but rather, as indicated above, to remove one from the scene. This is an important distinction that an observer can easily miss. For the actor in question, however, it is a very decisive move. A few examples might help to clarify this difference.

Near the end of the "Adjusting and Correcting Course" section above, a number of commonly used corrective actions were noted. Where all of these actions differ from "exit" actions is that they serve to maintain the basic underlying position. An exit action, in contrast, closes down or minimally "locks down" the underlying position. Buying—rather than selling—puts below or calls above to cover an existing "short" position would be an example of such an exit. Such action nearly always entails putting additional sums into a position to limit further losses. This can also be done sometimes by buying the underlying equity/stock. For litigators, this distinction takes the form of deciding to end an interrogation that has taken an unexpected and dangerous turn as quickly as possible, rather than redirecting it back in the direction preferred. For surgeons, an exit of this type often takes the form of electing to close the patient up when confronted by an unresectable growth rather than attempting to make minor "repairs."

What all of these situations have in common is that in all cases, the actions taken are a direct response to a perceived danger whose cost cannot be absorbed. It is not the danger per se that is the issue; in most situations where acting sensibly is the preferred strategy, there is nearly always risk of significant loss of some sort involved. It is that in these cases, the danger is seen to be too damaging to be borne. When acting sensibly, risk of sustainable loss is one thing; terminal loss, be it of life, money, or anything else, is another

thing. This difference speaks directly to a deeper difference mentioned earlier, namely the difference between treating discontinuities and contingencies as ontological and thus inherent in reality, rather than as merely epistemological or cognitive limitations or failures in our understanding of this reality. Acting sensibly assumes the former view. Loss is real, not merely a theoretical probability. The monetary value of most options represents only a small fraction of the value of the underlying financial instruments to which the options are tied. As such, a significant but not enormous or mind-boggling increase or decrease in the price of such underlying instruments in a period of a few weeks—let us specify a 30% move—might easily generate losses that would completely wipe out a relatively conservative option position if not managed judiciously. These are terminal losses, as the 2008 financial collapse has shown. As this financial collapse reveals, clearly not everyone involved with options was acting sensibly. The great majority of those who got most hurt were those who thought that they could manage options by making sense of them. Those who survived by and large fell into two groups: those who pretty much avoided options and derivatives and remained loyal to a number of making-sense strategies, and those who traded options and derivatives throughout but did so by holding true to their individual acting-sensibly approach, grounded in their recognition of the inherently contingent nature of the market.

12.4 **Pricing as a Product of Acting Sensibly, Not Theoretical Valuation**

So what might we deduce from these markets about pricing? Financial markets, as noted in the beginning of this chapter, offer exceptionally rich strategic research sites, to use Robert K. Merton's phrase (1987), for examining and reflecting upon "pricing." What makes them even more special is that financial markets commonly evolve and change over time, including the emergence of qualitatively new markets such as the equity option market in the 1970s, providing us data bearing on ways in which these pricing practices change (MacKenzie and Millo 2003; Smith 2007*b*). In the 1970s, stock market pricing and evaluations were subject primarily to the governing narratives and framings that dominated at that time: Fundamentalists, Insiders, Chartists, and Traders (Smith 1981). The proponents of each orientation had their own ways of making sense and imposing meanings on the market and determining what different stocks were, or should be, worth. Their "making sense" frames also told them what to do and what not to do if they wanted to be financially successful in the market. Though each approach had its own views and rules, each was fundamentally stable and covered pretty much all contingencies that might arise. Over the next few decades, these governing narratives were

subject to some modifications, but their basic "making-sense" orientations remained (Smith 1999). These orientations continue to dominate presently.

While all auction markets are subject to such governing narratives to some degree, these narratives tend to be subject to greater variations and modifications when the items being auctioned are less homogeneous than are financial instruments. If the stock market is about "defining value," the great majority of nonfinancial auctions are about "the construction of value" (Smith 1989: 174–82). The degree to which these narratives are subject to modification tends to be correlated to both the homogeneity of what is being auctioned and the regularity of the auction itself; the more homogeneous the items and the more frequent the auction, the more fixed the governing narrative. What are generally referred to as commodity auctions, which include financial auctions, as a consequence tend to be subject to the most stable and dominant narratives; collectible auctions with their more varied items commonly exhibit more varied and flexible narratives. What are commonly referred to as one-of-a-kind or sale auctions, given the highly idiosyncratic items auctioned and the highly irregular intervals between the times most of these items come to market, in turn, are subject to the most extemporaneous narratives. In collectible and one-of-a-kind auctions, the auction itself became a vehicle for collectively creating the governing narrative for that particular auction and consequential pricing of items (Smith 1989: 165–74).

It is the argument of this chapter that the fluidity, volatility, and contingency of option markets have served to limit, if not eradicate, the relevance of these governing narratives in determining prices further. Rather than directing and guiding transactions, prices in option markets tend to be the products of transactions. The transaction prices of most equity and fixed-income instruments tend to be determined and to reflect a variety of other financial monetary values such as earnings, dividends, cash flow, past prices, interest rates, inflation, etc. As such, these "external" transaction prices are a key element, probably the key element, in making sense of the market, giving it a rational order that can then be used to guide future actions. In contrast, as described in the account of managing an option position, individual prices are not in themselves that important. What is important is one's overall exposure to various degrees of loss under a wide range of possible situations. What is your exposure if the market goes up, down, or sideways, in the short term, long term, etc.? What is important are the likely comparative net outcomes for your market position, that is, your particular market holdings, under these different situations, not the particular price of any specific option contract.

In managing a position, consequently, prices do not govern actions so much as emerge as the footprints left by traders managing their various positions. Even then, prices are not vehicles for quantifying particular qualities or parameters. They tend rather to be means for tying together or "glossing" a range of different factors into a single agreed-upon measure capable of enabling participants at that given moment to freely exchange a particular set of financial rights or obligations. In serving as the means for enabling a free

exchange of some item, such consensual prices are not functioning in an unusual manner. This is how consensual prices function in all markets. To agree upon a price for a particular item does not necessarily or even usually mean that there is agreement as to the inherent value of that item in terms of any particular aspect of the item. All it means is that there is an agreement on a monetary exchange value. This fact is often unnoticed in relatively stable markets, where pricing tends to be subject to dominant "making-sense" narratives that implicitly imply that the shared price reflects a shared view of the item's inherent value. In option markets, in contrast, where narratives play little or no part and contract prices are commonly generated in "acting sensibly" management of a range of different market positions, the extent to which a consensual price reflects little more than a momentary consensus about that specific contract's price is more transparent.

In privileging practices over accounts, option markets speak not only to Zeno's Paradoxes and the Kierkegaard and Trader quotes presented earlier but also to a number of other fundamental theoretical concerns bearing on the relationship of explanatory accounts and what might be called "material reality." I can do little more in this chapter than identify some of the most important, which I do primarily to indicate some of the broader issues to which recent developments within financial markets, particularly the growth of option and derivative markets of varying sorts, speak, especially when these markets are examined from a broad sociologically informed perspective. In doing so, I need to begin with an important disclaimer.

In claiming that "acting sensibly," as embodied in equity auction markets, is an understudied and underappreciated form of coping with contingencies, I in no way mean to minimize the importance of either "making sense" or "routines and performances." Without the Black-Scholes-Merton and other "making-sense" option-pricing models and the range of established financial market practices, the present vibrant equity option markets would not and could not exist. The underlying theme of this chapter is not that acting sensibly should replace making sense and routines and performances in coping with contingencies[15] but rather that it needs to be added to the other two if we are to have any success in coping with the full range of contingencies that we are apt to confront. The factors that make this so have been recognized for centuries, namely, the unavoidable limitations of any account, no matter how sophisticated or elegant, to successfully encompass all of the possible outcomes of any relative complex system over any significant length of time. This point has probably been proven most clearly by Gödel's incompleteness theorems. Equity option markets might be considered special only insofar as they have a particular ability to evidence this fact repeatedly and dramatically.

[15] This chapter itself is clearly part of the "making-sense" genre, even if its subject matter might be "acting sensibly," though in my own defense it is a "making-sense" account that offers no predictive powers.

12.5 Concluding Thoughts

Why even the most sophisticated accounts fail to fully explain the simplest of events is another question. Of the various formulations that have been forwarded to explain this situation, those that accept an "open system" vision of reality have tended to be among the most perceptive, particularly those associated with the Critical Realism discussions of the last few decades (Bhaskar 1979; Manicas 2006). While not ignoring the various forces at work generating equilibriums and stability, the creation of every system or structure can only be expected to exert new disruptive pressures on other systems and structures insofar as all are interconnected through being open to the others. It is specifically when relatively stable, but inherently open systems, previously quite distant from each other, come into more intimate contact and consequently begin to exert greater pressures on each other that these systems become subject to "contingencies." The underlying "causal" forces at work within the previously separate systems begin to impact on the other systems, generating quite different and novel consequences. As a result, what might have been taken as given and permanent within each previous separated system is likely to be subject to unexpected change of some sort or other.

While more academically dominant efforts of generating and imposing predictive, ordering accounts on events often function to resist if not reject such contingencies, they are commonly recognized by those forced to confront them in their day-to-day activities. No place is this more the case than in financial markets in general and option and derivative markets in particular, where the limitations of all grand narratives are understood, if not always publicly acknowledged. This denial is not surprising. If sociology has revealed anything, it is the extent to which "knowledge" in practically all forms is not only social in origin and form but exists to hold social groups together by providing them with a shared, ordered account of their "world." From Durkheim's "collective conscience" (1933) to Giddens's "ontological insecurity" (1984), knowledge's prime role has been to provide us with "meaningful accounts" capable of supporting the inherently social human condition. It has been and continues to be the primary impetus of traditional folkways, religious accounts, and modern science. And "rationality," in admittedly various forms, is the guise to which all would-be accounts seeking to be accepted as "knowledge" aspire.

Here again, there have been many from Heraclitus to Nietzsche who have taken more critical stances or have at least expressed concern. How else to explain Weber's notion of the "iron cage" quality of the ever more "rational" social structures that he at other times appeared to celebrate (DiMaggio and Powell 1983)? Whatever our reservations and concerns might be, however, our need, habit, even passion to see our world as ordered tends to dominate even to the extent of leading us to deny our reoccurring experiences of our world as inherently contingent (Garfinkel 1967). This is a condition that

pervades pretty much everywhere, nowhere more so than in academic disciplines, as indicated above. Academic disciplines have an innate tendency to generate ordered accounts. Academics, like priests, get paid for providing answers, the simpler and more all-encompassing the better. The social sciences, including sociology—whatever its claim as reformer and challenger to the status quo—are fully susceptible to this tendency. Having said that, it is also true that academic disciplines—particularly sociology, with its heritage of approaching knowledge critically—can be a valuable antidote for this tendency, especially when grounded in proper research settings such as financial markets, which provide a rich, varied, and ongoing source of data applicable to numerous issues including that with which this story began, "defining value." Few situations provide us with such fertile research sites for exploring the different and often new, even surprising, ways we seek to cope with different forms of contingencies.

If the account of option markets presented above has merit, for example, there is an ironic twist in what our financial markets might be telling us. In looking back over the past few centuries, the general consensus has been that there has been a continual, if sometimes erratic, growth of rationality and sense-making in the manner in which we experience our world and lives. Nowhere has this growth of rationality been more hailed than in the transformations of our economic lives and markets (Weber 1947, 1958). Options and option markets have been one of the latest actors to take the stage in this unfolding drama, starring as the instruments able to master risk and uncertainty by means of their highly sophisticated, mathematically grounded rationality. In these financial markets, however, these instruments seem to have given rise to a very different type of rationality, the rationality of acting sensibly: a rationality that approaches all governing accounts with deep skepticism; a rationality that assumes contingencies to be the norm. Whether right or wrong, this is clearly a message that deserves our attention both as it applies to financial markets and beyond.

Conversely, few disciplines are as well situated to shed new light on these markets and probe their depths than economic sociology. Unlike prevalent economic thinking that privileges theoretical models and other "making-sense" tools, sociology has a long history of debunking governing accounts and narratives. This is not to deny the emphasis that sociology over the years has placed on normative structures, but the discipline also has other roots, including deep pragmatic roots (Mead 1934) that approach meanings of all sorts with greater appreciation for their instrumental and emotive character. In order to mine the abundant data of evolving and emerging financial markets, however, it is necessary to utilize the full bag of theoretical and methodological tools that social science has to offer. This includes the need to collect ethnographic data as well as the quantitative materials generated by various public and private organizations. It requires generating descriptive accounts in addition to analytical modeling. It also will require messing up our hands, minds, and sensibilities. A contingent world by definition is not a

cognitive or even a physically or ethically neat, ordered place. Markets tend to be fast moving, often dangerous currents, with plenty of rocks and even a few falls, but they can also be stimulating, instructive, and exhilarating.

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