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George Soros: How He Knows What He Knows: Part 4: Using Reflexivity in Trading

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Learn how the theory of "reflexivity," the foundation Soros uses to analyze markets, can be used in your trading.

This is the final installment of a four-part series on George Soros' trading philosophies. This particular one explains the theory of reflexivity, which is the theoretical foundation George Soros uses to analyze markets. John Wiley has just brought out a new edition of *The Alchemy of Finance* that includes Soros' most recent writings on this method.

Simply put, in Soros' theory, the thinking of market participants is part of the reality that market participants think about. Prices are influenced by a continual feedback loop between the participants' thinking and market and economic realities that they observe. Soros called this circular process "reflexivity."

In Part 1 of this series, "The Belief in Fallibility," we explained that Soros sees the market as driven by investment hypotheses that are flawed. He finds profit opportunities where the prevailing bias creates self-reinforcing trends that reverse when the flaw becomes apparent.

When *The Alchemy* was first published in 1987, few people understood it. One reason was that Soros' theory alone does not explain how he finds profit opportunities. His theory explains how trends form and what makes them reverse, but it doesn't give him rules or indicators for catching trends or timing reversals.

In Soros' actual decision-making process, his theory works in combination with his instincts. The need for a portfolio shift makes his back hurt. His recognition of a self-reinforcing trend brings water to his mouth. His body "knows" he needs to take action or take careful note of a situation even if his intellect hasn't yet grasped it.

This is puzzling because theory and instinct are usually considered mutually exclusive. Moreover, Soros himself was unable to explain how he used his instincts. In Part 2, "Combining Theory and Instinct," I explained how Soros finds the flaw before it becomes apparent to the public. I introduced a methodology well known in psychology as "focusing" that with practice can teach you to use your bodily knowledge to manage trading positions.

Part 3, "Empathizing with the Mind of the Market," explained how Soros intuitively detects situations where prevailing biases give rise to self-reinforcing trends. It then explained how focusing can help you to use your bodily reactions as sources of information about what's happening in the market.

Contradicting Received Views

By now, most pros in Wall Street consider themselves "reflexivists" in the sense that they understand the course of markets and economic events by looking at how other participants' views create their own reality. Market participants base their actions on their own expectations, which are based on their views, their models or their theories. Their decisions affect price behavior. The market, in turn, influences the variables that the participants are looking at - both the variables related to price action and the "fundamental" variables. Both shape participants' new expectations.

Reflexivity was not accepted quickly. Soros' use of instinct was one reason. Another reason was that reflexivity contradicts the different ways of looking at markets that most traders use. These conventional approaches fall into three main groups. First is an

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approach derived from modern portfolio theory, which is based on equilibrium economics. This is the basis of the widespread use of indexed funds that make up a high percentage of market volume. The second approach is fundamental analysis. Third is technical analysis. Understanding Soros' critique of each of these methods will help you grasp reflexivity more easily.

The Irrelevance of Equilibrium Economics

Both modern portfolio theory and fundamental analysis are based on traditional economic equilibrium theory. Soros went to great lengths – both in the original *Alchemy* and in his new introduction to the book – to explain why equilibrium theory gives a misleading picture of financial markets. Understanding why this is so important will give you the basis for tackling the original book, which is a hard read.

Equilibrium theory applies to financial markets the same type of thinking used by classical physicists to model physical phenomena such as the behavior of the planets. The theory assumes that financial assets have a fundamental value that is objective. This value is determined by the conditions of supply and demand in the real economy. Just like the orbit of the planets, which is not affected by astronomers' theories, the fundamental value supposedly does not depend on what financial market participants think about it. In equilibrium, market prices are a passive reflection of the underlying fundamental reality. In other words, market valuation mirrors fundamentals without affecting them.

If you could reduce what happens in markets to factors and relationships that are already given and remain the same, it is reasonable to assume that rational market participants would find out the value of these factors. They would then use them to make decisions. Thus, market prices would, indeed, reflect economic fundamentals.

In this case, it is logical to treat fundamentals as being independent of the perceptions. The connection between market prices on the one hand and the companies and economy as a whole on the other can safely be assumed to move in just one direction.

But market reality doesn't work like orbits of planets that stay put regardless of our expectations. Situations involving thinking participants have a different structure. Financial market participants try to discount a future that doesn't yet exist. What the future will turn out to be will depend on how the market discounts it at present. Current perceptions help shape the future. When market participants change their views, they can create a very different future.

Reflexivity introduces an element of uncertainty into the system. The fact that traditional economics assumes this uncertainty "away" is the reason why it fails to help us understand the real world.

Market Efficiency and Indexation

Do economists really believe that equilibrium theory applies to the real world? The answer, surprising as it might seem to anyone who has ever actually traded, is that the majority does. According to advocates of efficient markets theory, market prices are unbiased estimates of fundamental value. A small deviation from rationally expected fundamentals creates a self-correcting movement in another direction.

This is the reasoning behind modern portfolio theory. If prices always reflected fundamentals, it would be impossible to beat the market, so everyone should invest in index funds. According to this view, Soros' superior performance and the performances of many other noted traders and investors like Sir John Templeton, Warren Buffett and Paul Tudor Jones would be attributed to luck.

Financial economists have spent a lot of time, effort and a ton of research money trying to collect evidence supporting the notion of market efficiency. They have tested the profitability of a great number of both fundamental and technical rule-based strategies extensively. For the most part, they have interpreted the results as evidence that the market, indeed, is efficient. However, the failure of rule-based strategies to outperform the market averages does not mean that prices reflect fundamentals, nor that you can only beat the markets by chance. It only means that markets can't be beaten by the methods that they have tested.

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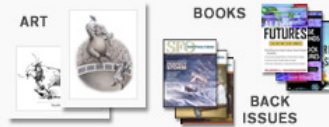
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Soros agrees.

Fundamental Analysis

Fundamental analysis is an outgrowth of equilibrium theory. It assumes that stocks have a true or fundamental value as distinct from their current market price. The market price is supposed to tend toward the fundamental value, not necessarily immediately as efficient markets theory asserts, but over a period of time. The analysis of fundamental values should tell you which stocks are overvalued or undervalued and, thus, provides a guide to investment decisions.

Fundamental analysis assumes the connection between prices and companies to be in one direction. The fortune of the companies determines – sooner or later – the values of their stocks traded in the market. The possibility that stock market developments may affect the fortunes of the companies is left out of the account.

But stock market valuations definitely do influence underlying values directly through the issue and repurchase of shares and options and through corporate transactions like mergers, acquisitions, new stock offerings and the like. Valuations are influenced indirectly by credit ratings, consumer acceptance, credibility of management, etc. Fundamental analysis views the influence of these factors on stock prices, but it doesn't recognize the influence of stock prices on those factors. So fundamental analysis cannot follow the changes in the factors that are caused by price changes, because fundamental analysis only sees the connection one-way; it misses the other way. The conceptual flaw impairs its ability to help you make money. Traditional fundamental analysts missed the opportunity to make money during the bubble, for example.

The same is true for currencies and other financial markets. The connection between market prices and fundamentals is always two-way. Soros doesn't accept that prices are a one-way, passive reflection of underlying values, nor that they eventually regress to the underlying value. Participants' expectations are active factors in a process in which both market prices and non-market economic events are determined.

Technical Analysis

Technical analysis tries to anticipate price fluctuations by studying the dynamics of price movements and patterns of market behaviors. It estimates probabilities by comparing different instances of similar patterns of behavior. Unlike fundamental analysis, it is not encumbered by the shortcomings of economic equilibrium theory.

Trend following is an important element of Soros' strategy. He views upticks and downticks as important predictors of price trends because they provide information about the strength of supply and demand.

However, technical analysis is limited by the fact that financial markets are not closed systems. The market is always in interaction with the much wider economic system and constantly receives input from the outside world. This means that a trader cannot blindly assume that predicting the future can be achieved with a mechanistic reworking of past data, even in the probabilistic sense!

Technical approaches that calculate probabilities on the basis of past experience lose the context in which each particular instance occurs. This is why traders always need to use their bodily sense of the current situation, as previous articles in this series have taught. Bodily knowledge is needed to complement whichever trading system a trader uses.

Trend Formation and Reversal

Soros' method on the one hand involves reading the mind of the market, which is what technical analysis tries to do. On the other hand, it also pays attention to economic relationships, which is what fundamental analysis does. However, his method is not constrained by the shortcomings of either method.

The starting point in Soros' approach is the participants' bias. The participants' bias gives rise to trends, which Soros at first follows. He then looks for the flaw in the prevailing rationale behind the trend. Of course, market participants have different views and base their decisions on different approaches. It must be remembered, however, that for a strong trend to form,

there needs to be some consensus among different groups of participants – for instance between fundamentally oriented participants and technical trend followers. Finding the flaw in the market's hypothesis puts him ahead of the curve – he still follows the trend, but is on the lookout for what would make it reverse.

In reflexive situations, the market trend at first supports the bias. Bias and trend reinforce one another. But the trend also has unintended consequences, affecting economic relationships which the conventional view is not taking into account. Again, market action takes place within an intricate web of interlocking economic processes, not within a vacuum. Any market hypothesis is based only on a "cut" or a piece of a multi-layered web that is continuously developing.

At this underlying level, the market's action is creating an effect that eventually makes the trend unsustainable.

Boom and Bust

Boom-and-bust sequences are the most dramatic examples of reflexivity at work. Soros' archetypal boom/bust sequence has seven stages:

1. The prevailing bias is present, but a trend is not yet recognized.
2. The period of acceleration, when the trend is recognized and reinforced by the prevailing bias.
3. The period of testing. Prices suffer a setback. If the bias and the trend hold, prices emerge stronger than before and become more exaggerated.
4. The "moment of truth" when reality can no longer sustain these exaggerated price expectations.
5. The twilight period. People continue to play the game, but they no longer believe in it. They hope to be bailed out by greater fools.
6. The crossover point at which the trend turns down. Even the last fools give up hope.
7. The rapid, catastrophic price acceleration in the opposite direction, in short, a crash.

In the Internet boom, this sequence started almost unnoticed when a few e-commerce companies went public. Their stocks were highly valued by the public, and the popularity of the stocks helped to promote the companies. The prevailing bias and the prevailing trend reinforced each other, which accelerated the boom.

As Internet services spread, online trading increased exponentially. Valuations reached outlandish levels. Few companies were really profitable, but investors didn't care. They counted only the number of customers or subscribers as the basis for valuing these stocks. And then companies began to give away services because by increasing their customer base, they could raise capital on more advantageous terms. Raising capital, rather than making profit, became the game.

The trend was tested in July 1999 when the Wall Street Journal exposed this game. At the same time, the holding periods for many of these IPOs expired, so investors unloaded their shares. Internet stocks fell by more than 50 percent, but many recovered, and some rose to new highs. Expectations again were inflated until the Internet bubble burst in March 2000. E-commerce companies could no longer finance their growth by selling stock at ever-higher prices. The market's attention then turned to other tech sectors like telecoms until they, too, finally crashed.

The General Case

Reflexivity is not the exception, but the rule. It's at work not only in extreme cases of bubbles, but all the time. Reflexivists look for opportunities in situations where the prevailing bias, via price action, is affecting the variables that enter into the participants' decisions in ways that are not anticipated and in ways that at first are not visible.

They look for situations where everybody is doing the same thing for the same reasons, because there's bound to be a flaw. As Soros pointed out:

"The major insight I gained from the theory of reflexivity and what I now call the human uncertainty

principle is that all human constructs (concepts, business plans, or institutional arrangements) are flawed. The flaws may be revealed only after the construct has come into existence. That is the key to understanding reflexive processes. Recognizing the flaws that are likely to appear when a hypothesis becomes reality puts you ahead of the game."

Let's look at a recent example of reflexive profit opportunities.

Risk-Management Models

In new edition of *The Alchemy*, Soros hints at the existence of reflexive profit opportunities in relationship to risk-management systems – but doesn't tell us more about it. Here's how it works.

Every time a major Wall Street firm blows up, new "improved" risk management theories and algorithms are created to guard against future losses. Because Wall Street is a pretty small community, it's a safe bet that if one major firm employs a program, other firms are running the same program. Because most major firms are always on the same side of a big move, the fact that they have similar risk management systems can be exploited by reflexivists.

Say everyone is long a security that has been trending up gradually with very low volatility. Assume institutions have acquired big positions. Suddenly, an unanticipated event pushes up implied volatility. Risk models suddenly tell these firms at the same time to sell the same security to reduce exposure. They do, and prices fall. The clever reflexivist, who anticipates that these firms' risk models are likely to trigger sales, establishes shorts – and covers when prices do fall for a handsome profit.

Lessons

The basic lesson for trading success is to understand the big picture. Reflexivity gives us critical insight into the path of the big moves, and that can give you more confidence in your trades. Paul Tudor Jones brought this point home in his foreword to *The Alchemy*, "How many times," Jones asked, "have we been correctly long near the bottom or short near the top of a major market move? But our staying power with these positions has been weak (as well as our returns) because of a lack of understanding of the path of big price moves."

Soros is a macro-investor. This, in and of itself, gives him an edge. Most market participants have neither the resources nor the expertise across many product lines, industries or markets that Soros has.

However, you don't have to be a macro-investor or a fundamentally orientated trader to use reflexivity to improve your trading. For that, you need not only to watch the market, but also the thinking of market participants who are doing something to the market.

You can gain an edge if you can identify the major players that are moving prices now (in the markets you trade), and if you can learn that on which they are basing their decisions. Look for situations where everybody is doing the same thing for the same reason. Then, look for the flaw in this reasoning.

It would be wonderful if there were some hard and fast rule for determining situations in which everyone indeed was doing the same thing for the same reason, but there really isn't. You have to be intimate with the market, and then you can sometimes tell by both looking at price and volume data as well as at the news where the liquidity is emanating.

For example, a fund manager that closely follows a stock often knows whether prices are going up on news or simply because day traders have moved them to the point where hedge funds have to cover their shorts. And, in some markets it's easier than in others. Perhaps it's a bit easier in commodities where, on the one hand, you have the participants that need to hedge, and on the other hand, technical traders that tend to be trend-followers. It's occasionally possible in bonds markets, too. A reflexivist knows that Fannie Mae and Freddie Mac have to sell bonds because they have a duration problem, and so the reflexivist will short bonds, too. In currency markets, central banks are major players, and so on.

Another possible way to find situations where everybody is doing the same thing for the same reason is to look

for consensus in the media. People watch the same news – that is, their ideas of why this and that are happening and are likely to continue tends to be the same. There are times when this is particularly strong. For instance, sometimes a stock is strongly recommended by a number of analysts. This then will create demand that will, in turn, be reinforced by trend-followers, and so on.

When everybody sees only the upside, look for the downside. When everybody sees the only the downside, look for the upside. Ask yourself what is it that the average opinion is not taking into account and what news would make the average market participant change his mind.

No matter how well you understand its theoretical principles, reflexivity won't help you until you know how to work with your bodily sense and can access the knowledge it contains. Reflexivity is all about recognizing changes in the rules of the game, and there's no formula for capturing that.

Market opportunities are context-dependent. This means that you have to rely on your bodily sense of the market situation to complement your analysis. The focusing methodology that I presented in the previous articles will help you come to understand how George Soros – who time and time again has told us he uses his instincts – knows what he knows.



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