

Richard Olsen
How to Trade

Introduction

High frequency finance, with the analysis of tick-by-tick market data, offers new insights in how to trade. Before you continue reading, I want to caution you that over 80% of the traders in any one-year lose money. Of the 20% who ended with a profit, many were just lucky and are likely to lose money in the following year. Does this mean that it is impossible to make money in financial markets? No, definitely not – it is feasible to earn money on a consistent basis, but it is difficult.

The reason why you can make money is simple: during the course of one year, the price risk is a lot smaller than the profit opportunity. The price change from say the 1st of January to the 31st of December for a particular exchange rate is 10, 20 or rarely 30 percent. If you sum up all price movements larger than 0.05% during the course of one year and deduct transaction costs, then you could, with perfect foresight, earn 1600% without leverage - that is more than 50 times the risk of 30 percent, so a big opportunity to make money does exist.

Trading is so difficult because **98%** of the volume in liquid markets is speculative; only **2%** is fundamentally driven. The 98%, the speculative volume, is the major force of the market determining the price trajectory – you need to understand the behaviour of the speculative traders to make money.

The impact of speculative trading is harder to decipher than fundamental market forces because speculative positions impact the market twice: first when a trade is opened and then again when the position is closed. This duality makes it difficult to correctly analyze price movements. To make things even more complex, there are different groups of speculators, including short-, medium- and long-term traders, traders based in Europe, the US and Asia, trend-following and counter-trend traders and many more.

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For full disclosure, I need to add another remark of caution. Human traders cannot compete successfully with sophisticated quantitative trading models, which systematically process every tick of market data. Why do I say this? Human traders can be compared to a physics professor in an airplane about to take off: in principle, the professor knows all the principles of aerodynamics that are put to work in the airplane, but he cannot explain and compute all the equations on the fly. Quantitative trading models have a competitive edge; they are based on algorithms that aggregate the knowhow that researchers specialized in a number of disciplines have brought together, and deploy this embedded knowledge in a systematic and consistent manner; quantitative algorithms do not miss a price tick; they do not need to sleep, eat or go on holidays.



To be honest, financial engineering is still in its infancy and is not yet at the stage of other engineering disciplines such as aerodynamics and computers. I reckon that finance today is equivalent to computer technology in 1968 and thus has a long way to go.

Even though we, as human beings, cannot compete with quantitative models, I definitely find it useful for us to learn to trade. Financial markets are a driving force of modern society, and it is important that we understand the dynamics of financial markets. To acquire a thorough knowledge of markets, it is important that we get our hands dirty and learn to trade successfully. It is only through personal experience that we start to really understand how markets function. Some of you will enjoy the thrill of trading; it can be like playing sports or another competitive game. But beware; trading, with all its excitement, can turn into an addiction. Only trade with as much money as you can afford to lose; if you have not mastered the rules of trading, an unexpected price move can wipe out your account.

In this small booklet I discuss how traders need to restrain their natural urge to open large positions. There is an abundance of trading opportunities. So for any one trading idea, it is better to reserve a limited amount of capital and to have a contingency reserve in case that the trading idea was premature.

I also discuss apparently irrational market movements that turn fundamentals upside down. They occur when an initially small price spike triggers a whole cascade of price moves fuelled by a sequence of margin calls. When market participants have large unrealized losses, any small price spike can trigger margin calls; the position closeouts increase the imbalance of buyers and sellers and fuel a continuation of the price move, which may last for only a few minutes or hours, but can also take days, weeks or even months.

Finally, I will cover a number of different issues from turning a losing position into a profitable trade through active management of the position to implementing stop loss strategy and trade diversification.

This booklet does not include any technical or fundamental analysis. In general, the usefulness of these methods is exaggerated. You might be shocked to read that I do not have a lot of faith in their ability to be good predictors of financial markets. These approaches scratch the surface and can only spuriously explain the market movements – they seem to work precisely because the coastline of price movements is so long. The tools are helpful because they provide a frame of reference and are a means of making your trading decisions more consistent: When you get bruised by big losses or your ego gets ahead of itself, you should stick to your trading strategy when it prints money.



You have time

The most common mistake that a trader makes is to rush into a position too quickly and to be too aggressive in his opening trade. There is no need to rush into a position and make a big trade; you have all the time in the world. I strongly recommend that you temper your natural impulse of trading at a high pace with large positions.

Let me explain why I give this advice. The coastline of the sum of all the up and down movements at a threshold of 0.05% has a length of 1600% for every exchange rate and it is similarly long for other financial instruments. With perfect foresight, it would be possible to earn a whopping 1600% in profits per year after paying for all the transaction costs. If in real life a trader earns 3% by just trading his equity with no leverage, he is successful by any standard; if he earns 6% during the course of a year with no leverage, he literally enters the hall of fame. If you are able to successfully realize 0.375% of the 1600% coastline of profit opportunities, which is 6% on an unleveraged basis, you get into the hall of fame. Hence, there is no need to rush into a position. There is an abundance of profitable trading opportunities; choose your battle ground carefully and only open a trade that you believe in.

The reason that I emphasize that you should choose your battleground carefully and should believe in the motivation of your trade is simple: Financial markets are fractal. They do not move in straight lines; instead, there is a continuous up and down. Whenever there is a price movement in the opposite direction of your trade, you cannot be certain that the trend will reverse. As you sit there and observe the market, you start to second-guess your decision. If you have opened your position hastily, you will soon feel uncomfortable with your trade and will then be inclined to close out your position during such a draw down and then open a trade in the opposite direction. If you do this, your trading will lag behind the market and you will be out of step and just accumulate losses.

Trade in small size

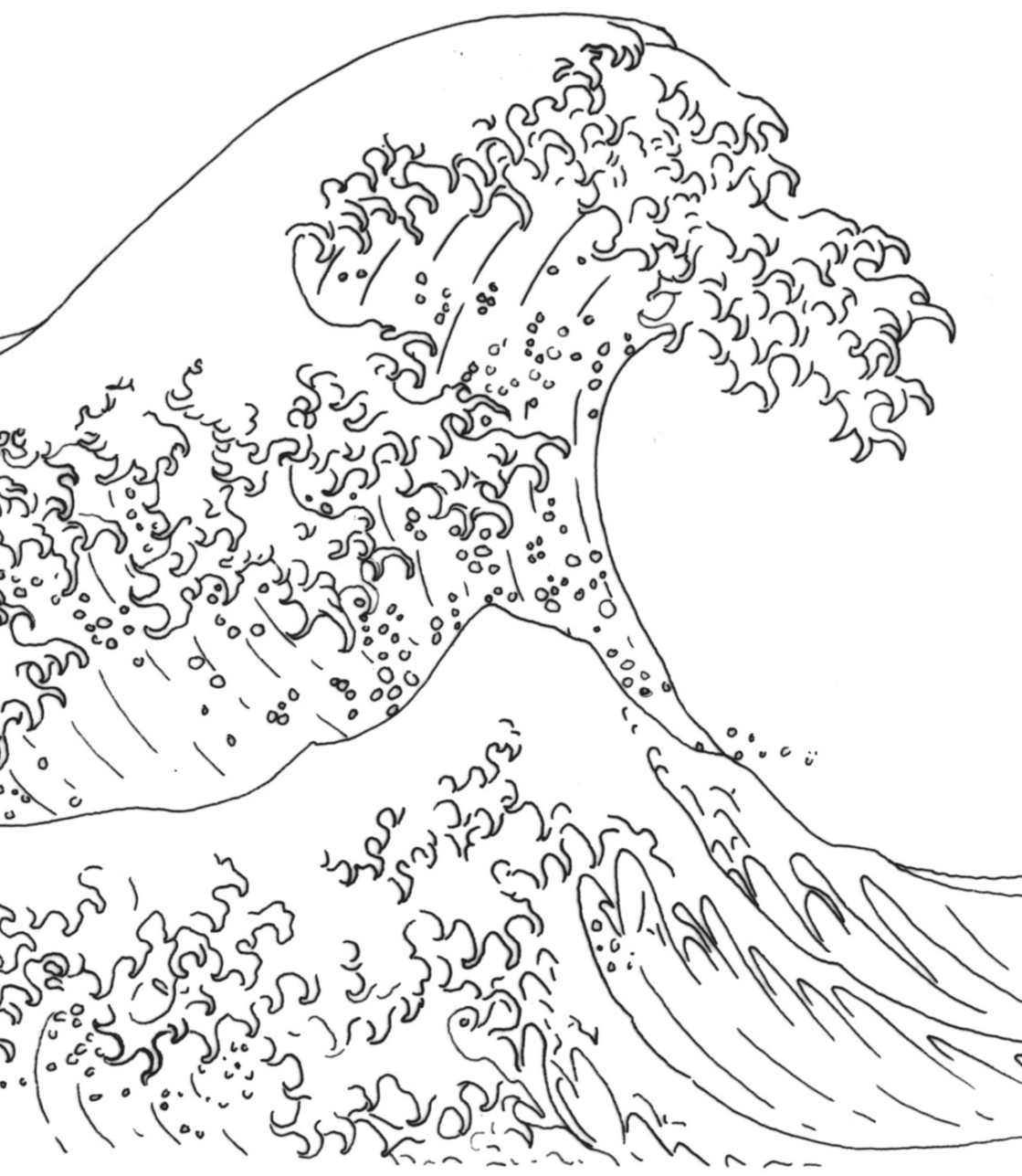
The most common mistake of a trader is to be too aggressive and open positions that are far too large. If the position is too large and the market moves temporarily against your position, you do not have sufficient margin capital to pull your position through and are stopped out. You are then forced to close out your position at the worst possible moment during a temporary down tick.

As human beings, we are inclined to open positions that are too large because we are not very good at forecasting the size of tail events. Just try and remember when you last dropped a glass and had to collect the glass splinters. I am sure that you were surprised at how widely dispersed the glass splinters were.

By analogy, the same is true for market moves. The large market moves are far bigger than we expect. At all times, you need sufficient reserve capital to cushion an unrealized loss from your open positions. I conjecture that the most successful traders excel because they manage to keep exposure very low; they rarely open positions larger than 10 to 20 percent of equity (at peak time, exposure for any one position will rarely be larger than one time equity).

You can trade in small size and still reach your profit target because the coastline of each instrument is so long and there are many different instruments that you can trade in. After all, it is paramount to conserve your capital; if you are stopped out and have lost your capital, you are out of the race.





Beware of unforeseen price cascades

Currency markets have a daily turnover of spot transactions of approximately 1.4 trillion USD; this is a mind-boggling number, equivalent to approximately 10 percent of the annual US GNP. The daily turnover translates into a flow per minute of 1 billion USD, which is still a lot of money. If we go a step further and compute the volume per second, then the turnover collapses to only 16 Mio per second, which equates to 8 Mio buying and another 8 Mio of selling volume for all exchange rates together.

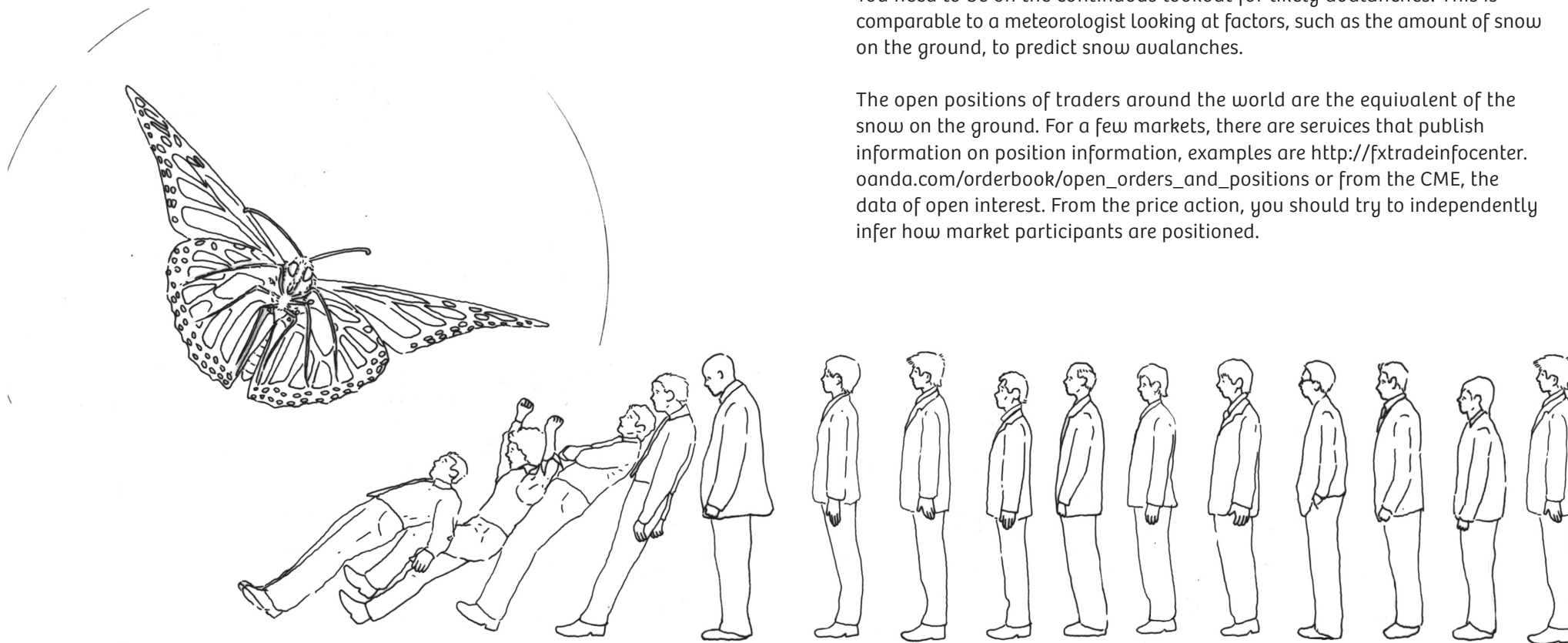
On a second by second basis, the volume is a mere trickle; this is a huge contrast to the mind-blowing number for a full 24 hour trading day. For the individual exchange rates, the second by second volume numbers are a lot smaller: for EURUSD with the biggest turnover, the volume per second is 3.5 Mio USD and, for a minor exchange rate, such as USDCAD, only a trifle of 250 000 USD per second. The trickle volume on a second by second basis is also true for other markets, such as equity and fixed income markets. There the situation is even more extreme; the volumes in these other markets are 10 times smaller for the fixed income and 50 times smaller for the equity markets.

In foreign exchange, the spreads are low; for EURUSD, they are as low as 0.006 percent. The size of the spread is small when compared with the average daily price move of 0.6%, so the risk as market maker is high. If the market maker cannot sell his inventory, then he risks incurring a large loss. He can only generate a profit if he carefully manages risk. He needs to aggressively skew his prices up or down to minimize his exposure. If he does not do this, then a small imbalance of buying and selling will result in a large exposure, where he risks incurring a loss. This implies that even small orders have a big price impact.

Compared to the trillions that are traded every day, it is thus paradoxical that already small market orders can move the market. For minor currencies, 50 Mio is enough to move the exchange rate by 0.2 percent. For the

major currencies such as EURUSD, the necessary amount is roughly 100 to 200 Mio depending on the time of day; these numbers are peanuts in the bigger picture. To move the EURUSD by 0.2 percent, a trade of 200 Mio USD needs to be made, which requires as little as 5 Mio USD in terms of equity. It is astounding that an economy with a GDP of 14 trillion can have its exchange rate moved by 0.2% due to the actions of a trader with 5 Mio USD of equity.

Because a small market order can move the market, there is no certainty of the direction of the next price move – at any time, there may be an unexpected price spike, up or down. It is sufficient if just one person anywhere in the world decides to buy or sell in size for a price spike to occur. Under specific circumstances, such a price spike can lead to cascading margin calls and bring about a price avalanche.



Butterflies cause avalanches of cascading margin calls

Price spikes trigger closeouts from traders who have already accumulated large unrealized losses and whose positions are hovering close to the stop; be it the voluntary stop of the trader or the margin call at which the market maker will close the position.

If a price spike triggers the stops of traders and forces them to close their positions, the closeouts further increase the imbalance of buyers and sellers and induce the market maker to skew the price even more fuelling a continuation of the price move with more margin calls. Starting with a small price spike, there may be one margin call triggering the next and turning an initially innocuous price spike into a longer-term trend.

You need to be on the continuous lookout for likely avalanches. This is comparable to a meteorologist looking at factors, such as the amount of snow on the ground, to predict snow avalanches.

The open positions of traders around the world are the equivalent of the snow on the ground. For a few markets, there are services that publish information on position information, examples are http://fxtradeinfocenter.oanda.com/orderbook/open_orders_and_positions or from the CME, the data of open interest. From the price action, you should try to independently infer how market participants are positioned.

Passive herding: how traders get locked into the same position

A characteristic trader behaviour is that traders tend to hold on to losing positions but to take profits early with winning positions. Whenever price trends occur, traders on the right side of the trend closeout their positions, whereas the traders with the losing positions stick to their positions. As the trend progresses, the ratio of trend followers and counter-trend traders tends to become ever more one sided, and eventually 70 to 80 percent of the open positions are counter-trend. This is passive herding; the traders opened their positions for different reasons, some of them were following technical indicators, others followed some fundamental signal, but they now have something in common – they sit on losing positions with an unrealized loss and the likelihood of a margin call, if the trend continues.

Whenever positions of traders are very much one-sided with only long or short positions, the likelihood of a small price spike triggering a cascade of closeouts increases. This is typically the case when the price has reached a new extreme. In this situation, traders need to be careful and ready themselves for a likely avalanche due to cascading margin calls.

The herding behaviour is even stronger when the market has been trending strongly and then rapidly changes its direction. Many traders will then have the false expectation that the trend will just continue. They go on opening positions in the direction of the previous trend oblivious to the fact that the sign of the trend has changed. They are reluctant to realize losses and thus there is strong passive herding. This is particularly dangerous; a minor event would be sufficient to trigger a particularly violent cascade of margin calls affecting all the traders who have been herding. The price will then shoot off in the new direction starting a particularly strong new trend.

