

## ТЕХНИЧЕСКИЙ АНАЛИЗ В ПРИМЕНЕНИИ К РЫНКУ ФЬЮЧЕРСНЫХ СПРЕДОВ

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### TECHNICAL ANALYSIS IN APPLICATION TO THE FUTURES SPREADS MARKET

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#### Annotation

The futures spreads market can barely be called efficient. Thus, futures spreads trading requires the constant and active use of different types of analysis to make trading decisions. Despite the importance of this subject, research on it is very limited.

There are five basic types of analysis that can be used when working with spreads: fundamental, seasonal, technical, comparative historical, and regression–correlation.

This series of articles aims to extend the currently limited literature on the analysis of futures spreads. Its objectives are to consider in detail the possible practical application of all types of analyses to spreads, to assess the supplementary function of comparative–historical analysis, and to demonstrate the inefficiency of application of the regression–correlation analysis for practicing investors.

The series consists of four papers: the first article discusses fundamental analysis, the second paper deals with technical analysis, the third one covers seasonal analysis, explores comparative–historical analysis, critically examines regression–correlation analysis in relation to spreads, and the final paper of the series proposes a framework of co–integration of the four types of spreads analysis for the purposes of creating trading strategies and decision–making.

This paper is structured as follows: section one discusses the possibility of applying major tools of technical analysis to the futures spreads market, section two concentrates on the indicator RSI.

**Keywords:** futures spreads, technical analysis, the Relative Strength Index (RSI).

#### Аннотация

Фьючерсный рынок спредов едва ли можно называть эффективным. Таким образом, торговля фьючерсными спредами требует постоянно–го и активного использования различных видов анализа для принятия торговых решений. Несмотря на важность этого вопроса, исследования этой темы очень ограничены. Есть пять основных видов анализа, которые можно использовать при работе с фьючерсными спредами: фундаментальный, сезонный, технический, сравнительно–исторический и регрессионно–корреляционный. Нашей серией статей мы стремились расширить в настоящее время ограниченное количество литературы по анализу фьючерсных спредов. Цель статей – подробно рассмотреть возможности практического применения всех видов анализа в работе с фьючерсными спредами, оценка дополнительной функции сравнительно–исторического анализа, и демонстрация неэффективности применения регрессионно–корреляционного анализа для практикующих инвесторов. Серия состоит из четырех статей. В первой статье рассматривается фундаментальный анализ, вторая статья посвящена техническому анализу, третья охватывает сезонный и сравнительно–исторический анализ, кроме этого, в ней критически рассматривается регрессионно–корреляционный анализ, и в четвертой статье предлагается алгоритм совместной интеграции четырех видов анализа с целью создания торговых стратегий и принятия решений. Эта статья построена следующим образом: в первой части обсуждается возможность применения основных инструментов технического анализа на рынке фьючерсных спредов, вторая часть концентрируется на индикаторе RSI.

#### Ключевые слова:

Фьючерсные спреды, технический анализ, индикатор RSI.

#### Technical analysis

Technical analysis is the study of market dynamics with the purpose of forecasting future price trends; it is focused on investment decision–making (see Murphy [1999]). As applied to the futures market, the term market dynamics captures two information sources available to a technical analyst–namely, transaction prices and transaction volumes. In investigating price movement and trade volume dynamics, technical analysis puts aside the issuer and the environment where it operates–that is, knowing the reasons behind price movements is not absolutely necessary in a technical analysis. Usage of technical analysis in spreads trading is studied less than other types of analysis (see

McComas [2003]; Smith [2000]; Perchanok [2011]).

The classical theory of technical analysis, which contains fundamental principles laid down by Charles Dow towards the end of the 19th century, is founded on three postulates–fine points on which the technical analysis is based, and its methodological logic (Murphy [1999]).

First postulate: The market considers everything (or the rate considers everything; the price considers everything). This postulate underlies the theory of market efficiency, which states that nothing can operate more effectively than the market itself, as prices reflect all information available at any point in time.

Second postulate: Price movements are subject to specific tendencies (or prices move in one direction within a certain time interval; the market follows certain trends).

*Third postulate: History repeats itself.*

In our opinion, not all of the technical analysis tools can be used in work with spreads. Our observations show that it is much better to use configuration methods to make a technical analysis of spreads, such as trend lines, minimum–maximum, support and resistance, and trading ranges.

Let's consider each of these methods in detail.

Support and resistance lines (levels)

Support and resistance lines represent the foundation of classical trend analysis (see Murphy [1999]; Williams [2005]). Their emergence, in the opinion of technical analysts, can be explained using the following logic. A resistance line connects market important maximums or market peaks. It emerges when buyers neither can nor wish to buy a given futures contract, spread or security at higher prices. Each time the price moves upward, sellers' resistance builds up and sales increase, which also puts pressure on the price. The upward trend is halted, as though held back by an invisible ceiling, which it cannot break through at that moment. If "bulls" gather their forces together, and "bears" slacken their grip, the price is likely to break the resistance level established earlier. Otherwise, the price will inevitably move the opposite way.

A support line connects market important minimums. Support lines emerge and exist inversely to resistance lines. Here, "bulls" exchange places with "bears." Sellers are active market players who push the price downward, whereas

buyers will then find themselves on the defensive side. The more active the sellers and the more passive the buyers, the more probable it is that the support line level will be broken and the prices will slide even further downward.

If the support or resistance levels are distinctly broken, they usually move in opposite directions. Therefore, as a rule, once a very strong support level gets through, it turns into an equally consistent resistance level. Conversely, when a strong resistance level is broken, it turns into a consistent support level.

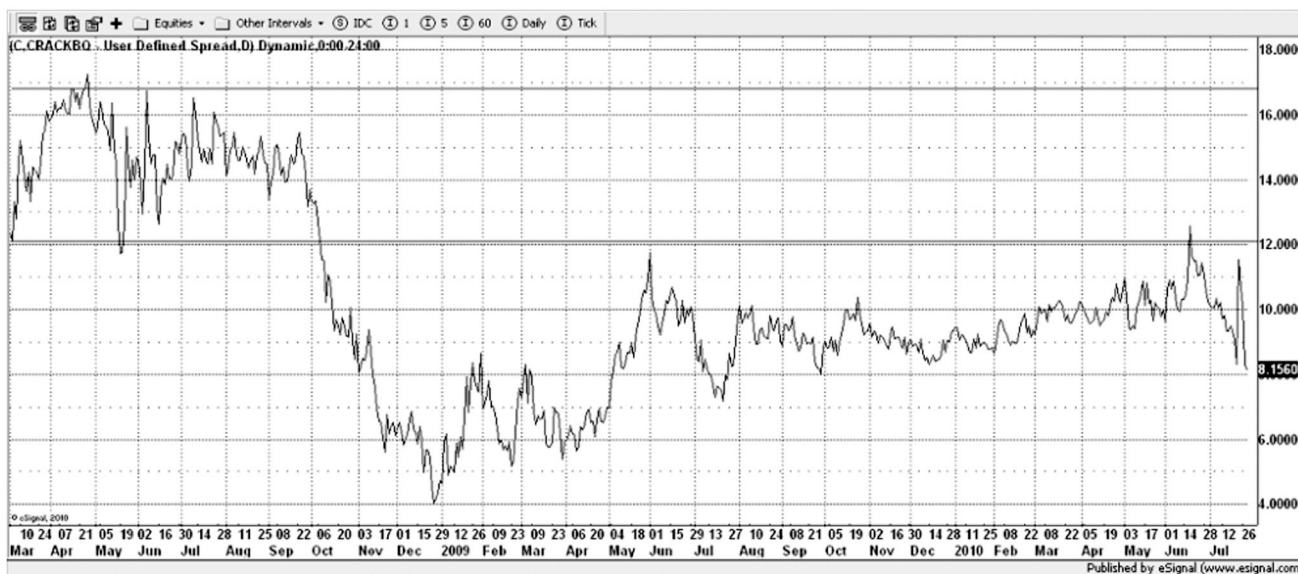
Figure 1 shows a crack spread chart in which support and resistance lines are represented. Due to the decline in the spread at the end of 2008, initial support turned into resistance in an altered situation.

It is better to draw support and resistance lines through the areas containing price clusters rather than through extreme price excursions. Price clustering shows that the behavior of a determining number of traders changed its direction, whereas maximum price excursions in such areas make the weakest market participants panic and hastily close their loss–making positions.

Analysis of support and resistance lines helps traders to keep track of changes in the trend—both swings and acceleration.

Trend lines

A trend line is a natural product of the trend itself (see Murphy [1999]). It is a straight line that connects maximum or minimum price peak points. If we look at the crack spread chart presented above, we see that the fall at the end of 2008 was followed by growth extending into mid–2010



Source: eSignal

Figure 1. CLQ0/HOQ0/RBQ0 Crack Spread Chart.



Source: eSignal

Figure 2. CLQ0/HOQ0/RBQ0 Crack Spread Chart.

with a clearly defined trend (Figure 2).

Trend lines can be classified by their importance using the following indicators:

◆ *Time scale:*

The larger the time scale, the more important the trend line. The trend line on a weekly chart displays a more important trend than that on a daily chart, and the trend line on a daily chart shows a more important trend line than that on a one-hour chart.

◆ *Length:*

The longer the trend line, the more reliable it is. A short trend line displays behavior of masses within a short time interval, whereas a longer line reflects their behavior within a longer timeframe.

◆ *Number of times prices touch the trend line:*

The more touches of prices, the more reliable the trend line. A preliminary trend line is drawn through only two points; the third contact point makes it more reliable, and the fourth or fifth touch points show that the dominant group on the market has significant potential.

◆ *Slope angle:*

The angle between the trend line and the horizontal line displays the emotional intensity among the dominant market crowd. A steep trend line means that the dominant crowd is dynamic, whereas a relatively flat trend line means that the dominant crowd is rather inert. A flat trend line usually takes longer to develop.

To plot a trend line, it is enough to have two points through which it is drawn, and one more point to "validate" the trend. The trend line exists until it is broken through due to a sharp upward or downward price movement. Sharp changes in trend line directions do not occur very often. If there is no consolidation, the longer this situation continues, the sharper the subsequent swing. Several other chart examples of trend line tracing are shown below.

Trading ranges

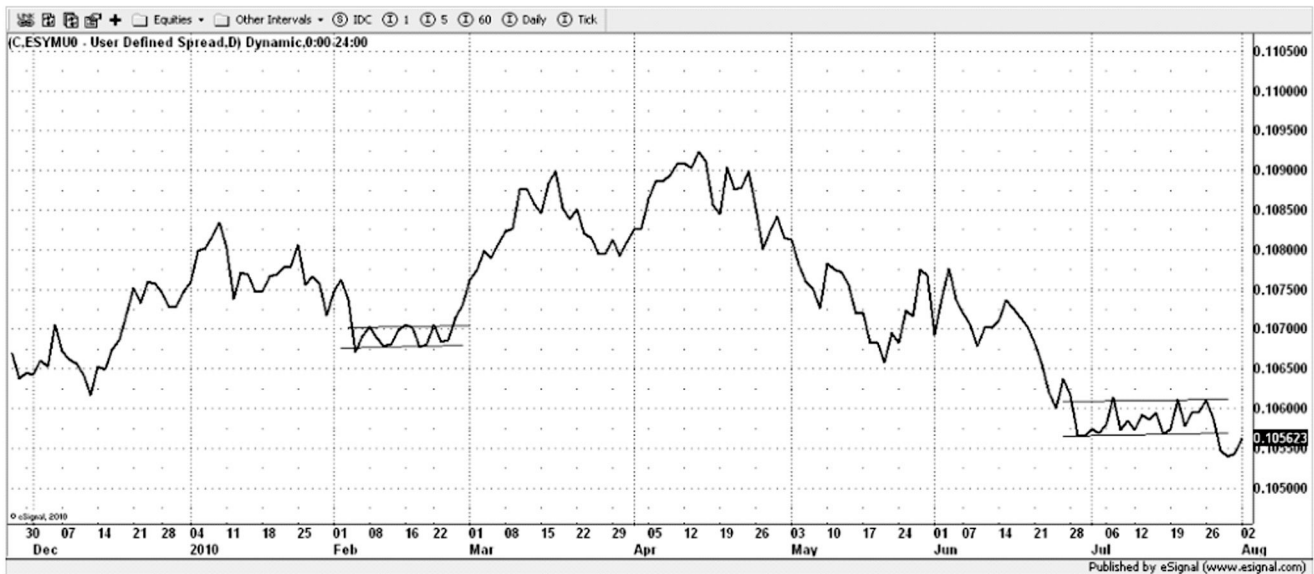
Significant temporary price fluctuations between support and resistance levels lead to the formation of the so-called trading range, the limits of which are defined by these lines (see Murphy [1999]; Williams [2005]). It is characteristic for some spreads to remain in a narrow trading range for a long period of time, considered almost as a kind of sideways trend. At a certain point in time, they leave this range under the influence of various fundamental factors and their movements can come across as very sharp and strong (Figure 3).

In conclusion, we would like to note that technical analysis methods have definite shortcomings. First, the criteria defining configuration patterns are relatively subjective (one analyst will examine one figure or one line, whereas another will study others, and the third will see absolutely nothing). The second imperfection is predetermined by particular market situations, which is generally true for all technical methods. Therefore, on one hand, configuration methods are very simple, but, on the other hand, they are subjective and in general do not provide a highly credible forecast of price movements. In our opinion, these methods should only be used in combination with other analysis methods—namely, fundamental and seasonal analyses.

In our opinion, there is a powerful tool of technical analysis that allows one to perform a dynamic assessment of the situation: the Relative Strength Index (RSI). This subject is addressed in more detail by Perchanok and Hrytsyuk (2011). However, we draw attention to some important abstracts.

RSI

The Relative Strength Index (RSI) was developed and described by Welles Wilder [1978]. The formula of this indicator is based on the theory of probability. We would like to note that the general concept underlying this indicator holds



Source: eSignal

Figure 3. ESU0/YMU0 Spread Chart.

that any movement in a particular direction will stop and the direction will change sooner or later. The stronger the initial movement, the stronger the pullback. Naturally, a movement that has lasted a few days will cause a greater reverse movement than one that has lasted a few hours or minutes. If we think about it, such a wave-like movement is somewhat phenomenal in its essence. We are used to pullbacks that are commonly called corrections and are integral to the behavior of any financial market. Generally, it is hard to predict which direction the prices will "go" within short time intervals. However, we can assert with 100% confidence that a reverse movement will occur and we can also expect it to be considerable in strength.

There are a number of technical analysis methods that enable reverse movements to be assessed with a varying degree of accuracy (Stochastic Oscillator, Relative Momentum Index). It should also be noted that the RSI indicator is an oscillator and its signals work most effectively only when the market experiences relatively lateral movement, whereas in a soaring or plummeting market the trend areas may well contain a considerable number of false signals (see Murphy [1999]; Perchanok and Hrytsyuk [2011]).

The RSI is plotted on a chart scaled from 0 to 100. The 70 and 30 values are used as warning signals; the zone below 30 is called the oversold zone and that above 70 is

referred to as the overbought zone.

The RSI has only one parameter, which is the number of calculation periods. When introducing this indicator, Welles Wilder [1978] recommended using a 14-day period for RSI calculation. Later on, 7-, 9- and 25-day periods also became common. It should be kept in mind that the shorter the calculation period, the higher the oscillator's sensitivity and the greater the amplitude of its oscillation.

In our opinion, the daily RSI is the most interesting for assessing spreads. Since spreads tend to exhibit prolonged movements in any direction, their RSI quite easily moves into the area of extreme values and can stay there for a long time, sometimes reaching values such as 10 and 90. As practice shows, it is fairly hard for spreads to sustain a daily RSI value higher than 85 and lower than 15 for more than several days. Moreover, their potential for further movement along the trend is rather limited. These RSI levels may well be considered a market entry signal. Apart from the daily RSI, the 5-minute RSI can also be utilized, but it should be kept in mind that its values should be very extreme and approach 10 for spread purchase and 90 for spread sale. The 5-minute RSI is best suited for assessing intercommodity and intermarket spreads, while the daily RSI is suitable for spreads of all categories (Perchanok and Hrytsyuk [2011]).

#### REFERENCES

1. McComas, A. "Getting Technical with Spreads." *Futures Magazine*, July 2003, pp. 52–55.
2. Murphy, J.J. *Technical Analysis of the Financial Markets: A Comprehensive Guide to Trading Methods and Applications*. New York: York Institute of Finance, 1999.
3. Perchanok, K., I. Hrytsyuk. *The Encyclopedia of the Indicator RSI (Relative Strength Index)*. Charleston: CreateSpace, 2011.
4. Perchanok, K. *Futures Spreads: Classification, Analysis, and Trading*. Charleston: CreateSpace, 2011a.
5. Smith, C. *Futures Spreads Trading: The Complete Guide*. Greenville: Traders Press, 2000.
6. Wilder, W.J. *New Concepts in Technical Trading Systems*. New York: Trend Research, 1978.
7. Williams, L. *Trade Stocks and Commodities with the Insiders*. New York: Wiley, 2005.