

ПРИМЕНЕНИЕ РАЗЛИЧНЫХ ВИДОВ АНАЛИЗА ФЬЮЧЕРСНЫХ СПРЕДОВ ДЛЯ ПРИНЯТИЯ ТОРГОВЫХ РЕШЕНИЙ

AN ALGORITHM OF CO-INTEGRATION OF THE DIFFERENT TYPES OF ANALYSIS IN APPLICATION TO FUTURES SPREADS

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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 proposes an algorithm of co–integration of the four types of spreads analysis, section two contains conclusions for the series of four articles.

Keywords: futures spreads, fundamental analysis, seasonal analysis, technical analysis.

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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 предлагается алгоритм совместной интеграции четырех видов анализа спредов, вторая часть содержит выводы для нашей серии из четырех статей.

Ключевые слова:

Фьючерсные спреды, фундаментальный анализ, технический анализ, сезонный анализ, сравнительно–исторический анализ.

Based on our research on spreads trading, we propose the following framework of co–integration of the different types of analysis in relation to the spreads:

1. Choosing the spreads to be used as a trading vehicle;
2. Making a plan of seasonal spread movements for a year using seasonal analysis;
3. Gathering and assessing, on a weakly basis, fundamental information on each spread using fundamental

analysis;

4. Making a comparison between current and historical data;
5. Making a comparison between the magnitude of current spread movement and that in previous years;
6. Making use of technical data to determine the best trade entry and exit points;

The algorithm described above shows how the four types of analysis can be used to search for potentially inter–

esting trades. Let us discuss each step in this algorithm separately.

1. Choosing the spreads to be used as a trading vehicle

An approach to trading strategy development is highly dependent on the types of spreads. Since there is a rich variety of spreads, investors should be very clear about what spreads they are going to trade in.

Spreads can be classified into different groups using various criteria, beginning with the relation between the futures comprising a spread—for example, agricultural futures, metals futures, etc.—and ending with the level of volatility. This largely depends on the investor's interests and objectives. Of course, an experienced investor has a clear idea about what spreads he is going to trade in, whereas a beginning investor will find this choice rather challenging. Although it is hard to advise someone on choosing the spreads, to simplify the task, we would suggest categorizing spreads as follows:

- ◆ by commodity group;
- ◆ by the degree of seasonal influences;
- ◆ by volatility.

The spreads falling within category 1 are classified by the commodity group to which the futures comprising these spreads belong, i.e.:

- ◆ energy products, including crack spreads;
- ◆ agricultural products, including grains, soybean complex, meat, etc.;
- ◆ industrial metals;
- ◆ precious metals;
- ◆ currencies, including currency indices;
- ◆ interest rates, including interest rate indices;
- ◆ stock futures;
- ◆ stock index futures;
- ◆ weather futures;
- ◆ emission allowances, etc.

Classification by commodity group allows investors to understand better which particular group they are going to deal with. This choice will determine which fundamental and seasonal factors investors will have to analyze because these factors are peculiar to each commodity group (and, of course, they are even more specific for each particular spread).

Classification based on the degree of seasonality influences would enable investors who rely heavily on seasonal analysis to focus on those spreads in which seasonality is more pronounced as a major influence factor. Although it is very difficult to measure the extent to which seasonality affects the multitude of existing spreads, we will try to do it by dividing the spreads into three groups:

- ◆ those with a high degree of seasonal influences;

- ◆ those with a medium degree of seasonal influences;
- ◆ those with a low degree of seasonal influences.

The spreads that display a high degree of seasonality influences include: heating oil, natural gas, gasoline, soybean and soybean products calendar spreads; heating oil/gasoline spread, and heating oil/gasoil spread.

The spreads that exhibit a medium degree of seasonality influences include: crude oil calendar spreads, heating oil/crude oil spread, gold/silver spread, gold/platinum spread, crack spread, crush spread, and spark spread.

The spreads that are little affected by seasonal effects include: stock index spreads, stock index – single stock futures spreads, currency spreads, WTI/Brent spread, and platinum/silver spread.

By grouping spreads according to their volatility, the investor can better identify the spreads that he would prefer for trading based on a perceived risk exposure. It would be logical to suppose that the more volatile a spread, the higher the risk exposure. A more conservative investor would therefore likely prefer less volatile spreads. The volatility of a spread depends both on the type to which it belongs (calendar, intercommodity, intermarket, or processing) and on the volatility of the futures comprising the spread. A general rule in this situation may be formulated as follows: calendar and intermarket spreads are less volatile than intercommodity and processing spreads. As for the futures, their volatility varies dramatically. Below is a list of some of the futures contracts arranged in ascending order of volatility:

- ◆ interest rate futures;
- ◆ currency futures;
- ◆ commodity index futures;
- ◆ agricultural futures;
- ◆ stock index futures;
- ◆ precious metals;
- ◆ energy futures;
- ◆ industrial metals.

Certainly, this ranking is rather conventional, since volatility changes over time and largely depends on the time interval under analysis.

2. Making a plan of seasonal spread movements for a year using seasonal analysis

As mentioned earlier, various types of spreads are affected by seasonal factors to different extents (Moore et al. [2006]). To explain how the above described approach works, we will assume that we are interested in working with a spread that is significantly affected by seasonal factors—for example, a gasoline calendar spread. From a seasonal analysis of this spread, we find out that its size

changes according to a certain seasonal pattern from year to year: it dramatically narrows starting in March and begins to sharply widen in September. Thus, we come to the conclusion that we are mostly interested in the early spring and early autumn periods and there isn't much need to track this spread during the months that do not fall into the period of interest. At the same time, we are not able to guess when the gasoline spread will start to narrow in the spring, but we can start actively tracking the behavior of this spread well in advance, for example, from late February, waiting for a suitable moment to bet. Then we can make a break in tracing the spread, if we are not interested in its interim fluctuations. In August, we have to start tracing this spread again so as to correctly assess the time to enter the market. Of course, making a timetable for "heightened attention" to one spread seems to be a bit strange, but imagine that the investor's arsenal includes more than 100 different spreads. The attention given to each spread will have to be limited to the minimum necessary.

3. Gathering and assessing, on a weekly basis, fundamental information on each spread using fundamental analysis

As soon as we start to trace a spread in expectation of its potential seasonal movement, it is necessary for us to begin collecting information to be able to perform an adequate fundamental analysis. Since the fundamental factors do not change instantly, it will be sufficient to conduct a weekly assessment of the situation in the subject area. For instance, when it comes to a gasoline calendar spread, the best time to assess it is after the EIA data are released.

4. Making a comparison between current and historical data

As new information about the spread we are interested in is accumulated, and new fundamental data affecting this spread are published every week, we need to conduct a comparative analysis between these data and data for a similar period in past years. This may give additional clues to understanding the nature and size of future spread movements. For instance, the EIA announces that the gasoline inventories in the last week of March were at the upper end of the average range for the last five years. After looking at the data on inventories in past years, we discover that even when the inventories were at the bottom of this range, the spread did not start to narrow dramatically. It can hardly be expected that when the inventories are at the upper end of the range, the spread will start to narrow actively.

5. Making a comparison between the magnitude of current spread movement and that in previous years

This comparison will help us better appreciate the levels

reached by this spread and what may be the local minimums and maximums for it. If we succeed in finding a similar spread in the past, which is close by its characteristics to the current spread, we will gain a greater insight into how this spread may behave in the near future. Obviously, this is highly subjective, but if we treat this method of analysis as supplementary, it may also prove to be useful in performing our next step in the algorithm: evaluating a potential profit.

6. Making use of technical data to determine the best trade entry and exit points

In the chapter dedicated to technical analysis, we discussed quite extensively what methods can be used in work with spreads. If the seasonal, fundamental and other factors suggest that the spread should start widening, but at the moment it moves within a certain corridor, it would be logical to suppose that if the spread goes beyond the limits of this corridor in the expected direction and fixes there, it may serve as a good signal to enter the market. Accordingly, if the movement within the expected trend has met considerable resistance, which is below the level of the anticipated profit, then perhaps we should think about closing the trade at the level of this resistance, as it is quite possible that it will not be "broken through," and the spread will turn around and move in the opposite direction. It should be noted that a technical analysis should preferably be employed at the final stage of spread assessment as a logical completion of the preparation for trading strategy implementation.

Based on the works of Smith [2000] and Perchanok [2011], we created a schematic plan that should help to implement in practice (e.g., formalize) the steps of the offered algorithm.

Sample plan for situation analysis before placing a position

General

Data:
 Name of instrument:
 Number of contracts:
 Margin:
 Commission:

Fundamental analysis

What is the current supply situation? What is the current demand situation? Are demand and supply balanced? Estimated forecast for this year.

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Seasonal analysis

Analyzed period:
 from
 to

Probability of a successful trade, %
 Average movement:
 Maximum rise:
 Maximum fall:
 Comments on seasonal analysis:

Technical chart analysis

Trend: long-term
 medium-term
 short-term
 Support levels:
 Resistance levels:
 Annual contract maximum:
 Annual contract minimum:
 Comments on technical analysis:

How many years have been studied? What method of study was used? Were there any years similar to today's situation? Which factors were similar and which were different? What happened to the price in similar years? Describe the expected price movement scenario (position lifetime).

Conclusions from all analyses

What are the reasons for opening the position? Which indicators and factors are favorable/adverse to opening

the positions? What must happen for the position not to work? Expected scenario of how the price (position) will behave.

Expected actions

Position: buy
 sell
 Opening level:
 Opening day:
 Stop/Loss level:
 Will trailing Stop/Loss be used?
 Take/Profit target:

Conclusions

When working with spreads, investors should consider the results of the four types of analysis: fundamental, seasonal, technical, and comparative-historical. Financial markets in recent years have tended to show the weakened role of fundamental factors and analysis, with the simultaneously increasing importance of technical analysis. Seasonal and comparative-historical analyses play only a supplementary role in making trading decisions. Regression-correlation analysis is barely applicable for practicing traders.

In this series we reviewed the specifics of the application of each type of analysis in practice. The algorithm of co-integration of four types of analysis for making trading decisions was offered.

After intensive study, we consider the most useful tool of technical analysis to be the Relative Strength Index (RSI). This tool could be of specific interest to the investors utilizing discretionary contrarian strategies based on futures spreads. This indicator could be integrated most efficiently into strategies with a short-to-medium-term investment horizon.

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