

ИНФОРМАЦИОННЫЕ ТЕХНОЛОГИИ В МАРКЕТИНГЕ

DETECTION OF STATISTICALLY SIGNIFICANT JUMPS IN THE PRICES OF CURRENCY PAIRS AND PRICE OF BRENT OIL IN INTRADAY

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ОБНАРУЖЕНИЕ СТАТИСТИЧЕСКИ ЗНАЧИМЫХ СКАЧКОВ ЦЕН ВАЛЮТНЫХ ПАР И КОТИРОВОК НЕФТИ МАРКИ BRENT ПРИ ВНУТРИДНЕВНОЙ ТОРГОВЛЕ

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Аннотация. Для котировок нефти марки Brent и валютной пары Евро/Доллар были выявлены внутридневные скачки, с помощью статистической методологии, оценено количество скачков, что позволило выявить арбитражные возможности, проверены статистические гипотезы о наличии резких изменений внутри торговых дней при расчетах на временных интервалах различной длины, вычислены средние скачки, средние доходности, а так же истинные доходности за рассматриваемые периоды. И так же мы провели сравнение на наиболее выгодное вложение между котировками нефти марки Brent и валютной парой Евро/Доллар.

The analysis of empirical data. A study of intraday gains of the currency pair Euro/Dollar and quotes of Brent crude oil was conducted. For the period from 30 June 2014 to 31 December 2014.

Further developments will be presented on the example of the price of a currency pair Euro/Dollar.

The frequency data was 60 minutes, 30 minutes and 5 minutes. For each period corresponding intraday increment were calculated, then the realized variation was calculated, the index of the quadratic variation was also calculated. Thus, the contribution to the total variation can be estimated by the relative jump.

Advancing a statistical hypothesis about the presence of at least 1 jump and considering the normal distribution of z-statistics, the number of days, in which significant rises were seen in asset prices, was estimated. [1]

In Table 1 you can see the number of days in which significant rises in the price of the currency pair Euro/Dollar and quotes of Brent crude oil for each of the periods were seen.

Table 1

*The number of days with bursts prices of a currency pair Euro/Dollar
(from 182 and 156 possible)*

	60 minutes	30 minutes	5 minutes
EUR/USD	17	46	86
Brent	13	38	71

Analyzing the data in Table 1, we can conclude that with increasing length of the time interval, the number of arbitrage opportunities decreases.

Table 2 shows the magnitude of the jumps and their number for the currency pair EUR/USD at the considered time intervals.

Based on Table 2 you can monitor the average value of the jump and the average yield on the currency pair EUR/USD. The values are given in Table 3.

Analysis of Table 3 shows that with increasing length of the time interval, increase in the average size of the jump is observed, however, the average return is reduced.

Table 2

*The distribution of the magnitudes of the jumps
for different time intervals for the currency pair Euro/Dollar*

	5 min	30 min	60 min
The size of the jump	The number of jumps	The number of jumps	The number of jumps
Total number	38437	6467	3245
No changes	21578	3456	1579
< 0,1	3342	663	287
0,1–0,3	5865	854	474
0,3–0,5	6964	1200	719
0,5–0,7	567	231	155
0,7 <	121	63	31

Table 3

The average values of the jumps and returns of the currency pair Euro/dollar

	5 min	30 min	60 min
The average size of the jump, %	0,11	0,12	0,14
Total number of jumps	38437	6467	3245
The average yield for the whole period, %	4228	776	454

Further action was the comparison between the prices of a currency pair Euro/Dollar quotes of Brent crude oil. During this comparison for quotes on Brent oil intraday jumps were identified, using statistical methodology, the number of jumps were estimated, which allowed to identify arbitrage opportunities for investors to generate more profits in the stock market, statistical hypothesis about the presence of abrupt changes within the trading days during the calculation on time intervals of different lengths were checked, average jump, average return, and the true return for the sample period were calculated.

Conclusions. On the basis of this work we can conclude that the most appropriate solution is to invest in a currency pair Euro/dollar than investing in Brent.

Список литературы

1. Tim Bollerslev, Tzuo Hann Law, George Tauchen. Risk, jumps, and diversification. – Journal of Econometrics 144 (2008) 234–256.

ИНТЕРНЕТ КАК ИНСТРУМЕНТ МАРКЕТИНГА

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THE INTERNET AS A MARKETING TOOL

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Abstract: The paper aims to provide an overview of the Internet as a marketing tool. The work analyses the advantages of the Internet marketing, mechanisms to influence the potential and actual consumers of the advertiser and also it considers the assumptions and perspectives of its development in the future.

The emergence of a global computer network was marked by the emergence of a new communicative environment and the market with a large number of potential consumers who own a