For the purpose of our study, first of all we will find first differences of the logarithmic index values of X and find median and quartiles of this series. The median of the series is 0.001,the first quartile is -0.006 and the third quartile is 0,008. Using these values we may transform this series into symbolic patterns such as these:

If $X_i \leq -0.006$ our symbolic value will be -2
If $-0.006 < X_i \leq -0.002$ our symbolic value will be -1
If $-0.002 < X_i < 0.002$ our symbolic value will be 0
If $0.002 < X_i \leq 0.008$ our symbolic value will be 1
If $X_i > 0.008$ our symbolic value will be 2

Here we defined pattern as a combination of these five numbers with a fixed length. Also, we suppose that the beginning point of a pattern is independent of the time. In a time series, any point time can be a beginning of a pattern with a certain length. For example, in a daily time series while Friday and Monday can form a pattern of two days, at the same time Monday and Tuesday can form a pattern of two days too. Afterwards we will discuss the effects of the beginning point.

In our analysis we have used patterns of two, three, four and five days. Our methodology is to dissect the same time series into sub periods of two, three, four and five days. By means of this procedure we have produced patterns that have different lengths. This is something like studying the same sample by looking at it from the various perspectives. As the length of a pattern increases, the number of different patterns produced also increases exponentially and this fact can be seen from Table 2.

Table 2

LENGTH AND THE NUMBER OF EVENTS

Length	The Number of Different Patterns
2	$5^2 = 25$
3	$5^3 = 125$
4	$5^4 = 625$
5	$5^5 = 3125$