

Futures Trading: Task Analysis

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Futures contracts (so-called futures) are financial derivatives traded at exchanges (see [4]). Financial speculators are interesting in the futures as well as stocks and funds.

The speculator predicts the price's increase or decrease in order to buy or to sell the given instrument. The origin of the speculator's profit is in the price's change. However the clear profit depends also on transaction costs and taxes, which makes the speculator's task more difficult, than it seems at the first sight.

The design of profitable strategy is challenging and speculators use various methods to that. Two main streams are: the fundamental analysis and the technical one. The fundamental analysis assumes the actual price does not reflect the real price. Therefore it bases predictions on the analysis of the market state, actual news and activities of the institutions involved. In contrast, the technical analysis deals primary with price's curves to predict the further price's behavior.

Classical investing methods based on the fundamental analysis (e.g. value investing [3] or indexing [2]) serve primary for a stock trading and for the long-time investment in terms of decades. The technical analysis [5], may provide a short-time profit, as the actions are recommended more often, i.e. one action per week or month, but most of methods of technical analysis are designed only for stocks. The futures contracts are special type of investment instruments, therefore their prices do not behave similarly to stocks prices: there are no strong long-time trends, the possible trends are usually short-time, if any.

Up to the author's best knowledge, none of the fundamental analysis or technical analysis methods is profitable at futures. Beside, if even exists any, it is not advertised everywhere and is kept in a strict confidence.

The presented approach belongs to the technical analysis, because the main information, used to design the buying/selling strategy, originates from the price. The original task is reformulated as decision-making problem and is solved via dynamic programming (see [1]). The presented approach analyzes the task, because it has been shown that the futures trading has a lot of specific properties generally not respected by dynamic programming.

The main contribution of the article is based on a comparison of: (i) the speculator's strategy designed with the knowledge of the *whole* future price sequence and; (ii) the partial strategy designed with the knowledge of only a *part* of the future price's sequence. The comparison leads to an analysis of changes in the enlarging sequence of the speculator's actions with time. Two special indexes were designed for the comparison of two sequences of a different length.

This prepares a systematic background for a new approach in estimating the Bellman function [6] and to the design of the speculator's decision strategy for futures trading [7].

References

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