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Price Prediction Line, Investment Signals and Limit Conditions Applied for the German Financial Market

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Abstract : In the first decades of the 21st century, in the electronic trading environment, algorithmic capital investments became the primary tool to make a profit by speculations in financial markets. A significant number of traders, private or institutional investors are participating in the capital markets every day using automated algorithms. The autonomous trading software is today a considerable part in the business intelligence system of any modern financial activity. The trading decisions and orders are made automatically by computers using different mathematical models. This paper will present one of these models called Price Prediction Line. A mathematical algorithm will be revealed to build a reliable trend line, which is the base for limit conditions and automated investment signals, the core for a computerized investment system. The paper will guide how to apply these tools to generate entry and exit investment signals, limit conditions to build a mathematical filter for the investment opportunities, and the methodology to integrate all of these in automated investment software. The paper will also present trading results obtained for the leading German financial market index with the presented methods to analyze and to compare different automated investment algorithms. It was found that a specific mathematical algorithm can be optimized and integrated into an automated trading system with good and sustained results for the leading German Market. Investment results will be compared in order to qualify the presented model. In conclusion, a 1:6.12 risk was obtained to reward ratio applying the trigonometric method to the DAX Deutscher Aktienindex on 24 months investment. These results are superior to those obtained with other similar models as this paper reveal. The general idea sustained by this paper is that the Price Prediction Line model presented is a reliable capital investment methodology that can be successfully applied to build an automated investment system with excellent results.

Keywords : algorithmic trading, automated trading systems, high-frequency trading, DAX Deutscher Aktienindex
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