

ABSTRACT

Mario Timoti Manumpak Aruan, NIM 7213550029 (2025). *Development and Optimization of an RSI-MA-Based Expert Advisor with Adaptive Risk Management on the XAU/USD Pair: A Case Study of a Cent Account at LiteForex Broker in MetaTrader 5*

The advancement of financial technology in the era of the Fourth Industrial Revolution has driven the increasing adoption of automated trading systems (Expert Advisors/EA) in the forex market. This study focuses on the development and optimization of an EA based on the Relative Strength Index (RSI) and Moving Average (MA) indicators with the application of Adaptive Risk Management on the XAU/USD pair, which is known for its high volatility as a safe-haven asset. The literature review highlights the advantages of RSI as a momentum indicator and MA as a trend determinant, which are combined to improve signal accuracy. The research method employs a Research and Development (R&D) approach with a spiral model, consisting of planning, development, testing, and evaluation stages. The data used comprises historical XAU/USD data from 2019–2024, tested on the MetaTrader 5 platform using a LiteForex cent account. Analytical techniques include backtesting and forward testing to assess EA performance based on profit factor, expected payoff, and drawdown. The results indicate that the combination of RSI-MA with adaptive risk management enhances performance stability and risk control effectiveness, although consistent profitability has not yet been achieved. In conclusion, this strategy has the potential for further development through algorithm refinement and the addition of supporting indicators.

Keywords: *Expert Advisor, RSI, Moving Average, Adaptive Risk Management, XAU/USD*

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ABSTRAK

Mario Timoti Manumpak Aruan, NIM 7213550029 (2025). Pengembangan Dan Optimasi Expert Advisor Berbasis Indikator RSI-MA Dengan Adaptive Risk Management Pada Pair XAU/USD: Studi Kasus Akun Cent Broker LiteForex Di MetaTrader 5

Perkembangan teknologi finansial dalam era Revolusi Industri 4.0 mendorong peningkatan penggunaan sistem perdagangan otomatis (Expert Advisor/EA) di pasar forex. Penelitian ini berfokus pada pengembangan dan optimasi EA berbasis indikator Relative Strength Index (RSI) dan Moving Average (MA) dengan penerapan Adaptive Risk Management pada pasangan XAU/USD, yang dikenal memiliki volatilitas tinggi sebagai aset safe-haven. Kajian pustaka menekankan keunggulan RSI sebagai indikator momentum serta MA sebagai penentu tren, yang dipadukan untuk meningkatkan akurasi sinyal. Metode penelitian menggunakan pendekatan Research and Development (R&D) dengan model spiral, meliputi tahap perencanaan, pengembangan, pengujian, dan evaluasi. Data yang digunakan berupa data historis XAU/USD periode 2019–2024 melalui platform MetaTrader 5 pada akun cent LiteForex. Teknik analisis melibatkan backtesting dan forward testing untuk menilai efektivitas EA berdasarkan profit factor, expected payoff, dan drawdown. Hasil penelitian menunjukkan bahwa kombinasi RSI-MA dengan manajemen risiko adaptif mampu meningkatkan stabilitas performa dan efektivitas pengendalian risiko, meskipun profitabilitas konsisten belum tercapai. Kesimpulannya, strategi ini potensial untuk dikembangkan lebih lanjut dengan penyempurnaan algoritma dan penambahan indikator pendukung.

Kata Kunci: Expert Advisor, RSI, Moving Average, Adaptive Risk Management, XAU/USD

