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PROFITABILITY OF TIME SERIES MOMENTUM

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ABSTRACT. We propose a continuous-time heterogeneous agent model consisting of fundamental, momentum, and contrarian traders to explain the significant time series momentum. We show that the performance of momentum strategy is determined by both time horizon and the market dominance of momentum traders. Specifically, when momentum traders are more active in the market, momentum strategies with short (long) time horizons stabilize (destabilize) the market, and meanwhile the market under-reacts (over-reacts) in short-run (long-run). This provides profit opportunity for time series momentum strategies with short horizons and reversal with long horizons. When momentum traders are less active in the market, they always lose. The results provide an insight into the profitability of time series momentum documented in recent empirical studies.

Key words: Time series momentum, profitability, market stability, stochastic delay differential equations.

JEL Classification: C62, D53, D84, G12

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