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Schrodinger Equation for Momentum Indicator in the Stock Market

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ABSTRACT

This paper is a contribution to the application of quantum finance theory. Some of the common momentum indicators include: the rate of change (or the ROC), the relative strength index (or the RSI), the moving average convergence divergence (or the MACD) and the stochastic indicator. It is noted that many of the known methods for computing the indicators including those not mentioned here, have mainly concentrated on the historical stock's data spanning over weeks and months, and even at that, there is no empirical basis for most of those methods as they were mere mathematical manipulations and conjecture. Using the model based on the Schrodinger equation for the harmonic oscillator, we developed a method to compute the velocity and momentum of stock prices in a stock market. This offered a proven approach that would give financial technical analysts credible computational method using daily/current stock market data that would improve their quality of advice to potential investors and interested stakeholders. Some randomly selected equities traded on the floor of the Nigeria Stock Exchange were used as our case study.

Keywords –Schrodinger equation, quantum finance, velocity indicator, momentum indicator, technical analyst.

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