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PERSISTENCE AND FINANCIAL MARKETS

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The persistence phenomenon is studied in a financial context by mapping the time evolution of the values of the shares quoted on the London Financial Times Stock Exchange 100 index (FTSE 100) onto Ising spins. Historical data over an arbitrarily chosen 10-year period is analysed. By following the time dependence of the spins, we find evidence for power law decay of the proportion of shares that remain either above or below their 'starting' values. As a result, we estimate a persistence exponent for the underlying financial market to be ≈ 0.5. The persistence behaviour of the log-returns is also discussed. We also investigate persistence in a socio-econo dynamics model using computer simulations at a finite temperature on hypercubic lattices in dimensions up to 5. The model includes a social local field which contains magnetization at time t. The nearest neighbour quenched interactions are drawn from a binary distribution which is a function of the bond concentration. We determine the decay of the persistence probability in the model. The implications of the existence of 'blocking' in the social and economics context are discussed.

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