**Analysis of banking system contagion with random graphs**

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This paper proposes a model of interaction in a stock market with two kinds of strategies: fundamentalist (or rational) traders and chartist (or noise) traders. The fundamentalist behavior consists in buying when the prices are below and selling when they are above a fundamental value and the chartist behavior combine contagion or herding and optimism and pessimism vision. The traders compare profitability and it is possible to make change between groups. The paper tries to find the probability of transition from different strategies and to determinate of the prices according with the supply and demand.  In the second part, we establish the same problem but now like maximization of a portfolio and we solve with Hamilton-Jacobi-Bellman method.