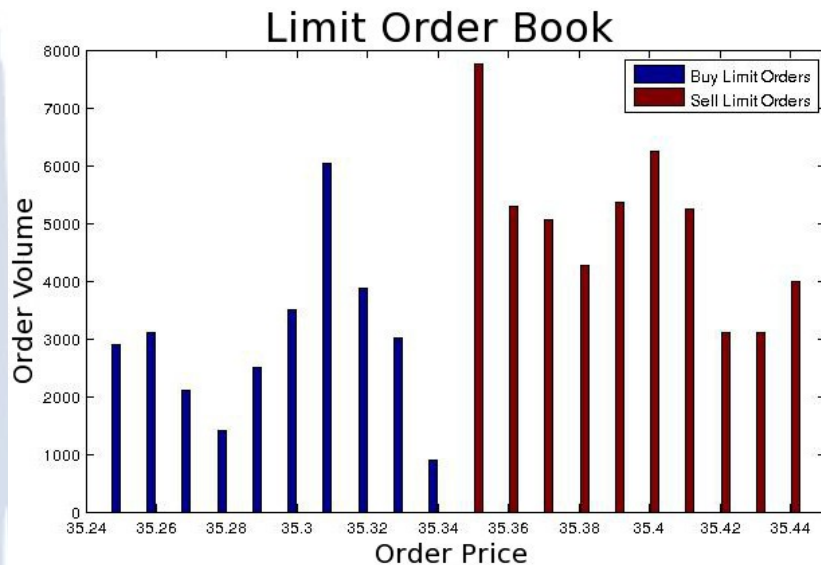


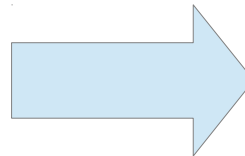
# Optimal Control in Stock Trading

## Statistical Arbitrage in High Frequency Algorithmic Trading

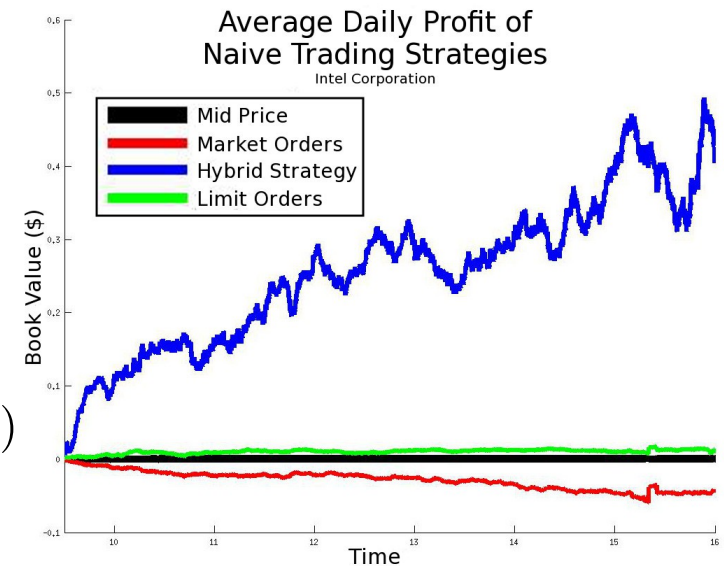
Question: Can limit order book volume imbalance successfully predict price changes?



YES



$$\dot{\$}(t) = f(\$, \text{LOB}, t)$$



Next: Formulate as stochastic control problem and solve for optimal controller.