

# Lecture 6: Efficient Markets

Economics 252, Spring 2008

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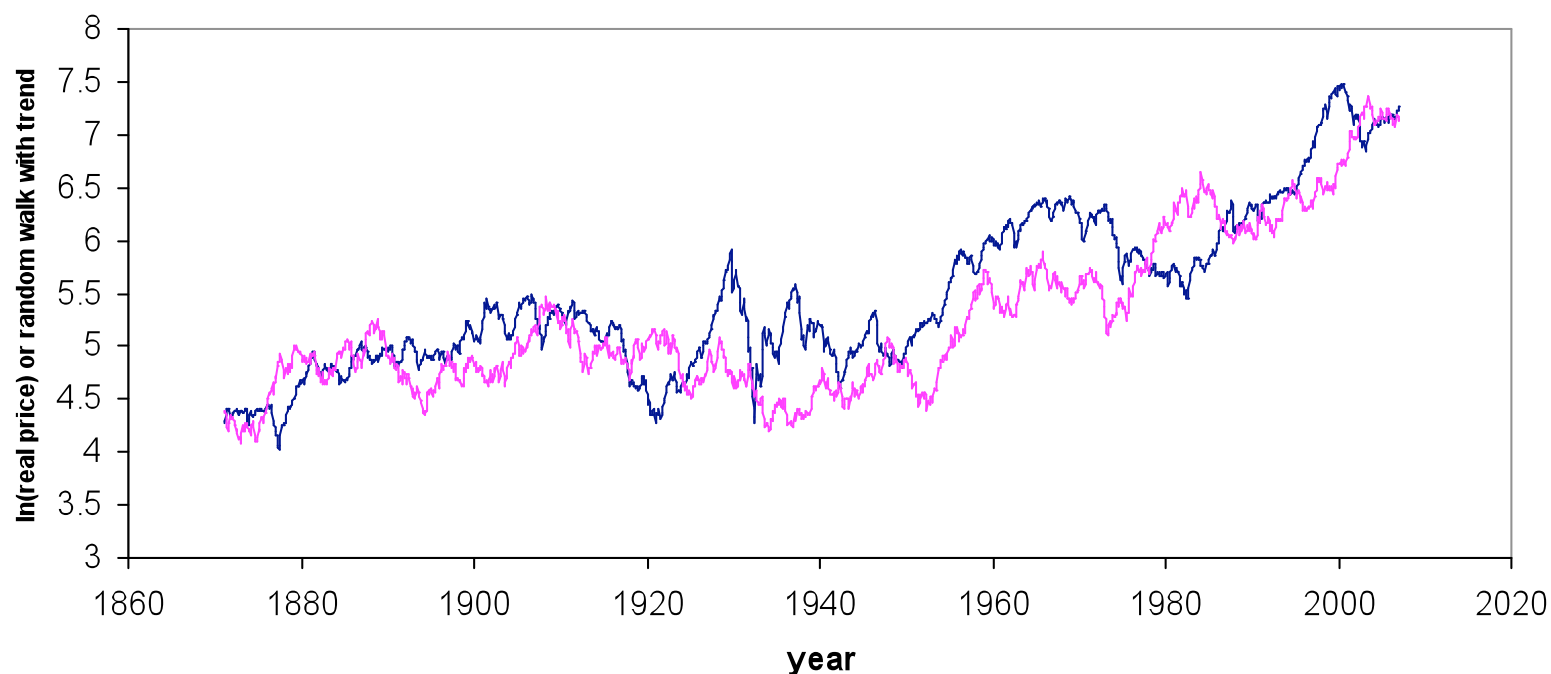
# Price as PDV of Expected Dividends

- If earnings equal dividends and if dividends grow at long-run rate  $g$ , then by growing consol model  $P=E/(r-g)$ ,  $P/E=1/(r-g)$ . (Gordon Model)
- So, efficient markets theory with Gordon model purports to explain why  $P/E$  varies across stocks: different stocks have different  $g$ .

# Random Walk & AR-1 Models

- Random Walk:  $x_t = x_{t-1} + \epsilon_t$
- First-order autoregressive (AR-1) Model:  
 $x_t = 100 + \alpha(x_{t-1} - 100) + \epsilon_t$  Mean reverting (to 100),  $-1 < \alpha < 1$ .
- Random walk as approximate implication of unpredictability of returns
- Similarity of both random walk and AR-1 to actual stock prices

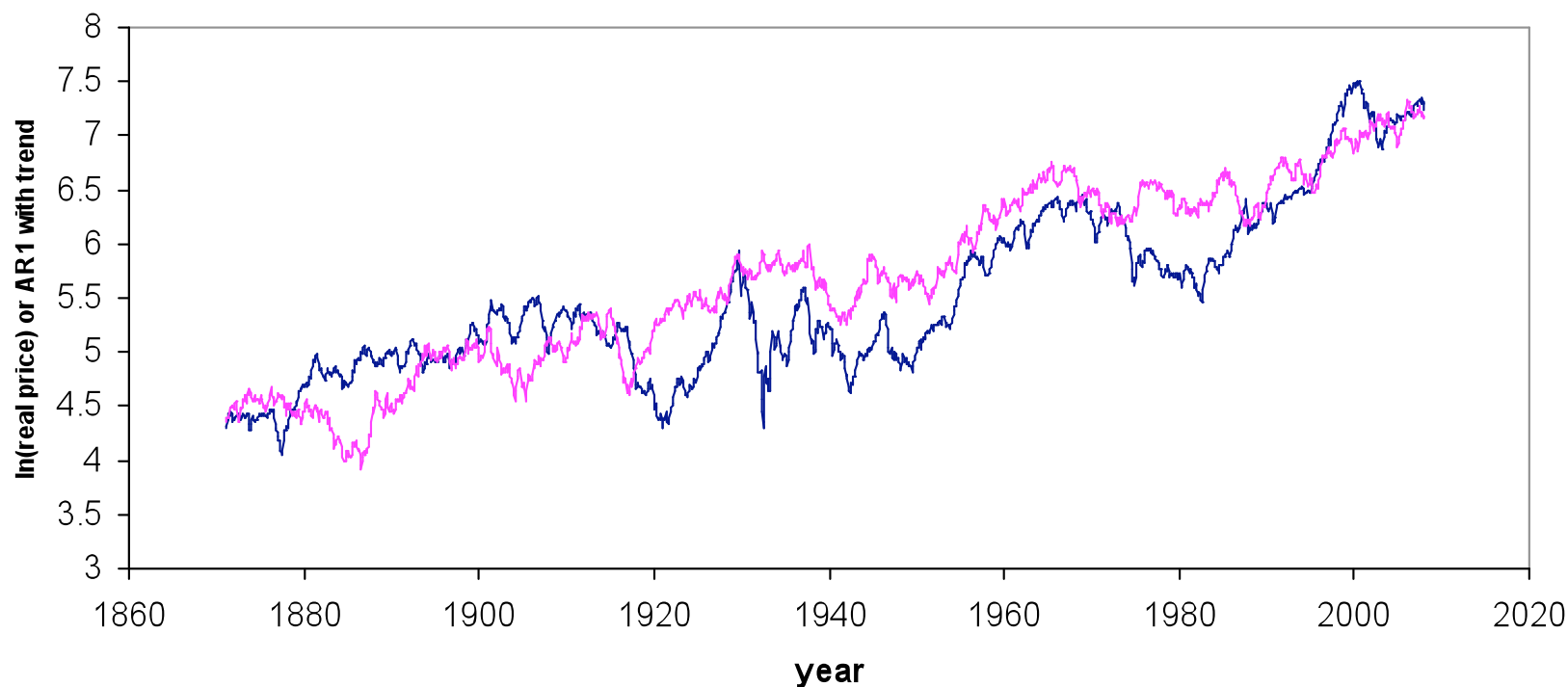
# Actual US Stock Market and Random Walk with Trend



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# Actual US Stock Market & AR-1(=.98) with trend



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