

add  $\beta$   
what means.

add  
transaction  
cost.

## FURTHER DEVELOPMENT OPTIONS FOR BAYESIAN TRACKER

1. more time series, manual tuning
2. automatic maximum likelihood seeker (single series)
3. factorization of series:
  - a. market
  - b. industries
  - c. individual
4. factored series (or otherwise)  
Portfolio optimizer
  - a. sampling approach ✓ Multi Portfolio - Turn caller
  - b. proper treatment of transaction costs
5. simple introduction of transaction penalty in present model;  
tradeoffs with turnover rate
6. leverage; short selling; options; etc.
7. two component coupled: money market, stocks market (need workout of optimizer -- probably Taylor series.)
8. validation of how accurate Taylor series expansion is:
  - a. more terms
  - b. direct (sampling) calculation
9. dynamic likelihood: more weight on recent past; investigate stability of process over different epochs
10. theoretical calculation: relative likelihood of best "reasonable" stationary distribution
11. more complex models -- sampling version of forecaster
12. investigate behavior with frequency of observation (do by dropping subsets)
13. volume term: i.e. measure time in variable units. (down scale faster than up scale!)
14. commodities prices
  - a. option markets
  - b. money markets

15. Research on Fitting to other Statistics (eg  $\langle X_i, X_j \rangle$ )  
autocorrelation

16. Form call "Quality" (compactness)