- Stochastic discount factor M

$$M(z|z_t) = M_t = \frac{M(z)}{M(z_t)}$$

- Pricing
  - Nonzero Prices: three reasons
    1. No arbitrage
    2. Nonzero state probabilities
    3. Nonzero dividends
  - Pricing Kernel m: $m_{t+1} \equiv M_{t+1}/M_t$

$$G$$

- Testing the model
  1. GMM test of the CAPM
  2. "Hidden" CAPM

$$E_t[m_{t+1}(R_{t+1} - R_f)] = \frac{cov_t(R_{m,t+1}, R_{n,t+1})}{V(R_{m,t+1})} E_t[R_{m,t+1} - R_f]$$

  3. This is not true–ignores covariance between β and excess return.

- Macrofinance: Equity Risk Premium
  - Agent's problem:

$$\max_{\theta_t} \sum_t \delta^t E\left(\frac{c_t^\alpha}{\alpha}\right)$$

    subject to their intertemporal budget constraint:

$$\theta_{a,t-1}(P_{a,t} + d_{a,t}) + \theta_{b,t-1} = c_t + \theta_{a,t}P_{a,t} + \theta_{b,t}P_{b,t}$$

  - Euler Equation

$$E\left[\delta\left(\frac{c_{t+1}}{c_t}\right)^{\alpha-1} R_{f,t+1}\right] = 1$$