Quantum Equilibrium-Disequilibrium

Let X_t be a total capitalization of a firm at time t. The discrete-time dynamics is given by:

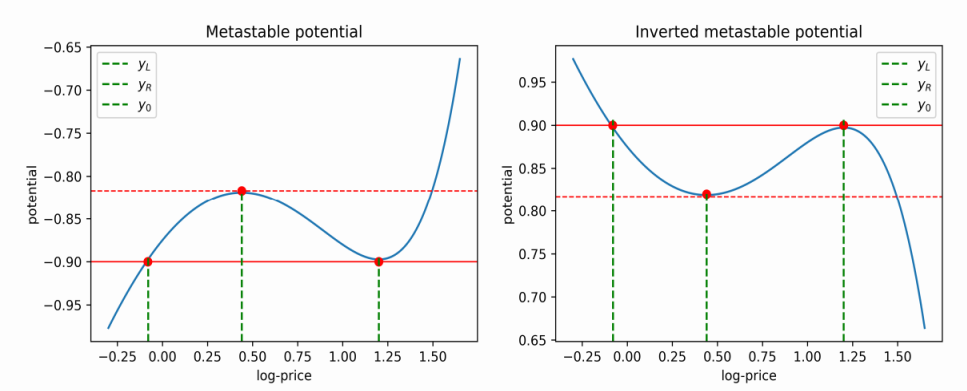
$$X_{t+\Delta t} = \left(1 + r_t \Delta t\right)\left(X_t - cX_t \Delta t + u_t \Delta t\right)$$

$$r_t = r_f + wz_t - \mu u_t + \frac{\sigma}{\sqrt{\Delta t}}\varepsilon_t$$

$$u_t = \phi X_t - \lambda X_t^{\,2}$$

where:

μ	market impact parameter
c	dividend rate
$u_t \Delta t$	new capital injected in the market
$[t, t+\Delta t]$	time interval
$X_t - cX_t \Delta t + u_t \Delta t$	a new capital expression
r_t	growing rate



Further reading: https://arxiv.org/pdf/1808.03607.pdf