

fire-sell assets, triggering liquidity spirals.

Most interestingly, the *stationary distribution* of the economy is bimodal with high density at the extreme points. Most of the time the economy stays close to its attracting point, the stochastic steady state. Experts have a capital cushion and volatility is contained. For lower  $\eta$  values experts feel more constrained, the system becomes less stable as the volatility shoots up. The excursions below the steady state are characterized by high uncertainty, and occasionally may take the system very far below the steady state from which it takes time to escape again. In other words, without government intervention the economy is subject to potentially long-lasting break-downs, i.e. systemic risk.

It is worthwhile to note the difference to the traditional log-linearization approach which determines the steady state by focusing on the limiting case in which the aggregate exogenous risk  $\sigma$  goes to zero. A single unanticipated (zero probability) shock upsets the log-linearized system that subsequently slowly drifts back to the steady state. In BruSan2010, setting the exogenous risk  $\sigma$  to zero also alters experts behavior. In particular, they would not accumulate any net worth and the steady state would be deterministic at  $\eta^* \rightarrow 0$ . Also, one might argue that log-linearized solutions can capture amplification effects of various magnitudes by placing the steady state in a particular part of the state space. However, these experiments may be misleading as they force the system to behave in a completely different way. The steady state can be “moved” by a choice of an *exogenous* parameter such as exogenous drainage of expert net worth in BGG. With *endogenous* payouts and a setting in which agents anticipate adverse shocks, the steady state naturally falls in the relatively unconstrained region where amplification is low, and amplification below the steady state is high.

In terms of *asset pricing implications*, asset prices exhibit fat tails due to endogenous systemic risk rather than exogenously assumed rare events. In the cross-section, endogenous risk and excess volatility created through the amplification loop make asset prices significantly more correlated in crises than in normal times. Note that the stochastic discount factor (SDF) is given by  $e^{-\rho s} \theta_{t+s} / \theta_t$ . [He and Krishnamurthy \(2010b\)](#) derive similar asset pricing implication. They derive the full dynamics of a continuous time endowment economy with limited participation. That is, only experts can hold capital  $k$ , while households can only buy outside equity issued by financial experts. Like in BruSan10, financial experts face an equity constraint due to moral hazard problems. When experts are well capitalized, risk premia are determined by aggregate risk aversion since the outside equity constraint does not bind. However, after a severe adverse