

tenous, i.e. extremely short-term, while physical capital is long-term with a depreciation rate of  $\delta$ . As argued in Brunnermeier, Gorton, and Krishnamurthy (2011), focusing on maturity mismatch is however misleading since one also has to take into account that physical capital can be reversed back to consumption goods or redeployed. Like in BGG, the function  $\Phi(\iota_t)$  captures the “*technological/physical liquidity*” and describes to what extent capital goods can be reverted back to consumption goods through negative investment  $\iota_t$ . Like in KM97 experts can also redeploy physical capital and “fire-sell” it to less productive households at a price  $q(\eta)$ . The price impact, “*market liquidity*”, in BruSan10’s competitive setting is only driven by shifts in the aggregate state variable. While the liquidity on the asset side of experts’ balance sheets are driven by technological and market liquidity, “*funding liquidity*” on the liability side of the balance sheet is comprised of very short-term debt or limited equity funding.

In equilibrium, experts fire-sell assets after a sufficiently large adverse shock.<sup>12</sup> That is, only a fraction  $\psi(\eta)$  of capital is held by experts and this fraction is declining as  $\eta$  drops. The price volatility and the volatility of  $\eta$  are determined by how feedback loops contribute to endogenous risk,

$$\sigma_t^\eta = \frac{\frac{\psi_t \tilde{\varphi} q_t}{\eta_t} - 1}{1 - \psi_t \tilde{\varphi} q'(\eta_t)} \sigma \quad \text{and} \quad \sigma_t^q = \frac{q'(\eta_t)}{q_t} \sigma_t^\eta \eta_t. \quad (20)$$

The *numerator* of  $\sigma_t^\eta$ ,  $\psi_t \tilde{\varphi} q_t / \eta_t - 1$ , is the experts’ debt-to-equity ratio. When  $q'(\eta) = 0$ , the denominator is one and experts’ net worth is magnified only through leverage. This case arises with perfect technological liquidity, i.e. when  $\Phi(\iota)$  is linear and experts can costlessly disinvest capital (instead of fire-selling assets). On the other hand, when  $q'(\eta) > 0$ , then a drop in  $\eta_t$  by  $\sigma(\psi_t \tilde{\varphi} q_t - \eta_t) dZ_t$ , causes the price  $q_t$  to drop by  $q'(\eta_t) \sigma(\psi_t \tilde{\varphi} q_t - \eta_t) dZ_t$ , leading to further deterioration of the net worth of experts, which feeds back into prices, and so on. The amplification effect is nonlinear, which is captured by  $1 - \psi_t \tilde{\varphi} q'(\eta_t)$  in the *denominator* of  $\sigma_t^\eta$  (and if  $q'(\eta)$  were even greater than  $1/(\psi_t \tilde{\varphi})$ , then the feedback effect would be completely unstable, leading to infinite volatility). Equation (20) also shows that the system behaves very differently in normal times compared to crisis times. Since  $q'(\eta^*) = 0$ , there is no “price amplification” at the “stochastic steady state”. Close to  $\eta^*$  experts are relatively unconstrained and adverse shocks are absorbed through adjustments in bonus payouts, while in crisis times they

---

<sup>12</sup>Rampini and Viswanathan (2011) also shares the feature that highly productive firms go closer to their debt capacity and hence are harder hit in a downturns.