

– between the technological and market liquidity on the asset side of the balance sheet and the funding liquidity on the liability side of the balance sheet.

The ex-post macroeconomic implications of an adverse shock amplified through liquidity spirals also affect the ex-ante *demand for liquid assets*. In anticipation of potential adverse shocks, market participants have the desire to hold claims with high market liquidity or to preserve high funding liquidity. When individuals face funding constraints, simply the desire to smooth consumption makes it optimal for them to hold a “liquidity buffer.” This is the case even in a setting without aggregate risk, for example when individuals only face (uninsurable) idiosyncratic shocks. Holding liquid assets, which can be sold with limited price impact, allows individuals to self-insure against their idiosyncratic shock when they hit their borrowing constraint. As a consequence, assets that pay off in all states, like a risk-free bond, are very desirable and trade at a (liquidity) premium. In other words, the risk-free rate is very low and liquid assets are “bubbly.” Indeed, fiat money is one of these assets that provides such a liquidity service. It is a store of value despite the fact that it is not a claim on any real cash flow.

In a more general setting with aggregate shocks (on top of idiosyncratic shocks) the desire to hold liquid assets is even stronger, especially when there is an aggregate liquidity mismatch if, e.g. the specificity of physical capital is very high (low market liquidity) and capital investments are irreversible (low technological liquidity). At times when exogenous risk increases, these forces strengthen and there will be a *flight to quality and liquidity*. With higher volatility individuals are more likely to hit their borrowing constraints and hence they demand more liquid assets for precautionary reasons.

Importantly, the positive price distortions for liquid assets leads to a *constrained inefficient* outcome. That is, a social planner who faces the same constraints as the markets can implement a Pareto superior allocation. The (constrained) market inefficiency is driven by pecuniary externalities and due to the fact that each individual takes prices as given. This is a strong message as it overturns the standard welfare theorems. In certain environments the issuance of additional government bonds can even lead to a “*crowding-in effect*” and be welfare enhancing. As (idiosyncratic) uncertainty increases, the welfare improving effect of higher government debt also increases. Note that unlike the standard (new) Keynesian argument this reasoning does not rely on price stickiness and a zero lower bound on nominal interest rates.

The role of *financial institutions* is to mitigate some of these financial frictions. For example, banks can insure households or firms against sudden idiosyncratic shocks mentioned above by diversifying across them. However, by investing in long-term projects