Shortening of maturities would be a natural counterpart to the lengthening intermediation chains. In order for each link in the chain to be a profitable leveraged transaction, the funding leg of the transaction must be at a lower interest rate. When the yield curve is upward-sloping, this would entail funding with shorter and shorter maturities at each step in the chain. The prevalence of the overnight repo as the dominant funding choice for securities firms before the current crisis can be understood in this context. The use of ultra-short term debt is part and parcel of long intermediation chains.

The importance of the short-term interest rate in determining the size and fragility of the financial system can be seen from the above line of reasoning. A period of sustained short-term interest rates (with the assurance of continued low short rates by the central bank) is a highly favorable environment for the taking on of such short-term bets. Adrian and Shin (2008) shows that the Fed Funds rate is an important determinant of the growth of securities firms' balance sheets, which in turn has significant effects on the real economy. Thus, there is a monetary policy angle to the increasing length of intermediation chains.

2.2 Bust scenario

Now consider the reversal of the boom scenario whereby perceptions of heightened risk raise Value at Risk and induce deleveraging of the financial system, leading to lower $\{\lambda_i\}$. In addition, falls in asset prices and possible credit losses eat into the marked-to-market equity levels $\{e_i\}$. This is a double whammy for the financial system as a whole, since in order for the first term on the right hand side of equation (8) to stay roughly constant, there has to be substantial *increases* in $\{z_i\}$. The increase in z_i means that a greater proportion of the funding comes from outside claimholders - that is, the funding that banks had granted to each other must now be withdrawn. This is a classic run scenario where banks run on other banks. The runs on Northern Rock, Bear Stearns and Lehman Brothers are all instances of such a run.

The direct manifestation of a run of this type can be given a simpler depiction in the following two bank example, taken from Morris and Shin (2008). Bank 1 has borrowed from Bank 2. Bank 2 has other assets, as well as its loans to Bank 1. Suppose that Bank 2 suffers credit losses on these other loans, but that the creditworthiness of Bank 1 remains unchanged. The loss suffered by Bank 2 depletes its equity capital. In the face of such a shock, a prudent course of action by Bank 2 is to reduce its overall exposure, so that its asset book is trimmed to a size that can be carried comfortably with the smaller equity capital.

From the point of view of Bank 2, the imperative is to reduce its overall lending, including its lending to Bank 1. By reducing its lending, Bank 2 achieves its micro-prudential objective of reducing its risk exposure. However, from Bank 1's perspective, the reduction of lending by Bank 2 is a withdrawal of funding. Unless Bank 1 can find alternative sources of funding, it will have to reduce its own asset holdings, either by curtailing its lending, or by selling marketable assets.

In the case where we have the combination of (i) Bank 1 not having alternative sources of funding, (ii) the reduction in Bank 2's lending being severe, and (iii) Bank 1's assets being so illiquid that they can only be sold at fire sale prices, then the withdrawal of lending by Bank 2 will feel like a run from the point of view of Bank 1. In other words, a prudent shedding of exposures

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[3] Architecturally, the closest example would be the Sutyagin house in Archangel, Russia, reported in the Daily Telegraph of March 7th, 2007. The 13 floor 144 feet wooden structure is described as "a jumble of planking" and the "eighth wonder of the world". A Google image search for "Sutyagin House" yields dozens of photos of the structure.