The dark and the bright side of liquidity risks: Evidence from open-end real estate funds in Germany

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During the 6-month period from December 2005 to June 2006, the German Real Estate mutual fund industry suffered an unprecedented liquidity crisis. We investigate to what extend competing theories of liquidity crises help explain this event. Our results show that fundamental factors not only mattered for the liquidity outflow in normal times but also during the crisis. However, strategic complementarities accelerated the withdrawals during the crisis suggesting that pure panic behavior contributed substantially to the massive outflows. Thus higher liquidity buffers might help mitigating these tail events. Furthermore, we find that funds with a lower fraction of shares held by institutional investors suffered from less significant outflows suggesting that a segmentation of funds for different investor groups might help mitigate panics.

\section*{1. Introduction}

In the academic literature there are two opposing views on the origin of financial crises, with two contrasting perceptions of liquidity risks. According to the fundamental view, banking crises are
triggered by low asset returns. Responding to bad performance by massive withdrawals, depositors exert control over a bank’s management. Therefore, this view emphasizes the bright side of liquidity mismatch as an important incentive device. In contrast, following the panic view, crises of financial institutions result from strategic complementarities that arise from the liquidity mismatch. If the assets of a financial institution are less liquid than their liabilities, investors prefer to withdraw their funds before assets mature (or refuse to rollover short-term claims) if they expect other investors to do the same. Those that do not withdraw bear the liquidation costs of the illiquid asset. Thus liquidity risk also has a dark side. It can generate a self-reinforcing momentum in banking crises that might lead to the failure of solvent banks. Clearly these two effects are not mutually exclusive. On the contrary, during periods of low returns depositors become more worried about the behavior of others. Consequently, while performance should generally drive the flow of funds also in tranquil periods, panic behavior is perceived as an important amplifier in generating a full-fledged crisis.

In this paper, we try to disentangle the relative importance of these two effects by studying their respective explanatory power for a crisis that hit the German open end real estate fund industry at the end of 2005 and in early 2006. This case is particularly well suited for such an analysis for several reasons. First, open end real estate funds provide a clear and relatively easy to measure liquidity transformation. They issue shares which are redeemed at the book-value of the assets minus outstanding debt. The largest part of their assets is illiquid commercial real estate while the rest is held in liquidity. Thus balance sheet information on a fund-by-fund basis permits us to easily measure the liquidity transformation of each fund. Second, available data on outflows at the fund level allow us to capture investors’ withdrawals. With the monthly reported issue and redemption prices we can directly derive investors’ returns on a high frequency. Third, open end real estate funds are only modestly regulated. Thus the influence of the institutional background is easy to grasp. Moreover, regulation did not change prior or during this crisis. Finally, given these characteristics open end real estate funds have the key features of those financial intermediaries that are usually considered banks in the different theories of liquidity transformation. Thus unlike the real world banking sector with its complex asset and capital structure and its comprehensive regulation and government intervention open end real estate funds provide an excellent laboratory to study the competing theories of banking crises.

We test for the incentive effect of liquidity transformation by assessing the extent to which outflows respond to past performance. According to the ‘bright side’ of liquidity transformation investors incentivize fund managers by withdrawing funds if the fund does not perform. Thus fundamentals should govern withdrawals and differences in lagged returns between funds should explain the cross sectional variation in outflows. Our results show that past performance indeed drives investors’ withdrawal decisions. Over the entire sample period we find a performance sensitivity of netflows which is comparable to those found for US equity mutual funds. An increase in performance by one percentage point reduces other things equal a fund’s netflows in the following month by about 10 basis points. Interestingly, we find that funds with a lower return not only experience higher outflows during the tranquil period before the crisis, but particularly in the crisis performance differences explain a large part of the differences in outflows across funds.

However, during the crisis liquidity transformation also shows its ‘dark side’ and strategic complementarities generate a coordination failure. The fear from the externalities of others’ withdrawals leads to excessive outflows and potentially even to the closure of otherwise well performing funds. We measure the extent to which considerations about the withdrawal decisions of others contribute

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1 Theoretical models taking this perspective are, for instance, Gorton (1985) and Allen and Gale (1998). Empirical studies suggesting that banking crises are driven by business cycle downturns are Gorton (1998) and Calomiris and Mason (1997).
2 This argument is modeled in Calomiris and Kahn (1991) and Diamond and Rajan (2001).
3 This view follows the classical studies by Bryant (1980) and Diamond and Dybvig (1983).
4 See, for instance, Goldstein and Pauzner (2005) for a model making this point.
5 For a recent study that attempts to assess the disciplinary role of demand deposits in banking, see Martinez Peria and Schmukler (2001).
6 See, for instance, Ippolito (1992), Gruber (1996) and Sirri and Tufano (1998). It should be noted, however, that their empirical analysis differs along a number of dimensions from the one employed in the present paper. Specifically, this literature focuses net flows while we mainly analyse gross outflows. Additionally, point estimators differ due to different observation frequency, performance measures and non-linearities.
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