Liquidity Transformation in Asset Management: Evidence from the Cash Holdings of Mutual Funds
Sergey Chernenko, Purdue University
Adi Sunderam, Harvard University and NBER
Executive Summary

Liquidity transformation—the creation of liquid claims that are backed by illiquid assets—is a key function of many financial intermediaries. Banks are the quintessential example. They provide investors with highly liquid deposits while financing illiquid, information-intensive loans.

Open-end mutual funds provide liquidity services similar to banks and shadow banks. Though they may invest in relatively illiquid assets such as corporate bonds, bank loans, and emerging market stocks, they have liquid liabilities. Specifically, mutual funds allow investors to redeem any number of shares at the fund's end-of-day net asset value. In contrast, investors who directly hold the underlying investments bear liquidation costs when they sell those assets.

There has been vigorous debate about whether liquidity transformation by asset managers can cause financial stability problems. A key empirical challenge in this debate is that it is difficult to measure liquidity transformation. For banks and shadow banks, the maturity mismatch between assets and liabilities is a good measure of liquidity transformation. For asset managers, however, some price impact can be passed on to investors since claims are not fixed in value. But asset managers still perform some amount of liquidity transformation because their ability to pool trades and space transactions over time dampens the relationship between quantity and price facing investors who are planning to trade.

In this paper, Sergey Chernenko and Adi Sunderam use the cash holdings of mutual funds that invest in equities and long-term corporate bonds as a window into the liquidity transformation activities of asset managers. Their key insight is that the way mutual funds manage their own liquidity to provide the benefits of open-ending to investors is a measure of how much liquidity transformation funds are performing. A fund acting as a pure pass-through, simply buying and selling the underlying assets on behalf of its investors, has little need for cash holdings to manage its liquidity. In contrast, a fund performing substantial liquidity transformation will seek to use cash holdings to mitigate the costs associated with providing investors with claims that are more liquid than the underlying assets.

The researchers present four main findings, all showing that mutual funds do not simply act as pass-throughs but perform a significant amount of liquidity transformation.

First, rather than dealing in equities and bonds, mutual funds use cash to accommodate inflows and outflows. The magnitudes are economically significant. Out of each dollar of inflows or outflows in a given month, 23 to 33 cents is accommodated through changes in cash rather than through trading in the fund's portfolio securities. This impact of flows on cash balances lasts for multiple months.

Second, asset liquidity affects the propensity of funds to use cash holdings to manage fund flows. In the

cross section, a one standard deviation increase in asset illiquidity is associated with about a 20 percent increase in the fraction of fund flows accommodated through changes in cash. The researchers find similar evidence in the time series. During periods of low aggregate market liquidity, funds accommodate a larger fraction of fund flows with cash. These results would not obtain if funds were simply a veil, trading on behalf of their investors. Instead, the results are consistent with the idea that mutual funds perform a significant amount of liquidity transformation, with their cash holdings playing a critical role.

Third, funds that perform more liquidity transformation hold significantly more cash. Asset illiquidity, the volatility of fund flows, and their interaction are the key determinants of how much liquidity transformation a given fund engages in, and the research finds that all three variables are strongly related to cash holdings. Because they use cash for liquidity management purposes, mutual funds hold large aggregate amounts of cash. In the study sample, mutual funds hold $600 billion of cash; the IMF estimates asset managers as a whole hold about $2 trillion of cash.

Finally, the researchers provide two pieces of suggestive evidence that mutual funds do not hold enough cash to fully mitigate any price impact externalities that they may exert on other market participants. They show that funds that hold a larger fraction of the outstanding amount of the assets they invest in tend to hold more cash, which is consistent with such funds more fully internalizing the price impact of their trading in the securities they hold. They also find that at the fund-family level, funds with holdings that overlap significantly those of other funds in their family hold more cash, consistent with the idea that these funds are more cautious about exerting price impact when it may adversely affect other funds in the family.