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Discussion

Comment on "Redemption risk and cash hoarding by asset managers" by Morris, Shim, and Shin

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1. Introduction

The paper by Morris et al. (2017), included in this volume, provides an interesting contribution to the emerging literature on financial fragility in the asset management industry. Previous papers have shown – theoretically and empirically – that open-end mutual funds provide liquidity transformation services to their investors, which creates potential for run-like behavior. Others have analyzed how funds manage their liquidity to address this problem to some extent. The authors here show striking evidence that funds that invest in bonds globally seem to manage their liquidity in a way that is opposite to what is commonly perceived. Instead of accommodating the redemptions with cash, they sell assets excessively following redemptions and increase their cash buffers. The authors provide a model in the global-games tradition to explain this behavior and note that managers hoard cash out of a precautionary motive.

In this short comment, I start by reviewing the general issues with respect to liquidity transformation and fragility in open-end mutual funds (Section 2). I then discuss the role of liquidity management, describing the contribution of the paper to the previous literature (Section 3). Finally, I provide several comments trying to explain the results and draw implications from them, and also discuss questions for future research (Section 4). Section 5 concludes.

2. Liquidity transformation and fragility in mutual funds

The process of liquidity transformation is known to generate financial fragility. Traditionally, this process has been examined in the context of banks. By holding illiquid assets and promising their investors access to liquid claims, banks expose themselves to the risk of a run by investors. In a run, investors all want to withdraw at the same time as a result of strategic complementarities: The expected withdrawals by some investors decrease the amount left to investors who keep the money in the bank and increase the incentive of each individual investor to withdraw. Liquidity transformation can then make runs a phenomenon of self-fulfilling beliefs, either resulting in multiple equilibria (Diamond and Dybvig, 1983) or in an amplified reaction of equilibrium outcomes to fundamentals (Goldstein and Pauzner, 2005).

More recently, liquidity transformation expanded to other types of institutions beyond traditional banks. This has led to greater potential for fragility in the financial system. In this context, there is growing interest in the workings of open-end mutual funds and their effect on market stability. Mutual funds are different from banks in many respects. In particular,

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investors in mutual funds are not promised a fixed amount when they withdraw; they know that the amount they can take out of the fund varies with market prices. This is known as the floating net asset value (NAV) system. The floating NAV should reduce the extent of liquidity transformation that leads to potential runs. However, as previous research pointed out, despite this feature, mutual funds appear to be in the business of liquidity transformation with potential implications for fragility. Why would this be the case?

In a recent blog post, Stephen Cecchetti and Kermit Schoenholtz report that Relative to GDP, the holdings of open-end mutual funds investing in illiquid assets in the US have climbed from ½ percent in 1980 to nearly 30 percent today[1]. As argued by Chen et al. (2010), open-end mutual funds investing in illiquid assets provide liquidity transformation to their investors and expose themselves to fragility. This is because they allow investors to redeem on a daily basis, and, upon redemption, pay investors based on the last updated NAV, while conducting the trades in later days. As a result, the costs of liquidation are often imposed on investors who stay in the fund, generating the strategic complementarities in redemption decisions that lead to fragility. Chen et al. (2010) show that, as a result of this force, the sensitivity of outflows to bad performance in equity mutual funds holding illiquid assets is higher than in those that hold liquid assets. This is an indication of fragility that is generated by the liquidity transformation provided by these funds.

More recently, Goldstein et al. (2017) show that this force is much stronger in mutual funds investing in corporate bonds, which are known to be a much more illiquid class of assets. They show that in these funds the well-known convex flow-performance relationship, vastly documented in equity mutual funds, ceases to hold and turns into a concave shape, whereby outflows are more sensitive to bad performance than inflows are to good performance. The downside sensitivity is further amplified for corporate-bond funds holding less liquidity and during times when the market as a whole is more illiquid. Again, this demonstrates that illiquidity on the asset side of mutual funds, coupled with the demandable claims they offer, create fragility by amplifying redemptions upon bad news (in this case, bad past performance). Such amplifications might be a concern for regulators in case there are externalities from flows to market prices (as shown in Coval and Stafford, 2007, among others) and from market prices to the macroeconomy (as shown in Gilchrist and Zakrajsek, 2012, among others).

The idea that mutual funds holding illiquid assets pose a threat to market stability indeed led regulators around the world to propose new guidelines for liquidity management, disclosure, and redemption practices in open-end mutual funds. Examples include the recent publications by the US Securities and Exchange Commission (2016)[2], the Financial Stability Board (2017)[3], and the Financial Conduct Authority in the UK (2017)[4]. Some of the rules being considered involve requiring mutual funds to hold certain amount of liquidity to protect them against redemptions and reduce the strength of strategic complementarities among investors, and changing the pricing formula so that investors taking the money out will internalize the externalities they impose on remaining investors. The practice of swing pricing is thought to have this potential stabilizing effect, by reducing the amount investors get when they take the money out of the fund on days of massive redemptions.

3. Liquidity management by mutual funds

While mutual funds holding illiquid assets engage in liquidity transformation, they can alleviate potential fragility by conducting their own liquidity management. Hence, understanding the policies employed by funds with regard to liquidity management is of first-order importance, and this is the broad agenda that the current paper by Morris et al. (2017) contributes to. This paper uncovers a very surprising result that suggests that funds might not conduct their liquidity management in a way that promotes market stability. But before describing their main finding and its implications, let me briefly mention a couple of other recent papers that showed different results.

In a study of US equity and corporate bond funds, Chernenko and Sunderam (2016) show that mutual funds investing in illiquid assets tend to hold a significant buffer of cash and that they use this cash disproportionately to accommodate large redemptions. That is, in case of large redemptions, mutual funds avoid selling much of the illiquid asset but instead pay their investors with cash, trying to mitigate the force of fire sales and reduce fragility. Jiang et al. (2016) study a smaller sample of only US corporate-bond funds, but observe their entire holdings. They find that during times with lower uncertainty, funds tend to behave in a way consistent with the evidence in Chernenko and Sunderam (2016) and reduce their holdings of liquid assets to meet investor redemptions. But, in times of heightened uncertainty, funds liquidate assets much more proportionally across asset classes, maintaining portfolio liquidity.

While the above two papers find evidence that is overall consistent with the idea that funds use liquidity buffers to meet redemptions and alleviate the price pressure that redemptions can impose, the paper by Morris et al. (2017) finds evidence that is quite distinct. Investigating bond funds that invest globally, they find that mutual funds tend to hoard cash in response to redemptions rather than use cash to meet redemptions. As a rule of thumb, for every 100 dollars' worth of sales due to investor redemptions, there is an additional 10 dollars' worth of discretionary sales leading to 10 dollars of cash hoarding. The pattern is stronger for bond funds that invest in more illiquid assets.

[1] See: http://www.moneyandbanking.com/commentary/2017/2/20/liquidity-transformation-and-open-end-funds.
[2] See: https://www.sec.gov/news/pressrelease/2016-215.html.
[3] See: http://www.fsb.org/2017/01/policy-recommendations-to-address-structural-vulnerabilities-from-asset-management-activities/.
[4] See: https://www.fca.org.uk/publication/discussion/dp17-01.pdf.

This result is quite striking and goes against the common belief, supported by other evidence, that mutual funds use cash to reduce the impact of redemptions. It seems here that mutual funds go with the flow and amplify it, by selling more than they need to and hence increasing the pressure on the market beyond what is necessary due to redemptions. This might imply that the actions of mutual-fund managers could amplify market stress on top of investors' actions. This could have important implications for our understanding of mutual funds' contribution to financial fragility and the steps that regulators should consider.

4. Potential explanations and implications

Given that these results are quite surprising and stand in contrast to some other results in the literature, we need to think carefully about potential explanations and implications. I will discuss a few key points below along with thoughts for what we still need to know and how future research may help.

First, the result that funds hoard cash in response to redemptions comes out of the sample used in Morris et al. (2017), which is a unique sample of bond funds that invest globally. These funds are quite different from those studied by Chernenko and Sunderam (2016) and Jiang et al. (2016) which are US focused. The sample includes some types of funds that are particularly illiquid such as emerging market economy local currency sovereign bonds funds and emerging market economy corporate bonds funds. The question then is how broad the phenomenon described here is and whether it is observed in other classes of funds as well. More research is needed to answer this question, which is crucial for assessing the importance of this phenomenon and the extent to which policymakers should worry about it.

Second, we need more research – theoretical and empirical – to understand the mechanisms behind funds' cash hoarding in response to redemptions. The authors present a model that contains a possible explanation related to precautionary behavior by fund managers. If current redemptions are indication of future redemptions, then in the face of redemptions, fund managers would like to hoard more cash to be better prepared for future redemptions. But, do we know that this is the mechanism behind the empirical results? More direct evidence of precautionary behavior would help. There are other explanations that could rationalize what the authors find in the data. For example, maybe fund managers and investors are getting negative signals about the asset class at the same time, leading the former to sell assets and the latter to redeem shares from the fund. Then, there is no active response of fund managers' sales to redemptions but just correlation based on similar information. The authors argue against this explanation, but it was not clear to me that it should be so easily dismissed.

Third, suppose that precautionary behavior is indeed driving the cash hoarding by mutual funds following redemptions, it is still not clear whether this is good or bad for financial stability. On the one hand, when the fund hoards more cash today in response to redemptions, this implies greater selling, which might impose greater price pressure and harm stability. But, on the other hand, the hoarding today, according to this hypothesis, is meant to relieve the need to sell in the future and reduce market pressure then, enhancing stability. So, which effect dominates? What is the overall effect on financial stability? It all depends on whether managers are over-reacting (relative to what investors and/or regulators would want) or not, which would be a function of the objective function of fund managers relative to that of investors and/or regulators. This should depend on the compensation of the fund manager, how it depends on his performance and the performance of other funds, and so on. These are complicated issues that call for more research. A recent theory paper by Zeng (2017) provides some nice analysis of dynamic liquidity management in mutual funds, and its implications for fragility, demonstrating how nuanced these effects are.

Fourth, the authors link hoarding by mutual funds to the illiquidity of the underlying asset, showing empirically that hoarding is greater when the illiquidity is higher. But, from a theoretical perspective, one could think that both effects could arise. On the one hand, higher illiquidity implies that selling in the future will be more costly, and so it increases the incentive to hoard cash today when higher redemptions are expected in the future. On the other hand, higher illiquidity implies that selling today is more costly, and so it decreases the incentive to sell today and hoard cash. Overall, it seems to me that hoarding should be linked to expected changes in illiquidity, and not necessarily to the overall level of illiquidity. These expected changes in illiquidity are more difficult to pin down empirically.

5. Conclusion

The evidence provided in this paper, that for some very illiquid mutual funds cash hoarding is the usual behavior following redemptions, is a very interesting addition to the growing literature on liquidity and mutual funds. The theoretical explanation, involving precautionary motive in anticipation of future redemptions, is also compelling. In my remarks, I outlined four different challenges that call for more research, trying to understand how broad this phenomenon is and what its theoretical underpinnings and implications for market fragility are.

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