On the International Transmission of Shocks:
Micro-Evidence from Mutual Fund Portfolios

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Raddatz and **Schmukler** use a micro-level dataset on international mutual funds to shed new light on how investors and managers react to shocks and might help to transmit them across countries. International mutual funds are particularly useful because they enable one to separately analyze: 1) injections/redemptions, driven by the underlying investors; 2) fund portfolios or country weights, which are at the sole discretion of managers; and 3) their interactions (how investors monitor managers). The main data consist of portfolio weights and assets invested in each country around the world for 1,076 equity and bond mutual funds on a monthly basis during 15 years, January 1996 to November 2010. With the assembled dataset, the authors study the contribution of the underlying investors and managers to the transmission of shocks and crises, with special attention to the 2008 global financial crisis.

Their main results can be summarized as follows: mutual fund assets fluctuate substantially and pro-cyclically over time. Both the underlying investors and the managers are behind these movements, retrenching from countries in bad times and investing more in good times. In the case of the underlying investors, the wealth effects (driven by shocks at home) seem to have a direct impact on how much they invest in other countries. When shocks are correlated across countries, as occurred during the global crisis, they do not act as deep-pocket international investors buying assets abroad at fire-sale prices. The investor behavior exerts pressure on managers, who

need to react to this pressure as well as to shocks to returns (or valuation effects). In the short run, managers allow shocks to returns to pass-through to country weights, with the latter changing substantially over time. Over the long run, weights deviate from the pass-through effects. While during normal times managers do not allow the pass-through to be complete (in relative terms, they reallocate a small fraction to countries that are doing badly), they do behave pro-cyclically during crises, moving away from countries experiencing turmoil. This pro-cyclicality is observed particularly in equity funds. Managers of bond funds hold a larger cash cushion, which allows them to better absorb shocks. The behavior of managers and investors has a direct effect on capital flows to countries around the world. In sum, neither managers nor investors seem to be exploiting potential long-term arbitrage opportunities by being contrarian, especially during crises, and exerting a stabilizing role. Instead, they seem to amplify crises and transmit shocks across countries. The global crisis was a notable example of this type of behavior.

The findings in this paper suggest that in a world where investors discipline managers through injections and redemptions, and where they suffer shocks, managers of open-ended funds might have difficulties taking advantage of long-term arbitrage opportunities and reacting counter-cyclically, for example by buying assets internationally at fire-sale prices. Therefore, the evidence is not consistent with international deep-pocket investors (mutual funds in this case) playing a stabilizing role. To the contrary, these investors appear fickle.

Regarding the difference between debt and equity, the results are not unique to demandable debt, where the need to get out first is more imperative. Pro-cyclicality

occurs even in equity funds, for which prices adjust instantaneously, suggesting that limited information by investors, and/or other factors, need to be playing an important role. While in equity funds cash is used pro-cyclically, being accumulated during crises, in bond funds cash is used more as a buffer, reducing the impact of redemptions on manager reallocations. This could suggest that managers have more difficulty buying and selling assets in markets that might be more illiquid, and thus use more cash to weather the shocks they face. The results also suggest that, when there is a shock in a country where funds invest, equity funds tend to amplify the shock by acting pro-cyclically, while bond funds might help transmit shocks across countries by acting in relative terms counter-cyclically in that country, generating contagion effects. However, when the shock hits the country where funds are domiciled, both bond and equity funds reduce their investments abroad, implying that wealth effects are large.

These findings also have important implications for the policy discussion. Some proposals suggest a shift from banks to a mutual fund model to avoid runs and contagion effects. This paper shows that this shift will not necessarily solve the problem that banks entail and that runs and contagion are possible even in equity funds. Moreover, the findings suggest that idiosyncratic risk and market discipline play only a limited role during crises and, thus, regulation based on those pillars would not entirely isolate financial systems from crises. Furthermore, to the extent that open-ended structures constrain long-term arbitrage, there could be socially excessive open-ending. Finally, the findings suggest that shocks to the supply side of funds are hard to dismiss. Thus, providing liquidity at times of crisis might help to stabilize markets and countries.

If instead crises were country0specific, with investors expecting unreasonable rates of returns, then providing financing at times of crisis might fuel moral hazard.