

# Is trouble brewing for EMEs?

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Network models, stress testing and other tools for financial stability monitoring and macroprudential policy design and implementation

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<sup>1/</sup> The views and conclusions in this presentation are those of the authors, and do not necessarily reflect those of Banco de México.

# Introduction I

- The unprecedented monetary policy stances in AEs have had substantial implications on the world economy. EMEs have assessed the extent to which the referred policies have contributed to speed up their economic recovery and, in tandem, the unintended consequences these policies have brought about.
- One of their **main implications** has been the **significant capital flows that have entered and exited EMEs**. Of course, AEs' monetary authorities are pursuing their own interests (mandates). Thus, in this dimension, our interest is strictly positive.
- On a related note, a leitmotif in **financial stability policy** discussions has been **the degree of leverage in financial institutions**. In effect, financial leverage has been underscored as a **central factor leading to the recent global financial crisis**. Moreover, some of the more recently adopted financial regulations have been designed with the aim, among others, of making financial institutions choose a **more sustainable**, i.e., **closer to a socially optimal**, degree of leverage.

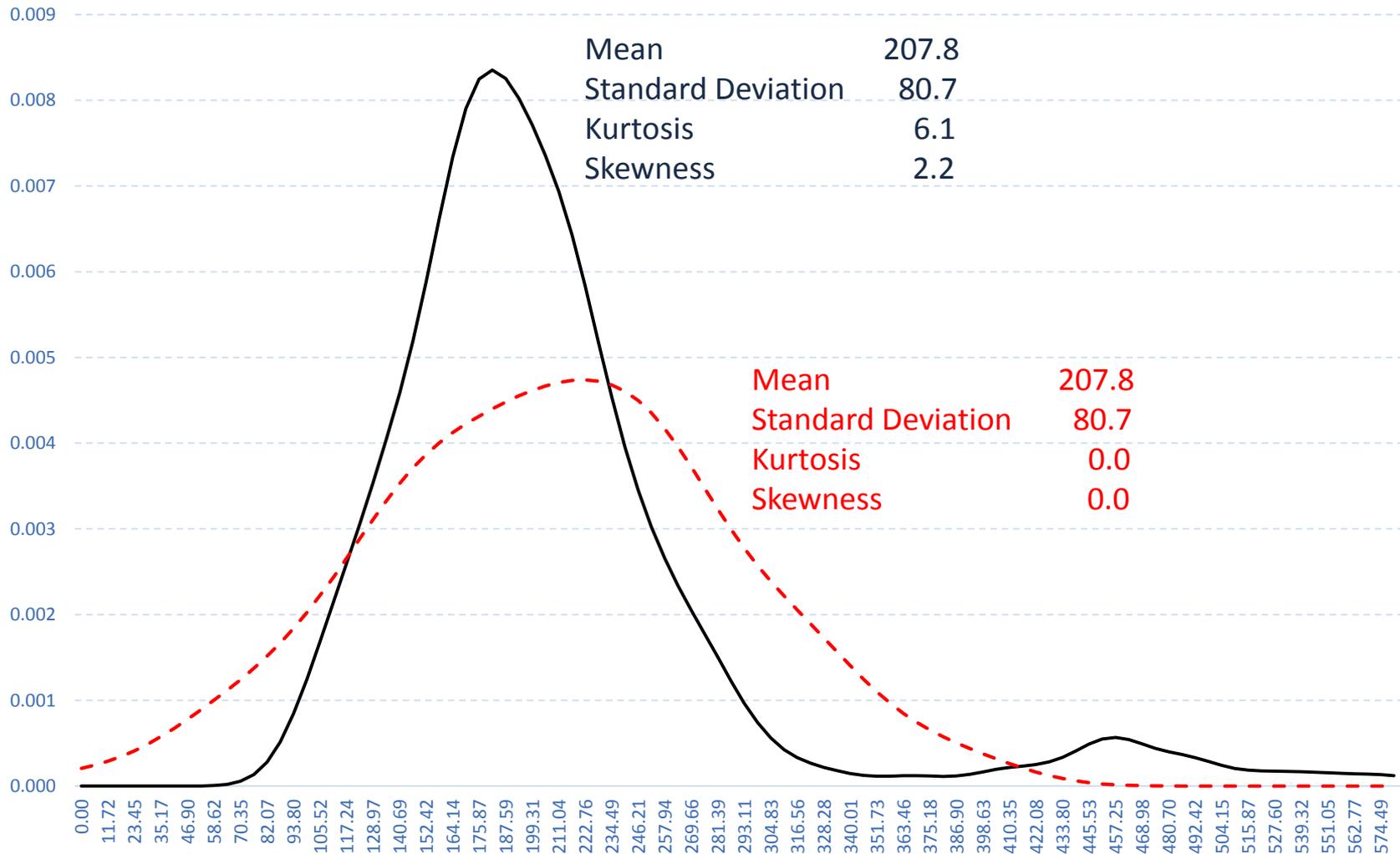
# Introduction II

- Nonetheless, some authors (e.g., Ferioli et al., 2014) have argued that given the incentives faced by many **global asset management companies** and the relative flows' magnitude involve in some markets, a **low degree of leverage in the financial institutions involved will not necessarily assure a stable financial ride through the US policy rate tightening.**
- In this context, our phenomenon of interest can be understood as an **agency problem** present in **global asset management companies**, given the distance between the owners and investors of capital. Paired with a **concern for relative performance** among investors, it can lead to **run-like dynamics in some financial markets**. Moreover, it is exacerbated by the **amount of assets under management relative to the size of financial markets in EMEs.**
- In effect, it is potentially a **systemic risk** affecting both EMEs and AEs, and it is one of the **most important policy dilemmas EMEs are currently facing.**

# Our Study

- We seek **evidence of the existence of run-like dynamics in bond flows to and from a set of EMEs**. In addition, we explore some of the possible implications that **changes in the US monetary policy could have on these dynamics**.
- **Anticipating our results**, we find evidence of the **presence of run-like dynamics in bond flows to and from a set of EMEs**, albeit some economies seem to be more vulnerable than others. We also find that **changes in US monetary policy affect such dynamics**, and that their effects' strength could have increased since 2013.
- Such dynamics can be rationalized by an agency problem, specifically, a **delegated investment between the capital owners and fund investors**, and a concern for **relative performance** between these investors, as mentioned.
- Of course, other channels might be present. Although we do not take a stand on their relative strength, we do think the **run-like dynamics in bond flows play an important role**.

# Density Function for the Average EMBIs



Source: Own calculations with data from Bloomberg.

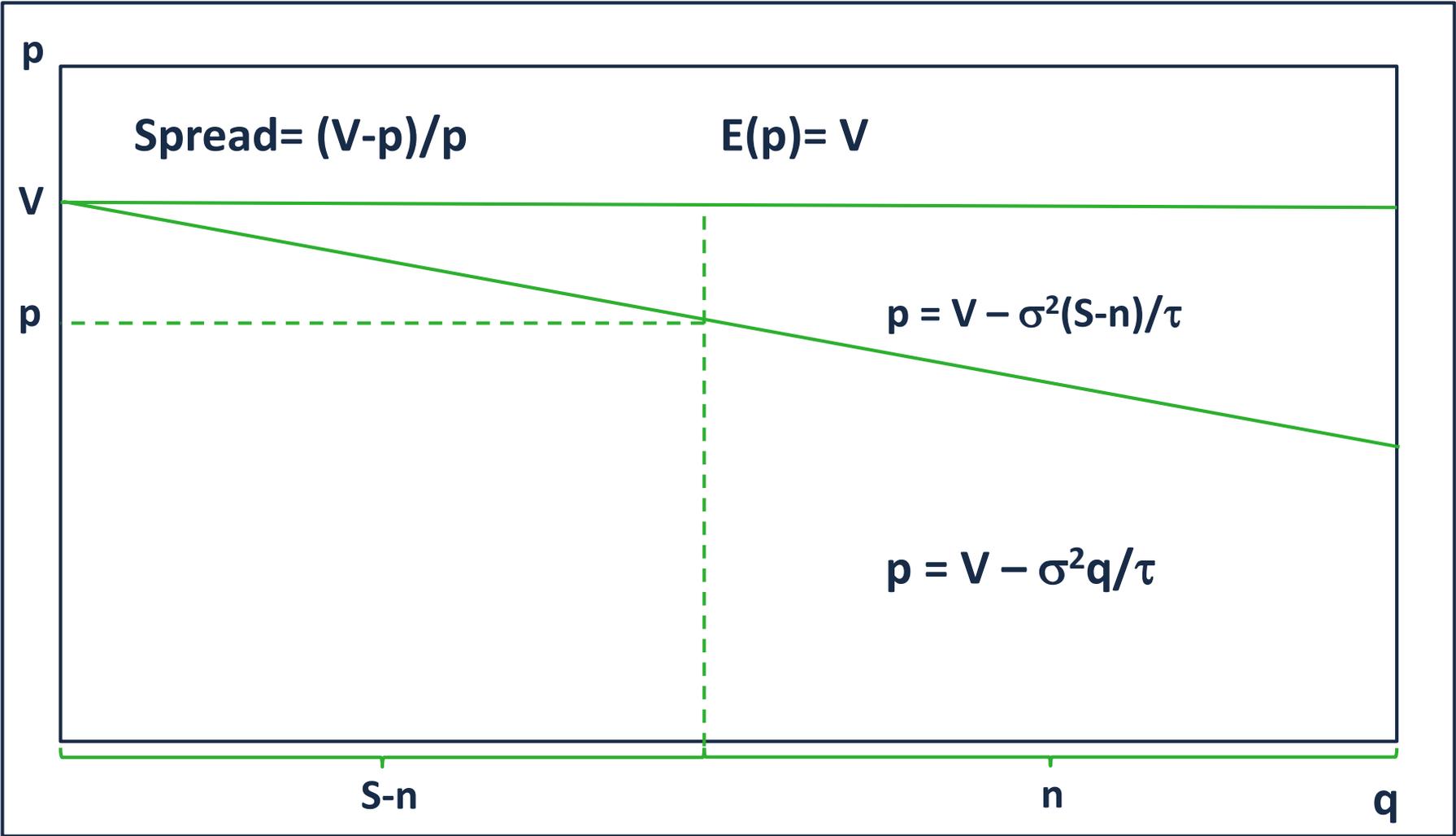
# The Model I

- A brief description of the model (Feroli et al., 2014, Morris and Shin, 2014) is as follows. There are **two types of investors**:
  - ✓ *Passive investors are risk-averse. Each of them chooses between holding one unit of the risky asset, and having her resources in a money market account, which offers a floating rate. This rate is directly associated with the monetary policy rate. Everything else constant, the floating rate is the safest one.*
  - ✓ *Active investors are risk-neutral. Similarly, each investor chooses to hold between a risky asset and having her capital in the money market account. However, they are **delegated investors**. Thus, although they care about long term fundamentals, individually they are also concerned about their relative performance vis-à-vis their peers. In effect, each active investor is **averse to ranking last**.*

# The Model II

- Furthermore, the supply of risky assets is fixed at  $S$ , there are  $n$  **active investors**, with  $i$  of them having a position in the risky asset. It follows that there are  $S-i$  **passive investors** with a position in the risky asset.
- The passive investors' demand for the risky asset:  $p = V - \sigma^2 q / \tau$ . This demand is constructed aggregating the individual demands of each passive investor.  $V$  is the **expected value** of the risky asset.  $\sigma^2$  can be seen as the **variance** of the risky asset. The coefficient  $\tau$  is a risk-sensitive factor, the smaller it is the more risk-sensitive **passive investors** are. It equals the summation of the individual risk-sensitive factors.
- **Active investors**, being risk-neutral, are willing to buy the risky asset at  $V$  or at a lower price. This happens as long as they are not concerned that some of their peers will sell their positions in the risky asset.
- In sum, the **price of the risky asset** is given by:  $p = V - \sigma^2(S-i)/\tau$ .

# The Model III



Source: Ferioli et al. (2014)

# The Model IV

- The allocation decisions of **active investors** can be seen as a **global game** in which they compare the return they are getting in the risky asset against a threshold ( $r^*$ ) of the return in the money market account.
- They also consider the penalty or reputational cost ( $C$ ) they would get if they happen to rank last, and the number of active investors ( $n$ ) with a position in the risky asset.
  - ✓  $r^* < (V-p)/p - C/n$  (keep the risky asset).
  - ✓  $r^* > (V-p)/p - C/n$  (buy the riskless asset).
- If the penalty  $C$  is negligible, the investment decision is simplified. Similarly, a big number of active investors,  $n$ , attenuates the concern for the penalty.
- In a run-like episode, there is nothing fundamental changing in the risky asset. Indeed, a typical characteristic of a systemic crisis is a drop in the value of assets beyond fundamentals (Freixas et al., 2015)

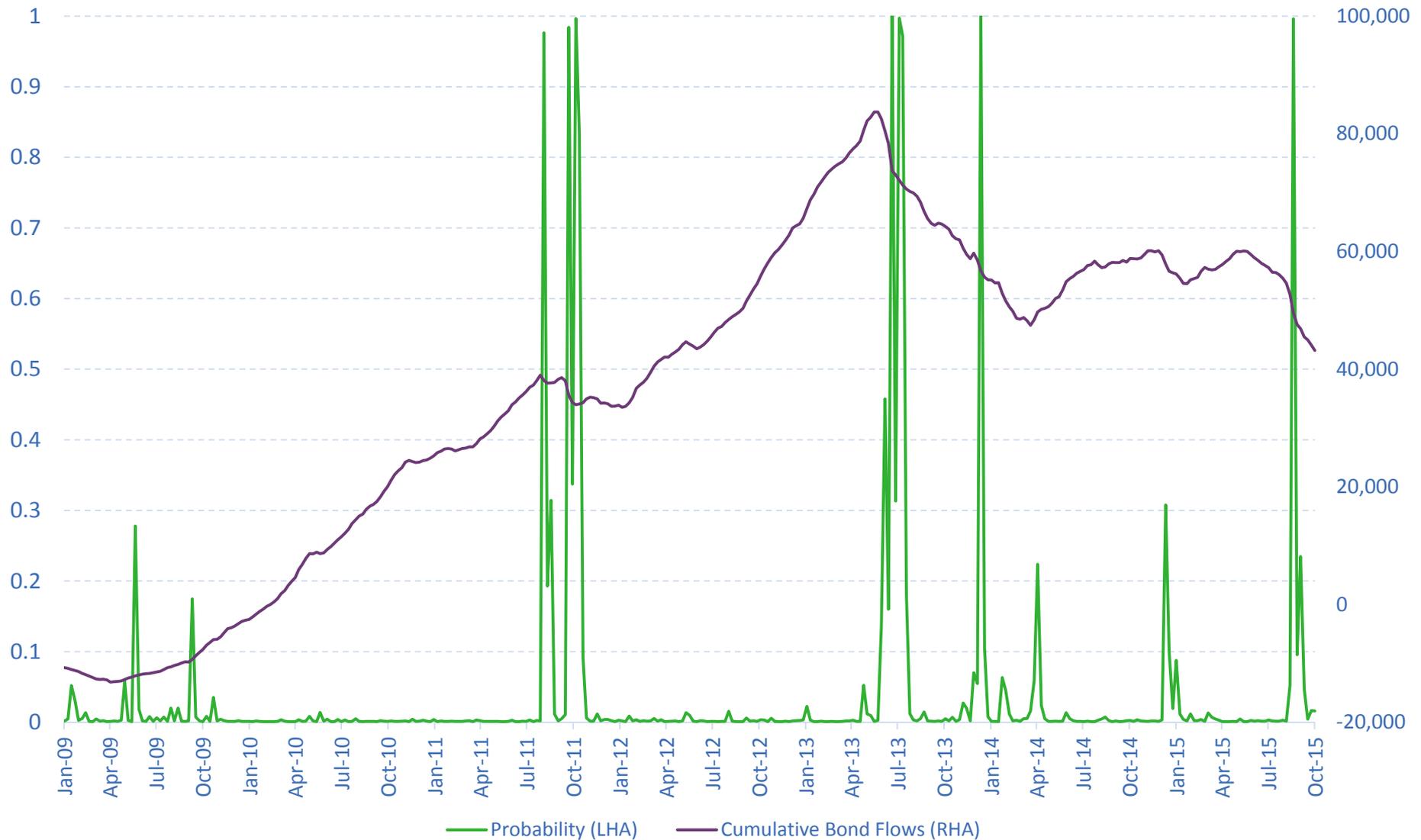
# Data

- The bond flows are the countries' **weekly bond flows** data from **EPFR Global**. These flows approximate the changes in the assets under management. For the estimations involving a monthly frequency, we use the summation of the weekly series.
- The spreads are the countries' **EMBI** (JPMorgan Emerging Market Bond Index) spreads. For the AEs, we use CDS instead.
- As our reference rate we use **Wu and Xia's (2014) shadow rate**. In addition, in some of our robustness exercises, we use Lombardi and Zhu's (2014) and Krippner's (2014) shadow rates.
- All three rates aim to coincide with the reference rate when positive and to **measure the stance of unconventional monetary policy** when negative.
- The **sample periods** go from January 2009/January 2013 to September/October 2015.

# Empirical Results I

- As our main empirically exercises we have:
  - ✓ *First, we estimate VARs using **EMBI spreads** and **EPFR bond flows** for each EMEs, at a weekly frequency.*
  - ✓ *Second, we estimate a VAR using the principal component (PC) of all **EMBI spreads**, and the PC of **EPFR bond flows**, in our database, and the Wu and Xia's (2014) **shadow reference rate**, at a monthly frequency.*
- Respectively, **first**, we find that **bonds flows and the associated indices present negative feedbacks.**
- **Second**, we find that **a shock to the reference rate leads to an increase in (PC of) bond outflows.** Moreover, when we start our estimation sample from January 2013, we find that the (PC of) bond flows' response to a shock to the US reference rate increases in magnitude. This is supportive to the idea that the **US monetary policy effect's strength could have recently increased.**

# Empirical Results II



Source: Own estimations with data from EPFR.

# Empirical Results III

- We run a set of exercises **to test the robustness of our key results**. We use bond flows for AEs and CDSs (in place of EMBIs). We use equity flows for EMEs and MSCI indices, and in a separate estimation equity flows for AEs. In all these cases, **we find little evidence favoring the presence of run-like dynamics**.
- By estimating the tri-variate VARs with specific subsets of EMEs, **we control for**: recent economic performance, degree of leverage in the banking sector, level of financial openness, and geographic regions, among other characteristics.
- We have more recently explored alternative estimations:
  - a. Using **other shadow reference rates**;
  - b. Estimating a **panel VAR with fixed effects**; and,
  - c. Considering a **SVAR with short term restrictions**.
- **All in all, these robustness exercises are in general favorable to the key model's implications.**

# Discussion

- In this context, “[i]t is important to emphasize that the distinction between different channels is somewhat academic in the following sense, first, it is often **quite difficult to distinguish one channel from the others as they all operate simultaneously**, and reinforce one another. Second, **because regulatory authorities are swift in intervening and preventing contagion, it is difficult to identify a smoking gun** and to point out which of the channels of contagion is at work.” (Freixas et al., 2015)
- There are **two dimensions to our problem: the time-dimension**, as bond flows have built up, as well as the **cross-sectional one**, which includes features such as: **herd-like behavior; common funding sources; similar risk management**; etc. (see, e.g., Wagner, 2014).
- In sum, a possible run-like episode could dramatically increase liquidity problems and the significant change in bond prices could have further negative implications in financial markets that could spell significant **problems in the real economy**.

# Policy Response

- **At the heart of the problem there is an externality.** The way it could be internalized depends on the **level at which the run-like dynamics take place**, namely, at a managers or at an investors' level.
- As has been pointed out (e.g., in Stein, 2014):
  - ✓ *If it takes place at an investors' level, a fee for those investors exiting their position in the risky asset could be imposed.*
  - ✓ *It is less direct what policy step can be taken if the problem takes place at a fund manager's level.*
- **Crucially, the externality is two-sided: it affects AEs and EMEs.** While it could potentially affect EMEs more harshly, one could argue that it is preferable to implement a policy response in AEs. Hence, **a policy response would possibly entail some cooperation.**
- It is important to recognize that **international cooperation** in this and other policy areas is **challenging to achieve** for reasons discussed elsewhere (e.g., see Schwartz, 2000).

# Final Remarks

- As the world has grown financially more integrated, **externalities in the financial sector have appeared in unsuspected places**. Against the backdrop of the global financial crisis' aftermath, **changes in macroprudential policy regulation** have been set in place.
- Thus, it is crucial that an **open dialogue** is maintained to gain a better understanding of the possible externalities and, in tandem, unintended consequences in financial markets.
- We hypothesize that, up to this point, **we have only seen a handful of run-like dynamics episodes**, although **we believe that there is a good chance that more will likely follow**.
- In sum, **run-like dynamics in bond flows is a latent systemic risk and should be a concern for EMEs and AEs alike**. What is more, **it is one of the most important policy dilemmas presently faced by EMEs**.
- **More generally, the real test for EMEs will come once the US decides to start normalizing its reference rate (Freixas et al. 2015)**.

# Main References

- [1.] Ferioli, Kahshyap, Schoenholtz, and Shin (2014). “Market Tantrums and Monetary Policy.” US Monetary Policy Forum.
- [2.] Freixas, Laeven, and Peydró (2015). “Systemic Risk, Crises and Macroprudential Regulation.” Princeton University Press.
- [3.] Krippner (2014). “Documentation for US measures of monetary policy.” Unpublished paper. Reserve Bank of New Zealand.
- [4.] Lombardi and Zhu (2014) “A shadow policy rate to calibrate US monetary policy at the zero lower bound,” Working Papers No 452, June.
- [5.] Morris and Shin (2014). “Risk Taking Channel of Monetary Policy: A Global Game Approach” Working Paper. Princeton University.
- [6.] Ramos-Francia and García-Verdú (2014). “Is trouble brewing for EMEs.” Banco de México, Working Paper.
- [7.] Schwartz (2000). “The rise and fall of exchange rate intervention.” NBER Working Paper.
- [8.] Stein (2014). “Comments on “Market Tantrums and Monetary Policy,”” a paper by Feroli, Kashyap, Schoenholtz, and Shin; Member Board of Governors of the Federal Reserve System at the 2014 U.S. Monetary Policy Forum.
- [9.] Wagner (2015). “Unintended consequences of macroprudential policies.” in Macroprudentialism, edited by Dirk Schoenmaker, A VoxEU.org Book.
- [10.] Wu and Xia (2014). “Measuring the Macroeconomic Impact of Monetary Policy at the Zero Lower Bound,” CQER Working Paper 2014-2