

Challenges to Achieving Price Stability
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Opening Remarks

- Good morning, I am Manuel Ramos-Francia, a Vice-Governor and Member of the Governing Board at Banco de México. Also, I am currently the Chairman of the Deputies of the International Monetary and Financial Committee (IMFC) of the International Monetary Fund (IMF). I mention this because at the end of my remarks, I will briefly touch upon some of the topics that are being discussed at the IMFC concerning the role of the IMF in the global economy.
- On behalf of Banco de México, I would like to extend everyone a warm welcome to the Annual International Journal of Central Banking Research Conference “Challenges to Achieving Price Stability.” I would also like to express my gratitude to the conference organizers, the IJCB, and our host Banco de México, in particular, its Research Division.
- As all of you know, in response to the **global financial crisis**, central banks in major advanced economies adopted a series of **unconventional monetary policies (UMPs)** with **two main objectives**.
 - ✓ *First, to restore the functioning of financial markets and intermediation.* This goal included all the way from liquidity provision to a sort of “market maker of last resort”, and comprised purchases of private and public assets.
 - ✓ *Second, to provide further monetary accommodation at the zero lower bound (zlb).* This objective included purchases of government bonds, as well as forward guidance.
- The need for UMPs brought to light fundamental problems in the theoretical underpinnings of what was, at the time, considered mainstream central bank macroeconomic modelling.
- Concerning the aforementioned objectives, as Willem Buiter (2014) has recently emphasized, central bank macro modelling mainly rested on a ‘**complete markets paradigm.**²
- ✓ Indeed, in a world where there exists a set of securities that spans all time periods and states of nature, and in which inter-temporal budget constraints are satisfied, **default**,

¹ Vice-Governor and Member of the Board of the Banco de México. The following are my views, and do not necessarily reflect the views of the institutions to which I am affiliated. I would like to thank Santiago García-Verdú for his comments and suggestions.

² Buiter (2014).

bankruptcy and **insolvency** are not possibilities. Consequently, with the exception of using some off-the-cuff assumptions, **funding and market illiquidity are not possible** in such a setup. More generally, in such paradigm, *banks are redundant institutions.*³

- ✓ On a related note, the retrenched urgency of linearizing models, and of assuming additive shocks, gave place to **business cycle dynamics that were, by construction, stable.** Thus, it was a futile effort towards understanding financial stability issues.
- These policies, many believe, have given rise to more questions than answers in that terrain where theory and policy are closely intertwined. Allow me to name some of the most prominent ones.
 - ✓ *Should long-term price stability continue to be the primary objective of monetary policy, or should there be new ones such as financial and external stabilities (these in conjunction with other policies)?*⁴
 - ✓ *Should we rethink the monetary transmission channels and economic relationships such as the Phillips curve?*⁵
 - ✓ *Will there be new challenges to central banks' independence, both because of economic and political reasons?*⁶
 - ✓ *How should monetary policy interact with macro-prudential policy and capital flows management policies? Moreover, is there really a justification for the implementation in some cases of the latter?*⁷
 - ✓ *How should we think about monetary policy at the zero lower bound?*⁸
 - ✓ *Is there a need for aggressive monetary policy since, some believe, the Wicksellian natural real rate may be significantly negative at this time?*
 - ✓ *Should we forget about the possibility of fiscal dominance in countries where Quantitative Easing policies have been implemented?*

³ Freixas and Rochet (2008).

⁴ See, e.g., Smets (2014).

⁵ This question has given place to a lively debate. On the one hand, e.g., Faust and Leeper (2015) argue that the relationship between “measures of economic slack, such as the unemployment rate, and inflation has never been very tight, and that standard measures of slack have never shown any real predictive power for where inflation is heading.” On the other, e.g., Mericle and Struyven (2015) argue that the Phillips curve seems ‘alive and well’ in the U.S. although inflation has fallen short of its target.

⁶ See, e.g., see Kohn (2014).

⁷ See, e.g., Freixas et al. (2015).

⁸ See, e.g., Caruana (2015), and Coenen and Warne (2014).

✓ Should there be **greater international cooperation in the sphere of monetary policy**?

- Of course, during the last few years, both academics and policy makers alike have been working hard and diligently on many of these issues, potentially **laying the foundations of new ways to think about monetary policy**, and its interactions with other policies. In fact, fora like the IJCB have been actively contributing towards improving this debate, and will surely keep doing so in the future.
- Today, I want to concentrate on a particular aspect of the last topic of the list I just mentioned, **whether more international cooperation in monetary policy is warranted**. Indeed, I believe that one of the most important issues that we have learned since the onset of the crisis, is that in a **highly integrated world, monetary policy does not work in isolation in the country of origin**.⁹ To be sure, many have argued that it is now necessary to think about the possible spillovers and, in tandem, spillbacks that monetary policy can in effect create. Some of these important issues are explored in today's seminar by Kristina Bluwstein, and Fabio Canova in the European scene, and by Victoria Nuguer in the international one.¹⁰
- It is useful to recall that prior to the global financial crisis, the overall perception was that if each country maintained an adequate and orderly set of economic policies, then the world economy would take care of itself. It was perceived that, if one country made a policy mistake, any repercussions would be mostly limited to that same country. What was only needed in order to maintain economic and financial stability was the exchange of information. This concept was dubbed *the house-in-order doctrine* by Padoa-Schioppa (2005).¹¹ Needless to say, the recent global financial crisis was a harsh reminder of how inadequate such a perception was.¹²
- Indeed, the **way of thinking was that cooperation was not of first order importance**. As a result, there was no genuine joint effort to even debate and, thus, possibly agree on measures to take cooperation to a higher footing.
- Nowadays, we should know better. In effect, the world economy is quite different from how we perceived it at the time. Let me mention a couple of points in this regard.¹³
 - ✓ **First**, the level of interconnectedness between economies in today's world has dramatically increased. Beyond the global nature of many firms and financial institutions, this interconnectedness has changed in many dimensions during the past several years. **Accordingly, among others, it has potentially increased feedback**

⁹ See, e.g., Bowman, Londono, and Sapriza (2014).

¹⁰ See Bluwstein and Canova (2015), and Nueger (2015).

¹¹ Although documented by Padoa-Schioppa (2005), he did not advocate for such doctrine.

¹² This idea is akin to the *divine coincidence*, attributed to Blanchard and Galí (2005).

¹³ We have seen what an inefficiently regulated, inadequately supervised, incessantly changing, and highly interconnected financial system can lead to. Thus, there is clearly need to advance the cooperation agenda.

effects across different economies due to macroeconomic shocks. Thus, policies should be designed acknowledging this, ineludibly calling for cooperation.

- ✓ **Second**, big economies need to take into consideration the consequences its policies might have beyond their borders, in particular, in small open economies.¹⁴ In this respect, one could take for granted that the implementation of certain policies is suitable for the markets they are envisioned for. Yet, they might have unintended consequences in other economies.¹⁵
- Considering a broader perspective, I believe that few would dispute that today the world finds itself in a **growth malaise**. Different reasons have been given to explain this:¹⁶
 - ✓ Some emphasize a persistent inadequacy of **aggregate demand**, and the fact that the zlb as well as the potential for financial instability prevents monetary policy from being more active, a situation which has been called ‘**secular stagnation**’.¹⁷
 - ✓ Others have emphasized a weak **supply** potential, arguing a slowdown in post-war total factor productivity growth.¹⁸
 - ✓ Yet other, more recently, have highlighted plateauing educational levels, and labor force participation rates.^{19, 20}

¹⁴ In this context, it is convenient to recall, as way of an example, the Dodd-Frank Law and, in particular, the Volcker Rule. The Dodd-Frank Act was signed into law by President Obama on July 21, 2010. In general terms, the Volcker Rule prohibits an insured depository institution from engaging in proprietary trading. This measure intends to reduce systemic risk.

¹⁵ The Volcker Rule could affect the financial markets within the referred economies. For instance, if the financial institutions in the emerging economies that are affiliated to banks in the US are also subject to the restrictions required by that rule, their demand for local government assets might be seriously affected. This, accordingly, might affect the local governments’ financial capacity as well.

¹⁶ Rajan (2015).

¹⁷ In 1938, Hansen delivered the AEA presidential address after an era of sluggish growth of the US economy. This led him to wonder whether there would be sufficient investment demand to sustain future economic growth. Summers brought this idea back in a speech at the IMF (Summers, 2013 and 2014). His basic premise was that growth may be low since it is below its long-run potential growth rate (Teulings and Baldwin, 2014).

¹⁸ This interpretation emphasizes levels rather than growth rates damage to the economy’s potential output associated with a crisis (see Teulings and Baldwin, 2014).

¹⁹ Gordon’s (2012) argument is that technological progress has returned to its low historical norm. Beyond technology; he focuses on four structural headwinds: demography, education, inequality, and public debt; Gordon (2014) cites research showing that about half the US decline in participation comes from ageing, and the other half is from declining participation within age groups, due in part to weak economic conditions (Teulings and Baldwin, 2014).

²⁰ Arguably, all three points might be considered as part of secular stagnation. Yet, Summers’ explanation was mainly based on the first one.

- As Raghuram Rajan, currently the Governor of the Reserve Bank of India, has argued, it is difficult to disentangle the effects of weak aggregate demand from slow growth in potential supply.²¹
- In this context, nevertheless, the ever present need for growth for societies, and, of course, for politicians, elected or otherwise, has become even more urgent. Adding to this, the fear of deflation has been haunting central banks.
- **In particular**, given the high levels of debt maintained by some agents, be them households, governments, firms or others, among other factors, **countercyclical policies have mainly proven to be ineffective in restoring growth**, whereas **structural reform policies take time to implement and to deliver benefits to society**, not least because politically they are difficult to implement as there is usually the need to confront vested and entrenched interests.
- **Even so, the need for growth remains.** What other instruments are there to achieve it? Well, as all of you know, **exports**. This is not only for the reasons that I just mentioned, but also because the potential global market for goods and services is, by definition, bigger than any individual country's market.²²
- A big problem, however, is that under stagnant growth conditions, all countries trying to increase exports at the same time amounts to a zero sum game.
- **Under reasonable circumstances, what would one expect about the workings of the global economy?** Given the need for consumption smoothing at a relatively higher level on the part of emerging economies, one would expect to observe capital flows from advanced to emerging economies, for the latter to invest and, at the end of the day, for them to enhance their economic growth and consumption, thereby increasing their demand for goods and services from advanced ones.
- As we can remember from the 90s and the early 2000s, however, **this did not end up well in most cases**. This was so for a plethora of reasons. **As a result**, many emerging markets decided to change track, running current account surpluses, or substantially lowering current account deficits, and accumulating international reserves, both to maintain exchange rate competitiveness, and to self-insure against sudden-stop type of events.
- On the other hand, since the onset of the crisis, for advanced economies, **the central macroeconomic tool both for financial and macroeconomic stabilization purposes, and for attempting to restore growth, have been UMPs**.²³ These have been designed to compress term premiums and, in combination with forward guidance signaling low expected short term rates, have lowered to historical minimums long dated bond yields in

²¹ Rajan (2015).

²² A very interesting account of this is in Rajan (2015).

²³ In fact, they have been refer to as "the only game in town." See, e.g., Rajan (2012).

many advanced economies. In tandem, they have precipitated a very active **search-for-yield process**.

- Of course, this has meant **record amounts of capital flowing to emerging economies**, and, to varying degrees depending on the policies implemented by them, appreciating their real exchange rates with the concomitant relative price distortions and, in many cases, leading to credit and/or consumptions booms. An important reason for this was the perception on the part of many of these economies that, due to favorable terms of trade shocks over a long period of time in the form of high and increasing commodity prices, in combination with the readily available foreign capital, they had more equity than was really the case. Clearly, this led to a deterioration of current accounts in many emerging economies, and to the improvement in advanced economies' current accounts.
- Nevertheless, if these UMPs are not accompanied by other domestic demand enhancing policies, this amounts, just as it happened in the case of emerging markets following their 1990s and early 2000s crises, **to demand diversion and not to demand creation**.
- If there would be incentives to stop both, a) UMPs on the part of advanced economies at some point, for example, once deflation fears dissipate, and market functioning is restored, and b) international reserve accumulation on the part of emerging ones, there wouldn't be a problem. **Nevertheless**, as we are starting to learn, UMPs seem to start losing traction at some point which, together with the never ending politically motivated quest for growth, can result in strong incentives to continue, and even intensify, these policies beyond any reasonable limit.
- **On the other hand**, if at some point the decision is reached for the need to start reversing these policies, then emerging economies in particular, face another daunting challenge: that of the **possibility of strong capital outflows**. **Evidently, trying to prevent the worst effects of this leads emerging economies to accumulate reserves**.
- **In sum**, both advanced and emerging economies have incentives to be engaged in a **quest to divert** demand to their own economies through policies that alter central bank balance sheets and, in the case of emerging economies, additionally to self-insure against sudden stops, leading to a very inefficient global growth equilibrium reflecting, overall, lack of demand.
- In my following remarks, I will dwell on the particular dilemma that many emerging economies are currently facing derived from the stage of the game we are presently at that I have just described: **the possibility of abrupt, large, disruptive capital outflows**.
- There has been an enduring and heated debate on the topic of **capital flows and/or controls**. As I mentioned, it has taken place amidst the unprecedented monetary policy stances that have been set in place in many advanced economies. Of course, emerging market economies have felt some of their spill-overs. On the matter, the IMF has published

two relatively influential Working Papers. (Ostry et al. (2010), and an IMF's policy paper (2012)).²⁴

- Broadly speaking, they recommend that if an economy faces a situation under which authorities become cognizant of macroeconomic risks accumulating in light of, among others, excessive capital inflows, they should respond with the following policies, albeit their exact implementation depends on the particular circumstances faced by each economy.
 - i. *Allow for the exchange rate to appreciate.*
 - ii. *Accumulate international reserves.*
 - iii. *Intervene in the exchange rate market.*
 - iv. *Relax monetary and tighten fiscal policies.*
- If all these responses have been judged to be exhausted, only then authorities should consider using capital controls. In particular, they should not be used to postpone other, perhaps very much needed, policies. In a nutshell, they see capital controls only as a complementary policy tool.
- Needless to say, this was a significant shift in the Fund's stance on the subject. In effect, as stated in The Economist (2013) writing on the matter, it was as "...if the Vatican had given its blessing to birth control."
- In this context, there are two **externalities** that initially called much of the attention of policy makers and academics alike.
 - ✓ **First**, UMPs have been seen by many as monetary experiments with possible highly unknown repercussions. In fact, Rajan has referred to them as a 'step in the dark.'²⁵ **One of the channels through which UMPs work is through exchange rates.** Accordingly, there are several terms which are closely associated with it: currency wars, competitive devaluation, and competitive easing.²⁶
 - ✓ **Second**, some of the emerging market economies, which are recipients of capital flows, have implemented **capital controls**. These have, quite possibly, brought about significant **policy uncertainty**. Moreover, such policy responses can lead to several other difficulties. To begin with, they can **deflect capital flows** towards other economies. Accordingly, even under the case in which capital controls could make sense from an individual perspective, from a multilateral one, they might turn out to be deleterious.²⁷

²⁴ See also Ostry et al. (2011a), Ostry et al. (2011b), and Ostry et al. (2012).

²⁵ See, e.g., Rajan (2013).

²⁶ Rajan (2014).

²⁷ See, e.g., Ostry et al. (2012).

- What is more, **albeit capital controls have been advocated as a policy option under some conditions, they can in fact most of the time be easily circumvented.** Since their significant **enforceability issues are well known, I will not dwell on them.**²⁸
- It is important to note that, evidently, the current rationale for implementing capital controls (or intervening in the FX market, for that matter) is precisely the opposite one that gave rise to the previous discussion: **this time, it's the possibility of large, abrupt, capital outflows that has given rise to their renewed interest.**
- In this sense, it is useful to consider some of the **economic rationales** that have been put forward by the academic literature motivating the use of capital controls, **this time around in order to mitigate the effects of sudden stops.** In what follows, I will briefly review three of the main recent papers.
 - ✓ **First, Farhi and Werning's (2013)** consider the possible occurrence of a sudden stop. **In their model, capital controls are set as subsidies on capital inflows and as taxes on outflows.** The authorities have as an objective to mitigate the archetypal consequences of a sudden stop: exchange rate depreciations, interest rate increases, current account reversals, and drops in consumption. Thus, the rationale they put forward for capital controls is to smooth the stabilization process when a sudden stop takes place.
 - ✓ **Second, in Bengui and Bianchi (2014)** households are occasionally subject to a credit constraint. Hence, their access to credit depends on the value of their current income, which in turn is a function of tradable and non-tradable goods. Then, if sufficient debt stock accumulates and a sudden stop takes place, the contraction of capital flows and the depreciation of the real exchange rate feed each other through the credit constraint. In their model, a pecuniary externality exists precisely because agents ignore that as their debt increases, they are more exposed to a sudden stop. They maintain that their externality can be addressed with capital controls.²⁹

The gist in their model is that **controls cannot be enforced on a fraction of agents.** Thus, as authorities tighten the financial regulation, the fraction of unregulated agents know there is less probability of a sudden stop, and take on additional debt. While the planner cannot control unregulated agents, she does account for these leakages when solving for her planning problem. The authors find that, notwithstanding the imperfect enforcement, capital controls are welfare improving. But when implemented, their cost essentially falls on the regulated fraction of agents, while their benefits are shared by both fractions.

- ✓ **Third, Korinek and Sandri (2014)** study how pecuniary externalities lead to financial amplification in a small open economy. In their model, borrowers are financially constrained, and do not internalize the effect their decisions have on the relative price

²⁸ Habermeier et al. (2011) review the literature on capital controls. They argue that they have little effect on the capital flows and, at best, the evidence is mixed.

²⁹ See, e.g., Bianchi (2011).

of the non-tradable good (i.e., the real exchange rate). In contrast, savers are not financially constrained. Also, foreigners borrow/save and buy/sell the tradable good with domestic agents. When the financial constraint binds, the real exchange rate is more sensitive to changes in the borrowers' endowment, in particular in light of a sudden stop like episode. This is so given that agents' endowments are valued in terms of the price of non-tradeable goods, a relative price which deteriorates in case of a sudden stop. The borrowers' constraint, and the pecuniary externality lead to an **amplification mechanism**.

Their model has the same flavor as the celebrated Kiyotaki and Moore's *Credit cycles* model, as they both have an amplification mechanism through financial constraints and collateralized borrowing.³⁰

- **In sum**, recently, there has been this development in the literature that uses general equilibrium models in which, for the most part, pecuniary externalities are used to justify the implementation of capital controls.³¹
- However, while the aforementioned papers are laudable and certainly have their academic merit, we believe **they do not focus on the most salient difficulties policy makers, particularly in some emerging markets, are facing today**. As many of you know, there is always a danger of focusing more on what is analytically tractable and elegant, than on what is policy wise more relevant.
- **In light of this, let me explain what I think are today some of the most important, outstanding policy issues for emerging market economies.**
- **The main dilemma is the need to balance the possibility of large capital outflows and/or volatility, with the need to try to restore higher growth coupled with reduced policy space.**
- **In order to dwell further, let me first briefly describe the current setup:**
 - ✓ **The first** element to consider is, how and when, the lift-off of short terms rates in the US will take place. It goes without saying that this should not to be understood as a statement regarding its adequacy. In fact, this is not the case here or elsewhere in my remarks today.
 - ✓ **Second**, broadly speaking, we believe that some of the key problems for policy makers in the context of capital flows can be divided into two stages. **Initially**, the low levels of interest rates in advanced economies as a result of the implementation of QE, gave investors the incentives to perform carry trade operations and, thus, significantly

³⁰ As known, Kiyotaki and Moore (1997) study how small shocks to the economy can, through an amplification mechanism in the credit markets, result in important variations to output. The main characteristic in their model is that land is used as input and as a collateral. Similarly, there are two types of agents and their technologies differ.

³¹ Korinek and Sandri (2014), and Bengui and Bianchi (2013).

increased the already quite large capital inflows to emerging economies. **Afterwards**, in the prelude of the eminent first increase in the US reference rate, there have been episodes suggestive of the extent to which capital flows could leave emerging markets in a disorderly fashion.

- ✓ **Associated with both stages**, some characteristics exacerbate such problems. For instance, there is the size of the Global Asset Management Companies (GAMCs), which have become very relevant players in emerging economies' financial markets, in no small part because they operate mainly in an unleveraged way, whereas other financial institutions such as banks are now subject to much more stringent regulation, which has tended to reduce their presence in emerging economies financial markets. In particular, capital flows from GAMCs are large when compared to the size of some emerging economies' financial markets.^{32,33} These companies also follow similar investment strategies in the referred financial markets, tending to invest in just a few instruments like ETFs and wide indices like the WIGBY, and use similar risk management tools.³⁴ Moreover, these may contribute significantly to increase crowded trades.³⁵ **Most of these elements can be considered cross-sectional channels of systemic risk** (see, e.g., Wagner (2014)). In effect, **the amount of risk they are taking is quite possibly above the socially optimal one.**
- **Indeed, one of the current main causes of concern for policymakers in emerging economies is not only the possibility of large capital outflows, but the dynamics and volatility of those flows.** In this context, we believe that the correct approach to understand this is as an **agency problem** among the owners of capital and its managers, involving a **global game**, as in Morris and Shin (2014).³⁶
 - ✓ In their model, asset managers -which are risk neutral- interact with households -which are risk-averse- in a risky bond market. All agents have access to a money market account that provides a floating rate. This rate directly depends on the monetary policy reference rate in the core country. Both types of agents have to decide where to allocate their capital, in the risky bond, or in the money market account. A **key characteristic of their model** is that as the number of managers with a position in the risky bond increases, the level of the bond price increases, and vice versa.
 - ✓ In the **global game** managers decide whether to keep investing a unit of their capital in the risky bond, or allocate it to the money market account. To that end, they receive a signal regarding the reference rate, which affects the return yield on the money market account. Moreover, each manager receives an independent signal of the reference rate.

³² Roxburgh et al. (2011) provide a good overview of the dynamics of global capital markets and how they have recovered in the global financial crisis' aftermath.

³³ Calvo (1998).

³⁴ Moreover, some have criticized some risk management tools that are still in use, e.g., see Rowe (2013).

³⁵ See, e.g., Pojarliev and Levich (2010).

³⁶ The economic theory of agency, arguably, began with Ross (1973).

Thus, they follow threshold strategies, i.e., they take their portfolio decision depending on the level in which the reference rate falls relative to a threshold.

- ✓ **The imperfections derived from this agency problem are commonly mitigated by ranking investors performance.** In effect, ranking is a monitoring mechanism to mitigate the agency problem present particularly since the ultimate investors are too far removed from the owners of capital. **The gist is that asset managers, evidently, are averse to ranking last.** This is so since then they can face fund redemptions and, more generally, their asset gathering capabilities can be affected. Thus, in their model, managers that rank last are penalized beyond their unfavorable portfolio return.³⁷ This aversion introduces a coordination mechanism in the managers' portfolio decisions. In particular, such decisions can lead to jumps in prices in anticipation of expected small changes in central banks' reference rates. **Arguably, these elements can lead to run-like dynamics in the respective financial market.**

- There are **two key empirical implications** of their model.

- ✓ **First**, as mentioned, as the number of portfolio managers with a position in the risky bond increases, the bond price increases, and vice versa. For the same reason, as a pack of portfolio managers sell their positions in the risky bond, its price decreases proportionally to the size of the pack. In contrast, in a large market, a decrease in its price will attract other managers and stave off the price reduction.³⁸

In their model, there is no change in the economic fundamentals of the risky asset for its price to significantly change. In this regard, a **typical characteristic of a systemic risk episode** is that asset prices change without any apparent variation in their fundamentals (Freixas et al. 2015).

- ✓ **Second**, as the number of portfolio managers with a position in the risky bond increases, the level of the interest rate threshold which guides their portfolio decisions between the money market account and the risky bond decreases. Thus, as underscored by Morris and Shin (2014), the size of the managers sector is key to determining the possible market disruptions when monetary policy shocks take place.³⁹

³⁷ In Morris and Shin (2014), the penalty depends on the proportion of investors whose portfolio has a higher value than the portfolio of the investor ranking last. Similarly, in Feroli et al. (2014), the penalty depends on the number of investors (refer to as *active investors*) with a position in the risky asset. As argue in Morris and Shin (2014) this mechanism is akin to the game of musical chairs. The effort one players exerts has an impact on the effort of others.

³⁸ Thus, under the absence of this type of mechanisms one would expect to observe that changes in the managers' positions have little to no implications for the risky bond price and vice versa.

³⁹ This has as a significant implication that as the US monetary policy rate has been maintained in unprecedented low levels it has given leeway to a significant number of managers' positions in the risky asset.

- Their **main empirical implications have been explored** in, at least, two different contexts.⁴⁰ For instance, **first**, Feroli et al. (2014) explore the possibility of run-like dynamics in different types of open-end mutual funds. To assess these implications they posit a model which is a simplification of Morris and Shin's (2014) model. They find that for some types of funds, there is evidence of the possible presence of possible run-like dynamics.
- **Second**, García-Verdú and myself (2015), under the same framework, explore the possible presence of run-like dynamics in bond flows associated with a group of emerging market economies.
 - ✓ In effect, **we find evidence favorable to the presence of run-like dynamics in bond flows**. Moreover, we find indications that **changes in the US monetary policy rate seem to affect the bond flows dynamics**.
 - ✓ Interestingly enough, we also find that the **US monetary policy effects' strength on the bond flow dynamics has apparently increased** in recent years.
 - ✓ We run a battery of control and robustness exercises. In them, for instance, we find little evidence of run-like dynamics in equities flows associated with emerging markets, and in bond flows associated with advanced economies, where financial markets are deeper.
- Let me briefly discuss some **possible policy responses** that have been brought to the table. **At the heart of the model, there is an externality. Moreover, it is two-sided**, affecting emerging and advanced economies.
 - ✓ For instance, Stein (2014) argues that the policy response should depend on the level at which the run-like dynamics take place. If they take place at the investors' level, one could impose, for example, a redemption fee.
 - ✓ The economic rationale for such a measure is straightforward: a fee would make exiting investors internalize the effect on the risky bond's price, which affects all of their peers that did not sell their positions.
 - ✓ Nonetheless, if the run-like dynamics take place at the fund managers' level, a policy response is less direct.

⁴⁰ Along this line, Miyajima and Shin (2014) have found evidence that provide evidence showing that, during the past couple of years, investor flows to asset managers and EME asset prices have reinforced each other's movements. On a related note, the IMF (2015) dedicates a whole chapter of its Global Financial Stability Report to analyze "The Asset Management Industry and Financial Stability." In it, it is argued that "The delegation of day-to-day portfolio management introduces incentive problems between end investors and portfolio managers, which can encourage destabilizing behavior and amplify shocks."

Hence, it seems that there could be some gains by cooperating in implementing some sort of policy response. In this case, the FSB is presently analysing policies which could internalize the large **liquidity risk** derived from possible massive redemptions in the referred markets. Of course, any actual implementation would need a more systematic assessment of the situation. **Yet, we believe that the externality is there, and could certainly entail a systemic risk.**

- In this context, there might be the perception that the size of emerging market economies is, from the advanced economies' perspective, inconsequential. This is an unfortunate perception. Any such perception might run the risk of repeating the same mistakes done prior to the global financial crisis, by assuming away the possibility of contagion through financial markets.
- **Notably**, these issues are mostly unrelated to the problems that were used to motivate the use of capital controls. In fact, in policy circles, it was widely believed that the capital controls discussion had been settled a long time ago. Yet, in the last few years there has been an unprecedented degree of monetary policy accommodation in advanced economies. The search for yield, given the low levels of interest rates in advanced economies, has led to enormous problems in policy making in some emerging market economies in both of its facets: at first the large capital inflow stage and, afterwards, the possibility of large, abrupt capital outflows when the perception is generated that the core country could start the process of normalizing monetary policy.
- **To conclude**, let me mention two set of points. The first set pertains to some of the key policies emerging economies can individually pursue. The second set, to the need of taking international cooperation to a higher level.
 - ✓ **First, going forward, emerging markets as I have said, face potentially daunting challenges.**
 - In this context, it is very difficult to overemphasize that nothing can substitute for solid macroeconomic fundamentals.
 - Fiscal policy should be tightened. Monetary policy should be adjusted depending on different issues, but there may be complicated trade-offs present in this case.
 - Financial authorities have to foster conditions under which financial markets can grow as deep, and as complete, as possible.
 - Policy makers have to design, plan and implement the necessary structural reforms.

Crucially, these policies have to be seen and implemented as a package. In effect, there are neither silver bullets, nor fail-safe reforms. Equally important is that emerging market economies that have consistently implemented more prudent macroeconomic policies should try to differentiate themselves from their peers as

much as possible, especially now that the asset class seems to be under a lot of strain.

- ✓ **Second**, regarding international cooperation, my contention is that for it to gain traction, we need to reassess its benefits and, in tandem, the eventual costs of continuing with the current system (or non-system).
 - **This is not to say that cooperation can be easily achieved.** In effect, in the words of the late Anna Schwartz cooperation: “...is a fair-weather instrument because countries have independent interests that they will not sacrifice for the sake of the collectivity.”⁴¹ Rather, it is motivating cooperation what is necessary given the otherwise potential dire consequences.
 - The theory on **non-cooperative repeated games** can tell us about why and where has there been cooperation, and where we can expect to see it in the future. More specifically, in such games the players’ willingness to cooperate closely depends on: 1) their subjective discount factors, 2) the level of economic activity, and 3) the prevailing economic uncertainty. Thus, it is a fragile equilibrium, and cooperation can be brought to a halt in various instances.⁴²
 - **In short, such cooperation has to be called for by the realization that it is in the economies’ interests to cooperate, and not doing so could bring about significant and long-lasting costs.**
 - Yet, the **world should advance much more quickly on cooperative/coordinated solutions to some of these problems**. Financial institutions such as the world’s central banks have advanced along these lines, e.g., successfully implementing swap lines during the global financial crisis.
 - In addition, the IMF, as a key multilateral institution, has made available several types of credit lines to countries with a strong record of economic policies but that, nonetheless, could face challenges in the current environment. In particular, at the IMFC and also at fora like the G20, important policy tools such as the design and architecture of Global Financial Safety Nets are considered to be essential for the world economy to achieve a better equilibrium.
 - Indeed, these policy tools are fundamental towards creating a more resilient International Monetary System and, thus, securing better **global economic growth**. Some solid steps have been taken in the right direction, but much work remains to be done.
- **Thank you for your attention. Without further ado, let me wish you all a very successful conference and cede the floor to John Williams.**

⁴¹ Schwartz (2000).

⁴² See, e.g., Green and Porter (1984).

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