

## *Globalization and Financial Stability*

**Remarks of Richard Berner, Director, Office of Financial Research,  
at the IMF 18TH Jacques Polak Annual Research Conference  
The Global Financial Cycle  
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### ***Introduction***

I am honored to address the distinguished participants in the IMF's Jacques Polak annual research conference, focused this year on the "Global Financial Cycle." Thank you to Maury Obstfeld, the organizers, and the IMF for the opportunity<sup>1</sup>.

My topic is globalization and financial stability. The OFR was established to identify, assess, and monitor threats to financial stability. So improving our collective understanding of the factors affecting the resilience of the global financial system is essential for achieving the OFR mission.

In my remarks today, I will emphasize two related themes: First, assessing threats to financial stability requires weighing vulnerabilities in the financial system against its resilience. Second, assuring the resilience of the financial system globally requires cross-border cooperation.

### ***Historical context***

Let me start with some historical context. When Maury asked me to speak, he said that the topic of this conference related to work I did at the Federal Reserve more than 40 years ago to model exchange-rate determination and global influences on U.S. inflation, and to understand how they would affect the conduct of monetary policy.

He was partly right. Then we focused mostly on global economic cycles and balance of payments adjustment. Following Bryant and Hendershott (1970), and Kouri and Porter (1974), our analysis was surprisingly modern: Exchange rates and asset prices were determined in asset markets. We convinced our bosses that they needed to follow global developments in the conduct of monetary policy, but that floating exchange rates would allow them to pursue domestic objectives. The monetary policy trilemma and Mundell-Fleming were alive and well.

However, as Maury, Alan Taylor, and Hélène Rey recently reminded us, the reality of capital account liberalization and floating exchange rates was that both global financial linkages and the volatility of cross-border flows and exchange rates *increased* in the following years, creating vulnerabilities in the financial system, and requiring more nuanced assumptions about monetary policy (Obstfeld and Taylor (2017), Rey (2013)). We are now alert to the *financial trilemma*, which suggests that countries can choose only two of the following: sovereignty over financial

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stability policy, integration into global financial markets, or financial stability (Schoenmaker (2013); Cecchetti and Schoenholtz (2017)).

More broadly, globalization has resulted in an increasingly interconnected financial system; indeed, interconnectedness is what makes it a system, rather than merely a collection of individual firms and markets. Interconnectedness creates benefits to the financial system through allocative efficiency and risk sharing. But it also increases the potential for the cross-border transmission of shocks, such as from solvency, liquidity, and operations, including from cyber incidents. Policies to make national financial systems more resilient to those shocks have thus become essential parts of the macroprudential toolkit. And the financial trilemma means that policymakers need to coordinate those policies across borders (Haldane (2009); Berner (2015); DTCC (2015)).

### *Challenges to financial stability policy*

Two challenges confront the new macroprudential paradigm. First, while markets and institutions are global, our policies, regulations, and laws are national in scope. This dichotomy has always constrained the architecture of the international monetary system and our efforts to ensure financial stability. It's not just, as Mervyn King famously noted, about "global banks [that] are international in life but national in death." The scope of policies and regulations affecting both nonbank financial institutions and financial markets is also largely national. Recognition of that further underscores the need for cross-border coordination.

Second, in the wake of the financial crisis, modest growth, growing income inequality, and dislocations from a changing economy have fueled a backlash against globalization and openness. Brexit is only the most prominent example. As European Central Bank President Mario Draghi recently noted, "people are concerned about whether openness is fair, whether it is safe, and whether it is equitable" (Draghi (2017)). But erecting barriers, either to trade or finance, risks fragmentation of markets and increased costs of finance, and threatens to undermine economic and financial openness, as well as the policies put in place since the crisis that have made the financial system more resilient.

In the remainder of my time today I will attempt to address three questions arising from these challenges:

1. How should we design the financial stability toolkit, and should the architecture governing its use be national or global?
2. What are some of the consequences of fragmentation, and what policies and tools might compensate for them?
3. What are the gaps in data and analysis needed to assess national and global vulnerabilities?

### *Financial globalization in context*

To answer these questions, I'll offer a little more context for financial globalization, ranging from the general to the specifics of central clearing counterparties.

Increased globalization, evident in a sharp rise in the trade of goods in relation to GDP, has driven growth in financial transactions. The emergence of global supply or value chains across borders partly fueled the growth in goods trade. In turn, driven by increased openness, technology, and financial supply chains, financial globalization since WWII far outstripped that in global goods trade (BIS (2017)). And while the financial crisis halted the growth in cross-border financial positions relative to GDP through 2015, financial globalization is far from over. The post-crisis decline in global lending was largely traceable to deleveraging by European banks (see also Lane and Milesi-Ferretti (2017) and McKinsey (2017)). In addition, financial integration is evident in prices as well as quantities: Cross-border feedback through interest rates and exchange rates appears to have intensified since the financial crisis. The Federal Reserve staff recently suggested that cross-border spillovers have increased notably since the crisis and are substantial.<sup>2</sup>

These developments suggest that our analysis of cross-border financial issues must be granular — just like in domestic finance. In the 1970s, our analysis modeled net cross-border capital flows as the financing counterpart to external imbalances. But Maury taught us that financial openness and risk assessment requires looking at gross flows and positions or stocks (Obstfeld (2012), (2017)), and doing so is widely accepted (Avdjiev, McCauley and Shin (2015); McKinsey (2017); Gopinath (2017)). They better capture the interconnectedness of and the cross-border changes in assets and liabilities of global intermediaries, the maturity and liquidity transformation that drives them, and the balance sheet and currency mismatches that represent a potential buildup of financial system vulnerabilities.

Cross-border linkages involved in both global and domestic systems for payments, clearing, and settlement are especially important. Financial reforms required central clearing of standardized over-the-counter — or OTC — derivatives in centrally cleared counterparties, or CCPs, and minimum margin standards. Central clearing through CCPs offers clear benefits for efficiency and risk management by making more efficient use of scarce collateral and pooling risk. The links between CCPs and their clearing members are far simpler and more transparent than those for uncleared transactions.

But there are also potential costs: Central clearing creates a single point of vulnerability for the failure of the system — the CCP — that must be resilient and managed carefully. Moreover, the liquidity demands and potential procyclicality of intraday margining practices — and the interconnectedness of CCPs, their clearing members, providers of custodial, credit, and especially liquidity services — means that even those less-highly connected CCPs and their clearing members may be affected by or can transmit or amplify shocks to the network (FSB-CPMI-IOSCO, and BCBS (2017); Powell (2017), Paddrik and Young (2017), FSB (2017)).

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<sup>2</sup> “For instance, European Central Bank policy news that leads to a 10 basis point decrease in the German 10-year term premium is associated with a roughly 5 basis point decrease in the U.S. 10-year term premium; by contrast, these spillovers were smaller in the years leading up to the crisis....and the exchange rate effect of changes in short-term rates is much greater than it was pre-crisis. For instance, policy news that leads to a 25 basis point increase in the expected interest rate portion of the 10-year Treasury yield is associated with a roughly 3 percentage point appreciation in the dollar, which is three times greater than the response pre-crisis” (Brainard (2017)).

## ***Toolkit Design and Governance***

Let me now turn to the first of my three questions. How should we design the financial stability toolkit, and should the architecture governing its use be national or global?

Many, including many in this room, have contributed to the development of the framework for and the articulation of the financial stability toolkit (see Tucker (2016); Haldane (2017); Cecchetti and Schoenholtz, forthcoming; and Berner, forthcoming). So I'll quickly focus on three issues related to the toolkit: (1) design, (2) structural versus cyclical tools, and (3) global coordination.

### *Design*

Designing a financial stability policy framework must start with clear objectives, strong governance, and coherent institutional roles and responsibilities. Next, it requires an ongoing assessment and monitoring of potential threats. That assessment must consider macroeconomic and market risks; credit conditions; default or solvency risk; funding, liquidity, and run risk; and spillovers and contagion. It must also use high-quality, comprehensive, and detailed data, a subject I will turn to in a moment.

At the OFR, we have developed new risk-assessment tools to assess separately vulnerabilities and stress; we think that separating them will enable us and users to identify early warning signs, whether in firms or in markets (OFR (2017b)). These tools include coverage of global developments to assess risk wherever it originates.

Whether assessing risks or designing mitigants for them, the toolkit must focus on two aspects of resilience:

1. Does the financial system have enough shock-absorbing capacity to continue to function?, and
2. Are incentives, such as those created by market discipline or transparent pricing of risk, aligned to limit excessive risk-taking?

Shock absorbers buffer hits, while what I call guardrails — incentives that affect behavior — are designed to constrain the risk-taking that can create financial vulnerabilities. An effective toolkit requires both shock absorbers and guardrails. I'll offer examples of each.

Toolkit best practices dictate that a tool is needed to counter each source of financial instability. For example, if policymakers want to combat excessive leverage, insufficient liquidity, and procyclicality, a satisfactory toolkit must contain tools to address each one, such as capital, liquidity, and haircuts or margin regulations (Kashyap, Berner and Goodhart (2011); Hanson, Kashyap and Stein (2011)). Policymakers should also assign to each target the right tool for the job — the one that has the biggest influence on the policy objective.

The framework also requires a way to calibrate policy tools and criteria for assessing their effectiveness. And it requires a way to identify and mitigate any conflicts among them or their

unintended consequences. For example, implementation of the enhanced supplementary leverage ratio has increased banks' resilience but created disincentives for them to hold low-risk assets. And the benefits of central clearing should be weighed against its costs (Ghamami and Glasserman (2016)).

Importantly, microprudential and macroprudential policy toolkits overlap and complement each other. Examples include firms' risk management, resolution tools that promote market discipline, firm-specific stress tests, and microprudential supervision and regulation. Firm-specific shock absorbers that enhance financial stability include standards for capital and liquidity.

Supervisory stress testing, which assesses losses under potential future stress scenarios, combines aspects of both the microprudential and macroprudential policy toolkits. It has become an essential tool for evaluating potential vulnerabilities in large, complex banking firms and for calibrating microprudential requirements, such as for capital based on firms' idiosyncratic risks. Stress testing also has enormous potential as part of the macroprudential toolkit to assess and measure vulnerabilities, help calibrate macroprudential tools, and expose unintended consequences of using them.

#### *Structural vs. Countercyclical tools*

Next, should we develop and employ structural — "through-the-cycle" — or time-varying tools, or both? Structural tools are aimed at building resilience to shocks and creating incentives to limit risk-taking, for example, by limiting leverage and increasing the cost of risky activities. Put simply, they can be both shock absorbers and guardrails. For example, requiring institutions to "self-insure" with capital and liquidity buffers promotes market discipline and limits leverage and liquidity transformation. Minimum floors for haircuts are buffers against adverse price moves and guardrails that can limit risk-taking and procyclicality. We clearly need these. Counter-cyclical or time-varying tools are aimed at moderating financial cycles. We may need these too.

At the risk of committing heresy at a conference on the global financial cycle, I'll confess that I'm skeptical of the time-varying approach. We and our tools aren't yet capable of detecting early the difference between a healthy credit recovery and a dangerous credit boom. I'm also not sure we have the knowledge, experience, and right institutional framework to calibrate and credibly commit to such policy tools. Last, once a decision is made to use such tools, implementing them may take time, at least in the United States.

But three points are important here. First, we should not discard time-varying tools. Tools to limit housing booms, such as variable loan-to-value ceilings, are used effectively in the United Kingdom (U.K.). More analysis and experimentation are needed to help officials decide whether, when, and how to use them. Next, the calibration of through-the-cycle tools should not be forever static. Dynamic adjustments may be needed to maintain the appropriate degree of system resilience. Third, our toolkit is incomplete, and changes in business models and markets may require developing new tools.

#### *Global cooperation and coordination?*

Finally, does effective toolkit governance require global coordination? Folks in this building have worked hard to develop critical best practices for financial stability policy governance (IMF-FSB-BIS (2016); see also Tucker (2016)). One best practice is to promote cooperation and information sharing among authorities; clearly that must include our global counterparts.

We can and must do more of both. But is cooperation enough? Should the architecture of our financial stability toolkit be global? After all, the financial system is global, and pursuing financial stability is a shared global concern (Cecchetti and Tucker (2015)). Indeed, “given the global nature of the financial system, it is difficult to see how any individual jurisdiction can proceed to ensure the resilience of its own financial system without cross-border coordination” (Cecchetti and Schoenholtz, forthcoming).

We advocated for global macroeconomic policy coordination in the 1970s, and experienced some of the frustration from trying to make it happen. As a member of the policy community now, I can testify that cooperation and coordination in policy, both domestically and globally, is still challenging.

However, I am encouraged by the widespread recognition of the need for and some important progress toward cross-border cooperation *and* coordination. I’ll cite three examples.

In CCPs, the global nature of OTC derivatives markets has made cooperation and coordination essential. Initiatives by the Financial Stability Board and Committee on Payments and Market Infrastructures – International Organization of Securities Commissions, or CPMI-IOSCO, are broadly and globally accepted, for example, principles for financial market infrastructures, and work plans to achieve resilience and to design recovery-and-resolution regimes (Gracie (2015), Coeuré (2017b), Cecchetti and Schoenholtz (2017); U.S. Treasury (2017)). Building on other cross-border agreements, the European Union and the United States agreed on mutual CCP equivalence early in 2016 (CFTC (2016)). Supervisory stress testing of multiple CCPs in the United States and Europe has assessed resilience in both jurisdictions, and more recently, sufficiency of funding liquidity in the United States ((CFTC (2016b); ESMA (2016); CFTC (2017)). Yet, more work is needed to implement effective cross-border oversight and risk assessment for systemically important CCPs and the interaction with their clearing members and counterparties, and to complete work on resolving troubled CCPs while protecting taxpayers.

A second example is that the Federal Deposit Insurance Corporation and the Bank of England reached agreement in 2012 to develop contingency plans for the failure of globally systemic banking institutions that operate both in the United States and the U.K. Their shared strategy was aimed at accommodating both U.S. and U.K. laws (FDIC-BOE (2012)). Implementation has involved the creation of joint crisis management groups and resolution colleges to solidify cooperation between home and host authorities. Such cooperation is essential to make cross-border resolution credible. Implementation has also involved agreement on the creation of internal total loss-absorbing capacity, or TLAC — liabilities of material subsidiaries that enable losses to be pushed up to the resolution entity in either the same or different jurisdiction (Tucker (2014), Bank of England (2017)). More work is needed here too, for example, in the form of tabletop and other exercises to simulate appropriate responses to major stress events.

A third example: In the financial crisis, central banks provided unprecedented liquidity assistance to institutions and markets, including funds denominated in dollars through swap lines. The Committee on the Global Financial System has developed a framework to provide liquidity assistance in future crises (CGFS (2017)). Key issues include determining the criteria for providing liquidity assistance to large, globally active financial institutions and to markets, and developing appropriate governance and transparency for the provision of liquidity assistance. The goal is to alleviate liquidity shortfalls that arise in several jurisdictions simultaneously, whether the liquidity is provided to active players or markets.

### **Fragmentation risks**

These examples of global cooperation are relatively good news. But the challenges from fragmentation are real. What are some of the consequences of fragmentation, and what policies and tools might compensate for them?

Take Brexit as a leading example. The rules of the game for financial services in Europe have been defined by the European Union's single market, which has fostered cross-border liberalization. Lacking clear rules of the game, Brexit may stifle cross-border financial activity, raise the cost of intermediation, and depress economic activity. For Europe, such fragmentation runs counter to the aims of European Capital Union and the use of "market-based" finance to reduce the dependence on banks. If segmentation of clearing occurred, it could reduce the benefits of clearing, including of netting and risk diversification. Faced with the uncertainty over these issues, financial firms are diversifying geographically to hedge their bets.

These consequences need not occur if global policymakers use Brexit as an opportunity to agree on equivalent regulatory principles across borders as the basis for open markets. For that to happen, cooperation and coordination will be needed, building on the post-crisis progress I noted earlier. In the eyes of European supervisors, that will mean recognizing "the legitimate interests of non-domestic authorities" in dealing with issues such as the global consequences of a potential CCP failure (Cœuré (2017c)). That is coordination, not protectionism.

Here, I will quote Benoît Cœuré (2017d):

So more, not less, international cooperation is crucial to safeguard financial stability. This is a point worth emphasising, particularly at times where a push-back from internationally agreed standards is being discussed openly. In an integrated global economy, financial regulation has to rely on internationally agreed standards. Turning back the clock on international financial regulation would revive distrust, create financial fragmentation, and risk regulatory arbitrage and a race to the bottom.

In fact, leveling the global regulatory playing field to avoid cross-border regulatory arbitrage and fragmentation has long been a major post-crisis goal for international cooperation, especially since the passage of financial reforms (Tarullo (2010) and FSB (2017)).

## The global need for high-quality, granular data

This brings me to my last question: What are the gaps in data and analysis needed to assess national and global vulnerabilities? Like the answers to the first two questions, the answer entails cross-border cooperation and coordination.

Good data are essential for good policymaking. Consequently, we at the OFR are committed to improving the quality, scope, and accessibility of financial data (Office of Financial Research (2016), Section 2.7). Data needed to inform financial stability analysis and policymaking must often be granular. That's clear in the case of CCP risk assessment and resilience. It's also in part because we are assessing risk in the tails, not in the mean or mode. Such data must also be standardized to assure their quality; to make them easier to compare, aggregate, and analyze; and to make them shed light on who owns what risks. Standards such as the Legal Entity Identifier enable precise identification of parties to financial transactions.

I'll focus on one signature project to illustrate.

Data gaps persist in securities financing transactions, including repurchase agreements, or repo, and securities lending. In particular, comprehensive and detailed data are scant for about half of the U.S. repo market — so-called bilateral repo transactions. These data are essential both for assessing market vulnerabilities and for constructing reference rates that are alternatives to LIBOR (ARRC (2017)).

At the OFR, we have mapped the sources and uses of such funds and of collateral to better understand these markets, assess risks, and identify gaps in available data. We have also launched pilot projects with the Federal Reserve and Securities and Exchange Commission to understand how to fill the gaps in data for bilateral repo and securities lending transactions with permanent collections. Early next year we will publish a rule enabling a permanent collection for the bilateral repo data.

Providing more and better data is important. Standardizing them and sharing them now, in financial calm times, across borders is equally so. “The interconnectedness of financial markets establishes an obvious need to improve our *global* ability to collect, aggregate, disseminate and share data” (Cœuré (2017a)). That's why we have collaborated with the Bank of England and the European Central Bank to create frameworks for setting global standards for granular data, such as in swaps and other OTC derivatives (Office of Financial Research (2017a)).

Let me close by thanking the IMF for its work on global financial stability, on making financial data better and more available, and for collaborating globally through events like this one.

Thanks for your attention. I'll be happy to answer a few questions.

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